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OUTLOOK AND DEVELOPMENT STRATEGY FOR THE B.C. PORK INDUSTRY

Under
Canada-British Columbia Subsidiary Agreement on
Agriculture and Rural Development

July, 1979

A Report By:

Foodwest Resource Consultants Ltd.
R. & H. Services Ltd.
Woods, Gordon & Co.

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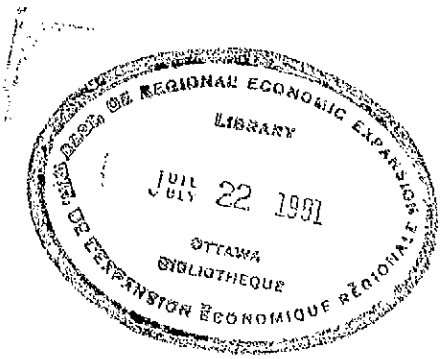

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THE CONSULTANTS ACKNOWLEDGE WITH GRATITUDE THE ASSISTANCE AND CO-OPERATION RECEIVED FROM THE NUMEROUS GOVERNMENT AND PRIVATE ORGANIZATIONS AND INDIVIDUALS DURING THE PREPARATION OF THIS REPORT.

THE RESPONSIBILITY FOR THE REPORT AS WRITTEN, AND ALL CONCLUSIONS REACHED HEREIN, IS THE CONSULTANTS' ALONE, AND DOES NOT NECESSARILY REFLECT THE OPINIONS OF THOSE WHO ASSISTED DURING THE COURSE OF THIS INVESTIGATION AND THE FEDERAL PROVINCIAL GOVERNMENTS WHICH FUNDED THE STUDY.

* * * * * * * * * * * * *

June 28, 1979

Mr. J. R. Steele
ARDA Co-Ordinator
Ministry of Agriculture
Parliament Buildings
Victoria, B.C.
V8W 2Z7

Dear Mr. Steele:

At your request, we have now completed an update of our review of the B.C. pork industry, first presented in January 1979. We have added considerable additional data and material to the report in order to answer questions raised by the Part I Technical Committee. We have also carried out further research and have added new sections to the report to reflect developments in the industry during 1978 and early 1979. Our recommendations have been expanded to cover some of the concerns raised by the Swine Breeders Association and to outline a more direct role whereby the Government can assist in the industry expansion.

In carrying out this study, we determined that there are significant opportunities to expand B.C. hog growing and processing operations. To assist the Ministry in fostering this expansion we have prepared a development plan and a series of recommendations to encourage a fourfold increase in hog production within the province by 1985.

A full report of our findings, analysis and recommendations is provided in the attached report. We have summarized our major findings and recommendations in this summary for your convenience.

Study Team

The study was carried out by three firms acting jointly in accordance with the terms and conditions of a joint study proposal submitted by these firms. These firms are Woods, Gordon & Co., R. & H. Services Ltd. (formerly Canadian Bio Resource Consultants Ltd.) and Foodwest Resource Consultants (formerly Robin Smith Consultants Ltd.). The field work for the producer segment of the industry was carried out by R. & H. Services Ltd., and for the processing sector by Foodwest Resource Consultants.

The analysis, report writing, findings and recommendations were prepared by Woods, Gordon & Co. in conjunction with the other members of the study team.

Objectives and Scope

The study was carried out in six parts. In the first part, we reviewed the current status of the B.C. pork industry. We identified the number of full-time hog producers, and the availability of slaughtering and processing facilities. From interviews with producers and processors, we identified the expansion potential and capacity constraints of the current production and processing facilities.

With the assistance of processors and retailers, we examined the wholesale and retail marketing network and determined the methods by which product is sold by the processors. We reviewed the effect of transportation costs on feed prices and on hog shipments within the province. We also looked at the cost and market competitiveness of bringing pork from outside the province for fresh sale and further processing.

We reviewed the overall consumption of pork and determined the various products made from pork cuts. Data was gathered on the sources of pork from inside and outside the province. The current methods and levels of hog pricing were reviewed and compared briefly with Alberta and mid-western U.S.A. hog prices.

The purpose of part one of the study was to develop a better understanding of the B.C. pork industry as a whole, and to identify the interrelationships, opportunities and constraints which exist in each sector of the industry. This background knowledge should assist B.C. hog growers, processors, and retailers to better understand developments within the industry. It will also be of assistance to the Ministry of Agriculture in planning and establishing policies to assist the future development of the B.C. pork industry.

Parts two and three of this report look at trends and developments in the pork industry in B.C. and other parts of Canada and the mid-western United States, in order to determine developments which could have a significant impact on the outlook for development of the B.C. industry. This research was carried out by members of the staff of R. & H. Services Ltd. and Foodwest Resource Consultants Ltd., who visited representatives of the industry in each of these pork producing areas. In addition, we carried out an extensive review of published literature on developments within the pork industry.

Our review covered the decline in Western Canadian hog production and assessed the impact of this decline on the Western Canadian pork industry. We reviewed the trend to consolidation and higher industry capitalization in the industry and reviewed the impact of the hog carcass index system on producer returns. We also reviewed the development of environmental controls and legislation affecting hog producers in B.C.

Because feed and feed costs are such an important factor in overall hog production costs, we carried out a detailed review of feed costs and feed freight subsidies. We studied the role of the Canadian Wheat Board in administering feed prices and examined the possible impact of the recent establishment of domestic feed grain quotas on feed grain prices. We looked at current feed prices and determined the current and historical differentials between B.C. and Alberta feed prices. We also examined the alternative of on-farm feed mixing as a potential method of reducing producer feed costs.

In this section, we also looked at trends in increased hog production costs and changes in the availability of slaughtering and processing facilities in Western Canada. We assess the impact of these changes on the Western Canadian pork industry and review the realignment of marketing patterns which have resulted from a decline in Western Canadian hog production. We also study the changes in the pattern of Canadian pork trade which have come about because of shifts in hog production patterns in Canada.

In Part IV of our report we looked at the competitive position of the B.C. pork industry in relation to producers and processors in other pork producing regions of Canada and the mid-west U.S.A. Particular attention was paid to B.C.'s competitive position in relation to Alberta hog producers. We also looked at the potential impact on the B.C. industry in the event of a resurgence of Alberta hog production. Having determined that B.C. hog producers can be competitive in servicing the B.C. market, we looked at various regions of the province to determine the comparative advantages of each for increased hog production.

In Part V of the report we identify a number of constraints to the development of the industry for hog producers, slaughterers, and processors. We review the role and importance of the B.C. Swine Breeders Income Assurance

Program in encouraging new production and indicate that one of the major hurdles to overcome to achieve the expansion potential of the industry is the development of new efficient slaughtering facilities. We also indicate the short term disruptions in hog prices and marketing which are likely to occur with the expansion of the industry. We make a rough estimate of the cost to increase hog production and processing in B.C. and the benefits to the economy which could result from this investment.

In Part V we look at the outlook for hog marketing in B.C. and the current efforts by some hog producers to form a hog marketing commission. We consider the advantages and disadvantages of such a system and also consider a number of alternatives to the present marketing system. In order to help improve relations between producers and processors, we recommend the creation of a pork industry steering committee to help plan and co-ordinate the activities of producers, slaughterers, processors, and retailers in developing the B.C. industry.

Part VI of the report outlines a strategy for development of the industry and the activities which the Government can participate in to support and encourage the development of the industry. Specific recommendations are made to improve the attractiveness of the industry for investment by producers, slaughterers, and processors. These recommendations include specific assistance to producers and slaughterers and cover recommendations affecting land use, financial and technical support to producers and financial and marketing support to slaughterers and processors.

Because we recognize the need to have an organization in place which can co-ordinate the needs of producers, slaughterers, processors, and retailers we recommend the creation of a Pork Industry Steering Committee to co-ordinate the activities of the industry during its expansion stage. This expansion in unlikely to

come about without substantial Government assistnce because of the constraints to expansion outlined in Part IV. Thus we outline the major role which the Government will have to play in order to assist in the expansion of the industry and the costs, risks, and benefits to the Government in supporting this expansion.

We believe that our report provides a comprehensive review and analysis of the B.C. industry and that it can be of great assistance in the development and expansion of the industry.

Summary of Findings

Current Status of the Industry

Total hog production in B.C. is likely to increase over the next year from about 100,000 market hogs slaughtered in inspected slaughterhouses, to about 150,000 market hogs. This still falls far short of B.C.'s consumption of pork products which is the equivalent of slightly more than 800,000 hogs. The majority of the hogs produced in the province are raised by about thirty full-time hog producers, each producing more than 1,800 hogs per annum. It is our opinion that B.C. hog producers can be competitive with hog producers in other regions of western Canada provided that they concentrate their production facilities in areas of the province where feed and transportation services can be obtained at competitive prices. The current producing regions including the Fraser Valley, north Okanagan and Peace River regions are the most likely areas for further expansion of hog growing activities. In order to bring about a significant expansion in hog production, the industry must obtain a significant increase in the number of full-time hog producers.

There are three hog slaughtering plants which do most of the hog killing. These are International Packers Ltd., Borsato's Meats Ltd. and Kohler's European

Sausage Ltd. We estimate that the existing facilities of these plants have a killing capacity of 200,000 hogs per annum. There are limitations on the expansion of these facilities and we have indicated that a new slaughtering plant should be built by about 1981 in order to allow a continued expansion of hog production beyond the 200,000 hogs per year level.

Expansion Plan

We have identified short, medium and longer term objectives for the B.C. pork industry which we believe are achievable over the next two to seven years.

B.C. Hog Growth Potential

Term	Years	Objective (Hogs per Annum)
Short	1 - 2	150,000
Medium	3 - 4	300,000
Long	5 - 7	400,000 - 500,000

In order to achieve these medium and longer term objectives, we estimate that the industry will require over 100 new full-time hog growers, each producing a minimum of 1,800 hogs per annum.

We estimate that the total cost to establish this new production will be in the range of fifty to sixty million dollars. Modifications to existing slaughtering facilities and the establishment of a new slaughter facility will likely cost an additional four to five million dollars. Because of the high financial and operating risk involved, we believe that new producers may require initial financial support or income assurance from the Ministry to assist them in raising private financing for the start up of new operations.

Recommendations

We recommend that the Ministry establish an objective to increase B.C. hog production to the 400,000 to 500,000 hogs per year level by 1985. In order to help achieve this objective, we recommend the Government establish a program of assistance to aid the development of the industry.

This program should have three main objectives. These are:

1. To improve the industry climate by the establishment of a B.C. Pork Industry Steering Committee to represent all segments of the industry.

2. To encourage a substantial increase in the number of full-time hog producers by:

   i) providing financial support and full-indemnity farm income assurance to all full-time hog producers expanding or establishing new hog production operations.

   ii) encouraging the concentration of the industry within major producing areas to gain the benefit of lower feed and transportation costs for producers.

   iii) increasing swine production education programs to encourage new producers to enter the industry.

   iv) providing technical assistance in the design and installation of the latest hog production facilities.

   v) providing financial assistance to subsidize the cost of manure handling equipment, since the costs of this equipment do not contribute directly to the producers' income.

   vi) encouraging municipalities to give municipal approval to new hog production units.

3. To encourage an expansion of hog slaughtering and processing operations in B.C. by:

   i) encouraging the rapid expansion of B.C. hog production.

   ii) encouraging the establishment of a new large scale hog slaughtering plant within the province to kill 200,000 hogs per annum.

   iii) by anticipating short term problems and market and price dislocations associated with the doubling of hog slaughtering facilities within the province and taking appropriate measures to offset these.

We recommend that a B.C. Pork Industry Steering Committee comprised of representatives of the producers, processors, retailers and Ministry of Agriculture staff be established to co-ordinate the implementation of this five-year industry expansion plan.

In our report we identified a number of short term problems which we expect may occur during the course of the industry expansion. One of the functions of the Industry Steering Committee would be to follow the development of the industry and to anticipate and work out solutions to problems before they resulted in serious disruptions to the industry.

The study team has given careful consideration to the introduction of supply and price management techniques as part of the industry expansion program but we do not believe that these would be beneficial to the industry primarily since prices for hogs and pork products are determined by the North American market and cannot be controlled within any one market area.

We believe that the recommendations which we have developed could help to bring about a rapid and successful expansion of the B.C. pork industry.

Yours very truly,

Foodwest Resource Consultants
R. & H. Services Ltd.
Woods, Gordon & Co.

/dm

B.C. PORK INDUSTRY

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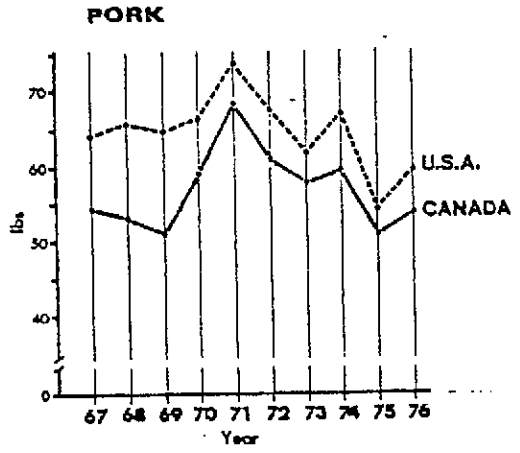
CANADA AND U.S.A.

(1967-1976)



I. CURRENT STATUS OF THE B.C. PORK INDUSTRY

Market Outlook for Pork Products

Consumption of pork products has ranged from 50 to 60 pounds per capital within Canada over the past ten years, as set out in the graph on the opposite page. This consumption rate has been consistently below the U.S. rate over the same period, although this difference has been narrowing.

The consumption data developed in this industry is in fact a calculation of "domestic disappearance". This is calculated from the animal slaughter data, import and export data of pork and pork products, plus estimates of farm consumption not recorded in the slaughter data. Utilizing this method, we have developed estimates of B.C. consumption as follows:

Estimated Annual Pork Consumption in B.C.

	Millions (pounds)	Per Capita (pounds)
1972	136.7	61.0
1973	132.5	57.5
1974	141.0	59.3
1975	123.8	50.9
1976	131.0	53.5
1977	132.0	53.0
1978	141.0 (est.)	56.0

The level of consumption agrees closely with overall Canadian data. The rapid drop in 1975 was accompanied by similar drops in the U.S. and Canadian consumption data.

We were asked to provide information about the use of various pork cuts, to identify the key products of the industry and how they are used. There are nine wholesale cuts which are made from each half of the hog carcass. These cuts are described as wholesale because each requires further cutting or processing before being ready for retail sale. The four major wholesale cuts, or primal cuts, include:

leg (ham)
loin
belly
shoulder - butt
- picnics

The four primal cuts are the most desirable cuts and comprise approximately 66% of the average pork carcass. The five remaining wholesale cuts, or "miscellaneous" cuts, include:

feet
spare ribs
neck bones
jowl
back fat

All parts of the carcass, including scraps and fat, must be utilized and sold in a manner which will recover all the costs of operations. Because about 60% of the hog carcass is processed further into specialized products, such as bacon, cold meats, weiners, etc., the processor faces a more challenging marketing task than that faced by, for instance, a beef packing plant.

Pork is different from other fresh meats in the way it is treated on a wholesale basis. Beef, lamb and veal are usually sold to retail stores as half or quarter carcasses (whether as carcasses or in boxed form). Pork, in contrast, is sold by the wholesale cut, described above. This system has evolved because so much of the pig can be efficiently utilized at the packer level to produce cured pork products and sausages, and because a retail butcher would be unable to sell much of the pork carcass without further processing.

The wholesale cuts can be converted into retail cuts or cured and/or smoked. Loins are normally sold fresh, as chops or roasts, but some are cured and smoked for Canadian back bacon. The leg, belly, butt, picnic, jowl and often the spare ribs can be cured and smoked. The feet may be pickled and the neck bone sold for soup. The back fat and other fat trim is normally rendered into lard.

Certain inedible by-products unfit for human consumption are sold as animal feed or rendered into other recoverable products.

Major further processed products from pork are hams of various types which all come from the leg area of the carcass; back bacon or peameal bacon from the loin; slab and sliced bacon from the belly; and cottage rolls and smoked picnics, both of which come from the shoulder area of the carcass. There is also a wide variety of fresh, cured and smoked sausages produced from pork. The various ways of treating these products all result in different flavours, characteristics and tastes. Weiners, frankfurters and luncheon meats are a high volume processed product which contain a significant percentage of pork.

There is little expectation for a large growth in the consumption of pork in B.C. As our consumption pattern has been very stable over the past ten years. Pork products are not used extensively in the food services industry, and a greater portion of meals are now eaten away from the home. This may cause pork consumption over the longer term to either decline slightly on a per capita basis, or at best to continue its stable consumption pattern around 50 or so pounds per year. There will, however, be significant fluctuations in the consumption of pork products from year to year as pork is a prime substitute for beef when beef prices become excessive. When beef prices return to normal, beef consumption increases, and pork consumption falls off.

Structure of the B.C. Pork Industry

The industry is composed of four major segments, the producers, the slaughterers, processors and the retailers. Meat purveyors, while forming a significant part of the meat industry by providing distribution to the food service industry, are not a significant part of the pork industry since relatively little pork is used by the food service outlets.

The B.C. pork industry structure, flowing back from the consumer, demonstrates the relatively limited importance of the B.C. operations in this industry. The figures in brackets show the approximate percentage of pork supplied by hog producers in B.C., the prairie provinces, and the U.S. in January 1979.

Consumer

Retail Stores
(over 2,000 stores)

B.C. Slaughterhouses & Processors	Prairie Slaughterhouses & Processors	U.S. Slaughterhouses & Processors
(12%)	(74%)	(14%)

Some processors (such as Burns, Swifts), acquire the finished product from their own or other plants outside of B.C., and provide only a distribution system for pork products in B.C. Other B.C. processors, such as Fletchers or Canada Packers, bring in carcasses or cuts from Alberta or the U.S., and do some processing in B.C. Only one national packing house, Intercontinental Packers Ltd. carries on slaughtering operations in B.C. In addition there are several local B.C. slaughterers who carry on slaughtering and processing operations, but these local slaughtering operations account for less than 10% of B.C.'s pork consumption.

Since there is not a sufficient volume of hogs available to meet the requirements of the B.C. processors, the shortfall is made up by purchases of pork in various forms from Alberta and other provinces, and U.S. sources. This pork is brought into the province either by the local B.C. slaughterhouses and processors, or by the Alberta slaughterhouses and processors for further processing here or for direct sale as fresh pork to B.C. retail food stores. In some cases the retail food store chains purchase fresh pork direct from U.S. slaughterhouses and processors.

Each segment of the industry and its status is discussed separately in the following sections of this report.

Producers

1978 was a year of continued growth in B.C. hog production. Market hog production slaughtered by inspected slaughterhouses in B.C. increased to about 94,000 hogs compared to 79,000 hogs in 1977, as shown in the table below:

Origin of B.C. Hogs Killed in B.C.
Inspected Slaugherhouses (1)

(in 000's of hogs)

	Lower Mainland	Okanagan Kamloops	Vancouver Island	Peace River	Other	Total
1970	46	7	4	6	-	63
1971	58	9	2	8	-	77
1972	35	7	3	7	-	52
1973	30	7	2	6	1	46
1974	47	2	4	7	2	62
1975	47	6	6	6	2	67
1976	44	9	6	5	-	64
1977	48	12	8	9	2	79
1978	55	18	12	8	1	94

(1) Source: Agriculture Canada, Food Production & Marketing Branch

In addition to market hogs grown for sale to inspected slaughterhouses and processors, B.C. farmers produce another 25,000 hogs per annum for on-farm or local community consumption. These hogs are either killed on the farm or in non-inspected slaughterhouses and are therefore not included in the statistics shown above. Thus total hog production in 1978 including market hogs and hogs grown for local consumption was about 120,000 hogs.

B.C.'s total 1978 hog production now accounts for about twelve percent of the Province's annual consumption of pork and pork products. This is well above

Table 1

B.C. HOG PRODUCTION - 1977

Production per Farm per Annum	Number of Producers	% of Producers	Total Market Hog Production	% of B.C. Kill	Approx. % of B.C. Pork Consumption
Over 400 hogs	41	10.8%	53,900	68.2	6.7%
Less than 400 hogs	337	89.2%	25,100	31.8	3.1%
	378	100.0%	79,000	100.0%	9.8%

the seven to eight percent level of production of recent years but still represents only a small portion of the Province's total market needs. To satisfy B.C.'s demand for pork, B.C. processors and retailers purchase pork and pork products from hogs grown and slaughtered in Alberta, Saskatchewan, Ontario, Quebec and the mid-western United States.

There are still less than twenty hog producers in B.C. who make their full-time living from raising hogs. According to R & H Services Ltd., a farmer would have to raise a minimum of 1,800 to 2,000 hogs per annum, in order to make a full-time living from hog farming operations. A production level of 1,000 hogs or more per annum supplemented by other farm income would also be a viable unit. Production of less than 1,000 hogs per annum would mean that a farmer would not be able to rely on hog production for a majority of his income.

According to the B.C. Ministry of Agriculture data supplied by the Livestock Branch, 41 producers, each marketing more than 400 hogs, accounted for about 68% of the total production slaughtered and graded in the province in 1977. A total of 337 other growers, each producing an average of 90 hogs a year, accounted for the remaining 32% of production. These figures are illustrated in Table 1, opposite.

In terms of B.C.'s total pork consumption, these small, part-time operations produce only 3.1% of the Province's pork requirements.

The table below shows an analysis of the number of producers and hogs marketed by region for the 41 producers marketing over 400 hogs in 1977.

1977 - Hog Marketings Over 400 Hogs

Area	Producers	Hogs Marketed	% of Total Hogs
Lower Mainland	20	31,993	60
Vancouver Island	6	6,818	12
Okanagan	8	8,389	16
Peace River	4	4,503	8
Kootenay	2	1,432	3
Cariboo	1	764	1
	41	53,899	100%

There was little change in 1978 in terms of the number of producers marketing over 500 hogs per annum. The table below prepared by the Swine Breeders Association shows a breakdown of the number of hogs claimed under the Farm Income Assurance program for the period January 1 - December 31, 1978. There was a total of 50,800 hogs claimed by 80 producers. Of these 80 claimants, only 40 marketed more than 500 hogs in 1978.

Analysis of 1978 Producer Claims
Under the Farm Income Assurance Program for Hogs
by Size and Location

Hog Shipments	Lower Mainland	Vancouver Island	Okanagan Kamloops	Other	Total
1 - 499	20	-	18	2	40
500 - 999	13	-	7	3	23
1000 - 1800	7	3	3	-	13
1800 +	2	2	-	-	4
Subtotal	22	5	10	3	40
TOTAL	42	5	28	3	80

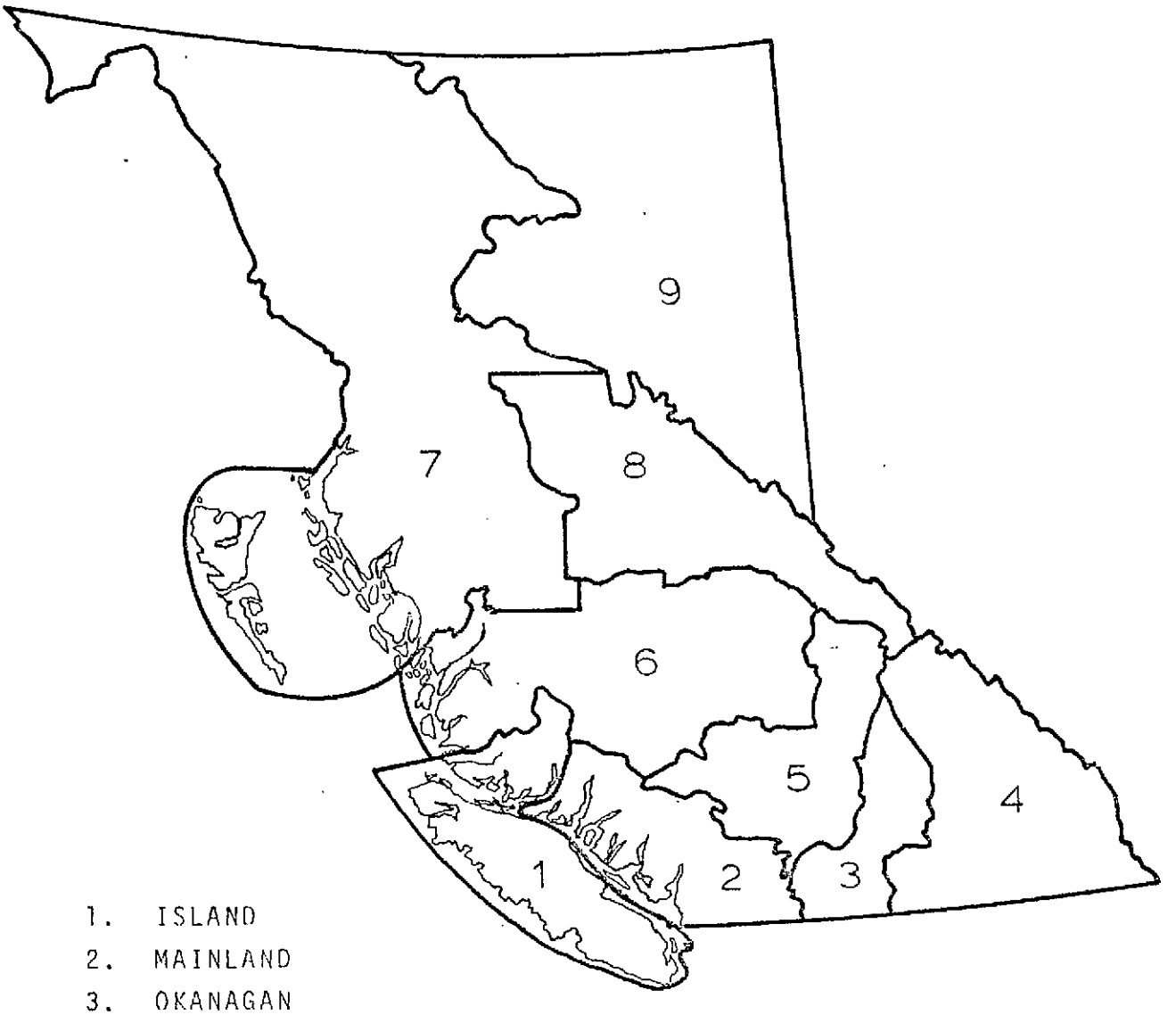
Since most major producers are covered by the Farm Income Insurance Program, this analysis provides a reasonably good breakdown of the current structure of the industry.

The table does not show the impact of the expansion which is taking place in the industry with the establishment of new hog production units in 1978 which will be coming into full production in 1979. This expansion was first noted in our survey of swine producers in 1978 and is continuing according to a recent survey taken in March of this year.

In the course of this study, questionnaires were sent to 157 B.C. hog growers by the staff of R. & H Services Ltd. The sample selected was drawn from the membership list of the B.C. Swine Growers and represented most of the larger producers in the industry. The purpose of the questionnaire was to obtain information concerning the extent and utilization of the current facilities of producers. Producers were asked to identify their expansion plans and to indicate major problems associated with their operations. A copy of the questionnaire used by R. & H. Services Ltd. is included as an appendix to this report.

The producers surveyed indicated that they had the capacity to produce about 90,000 hogs per annum. They also reported that they had under construction or intended to constructed new facilities to support the production of an additional 37,000 hogs per annum. During 1978, much of this construction was carried out and has now been completed. About half of this expansion is taking place in the Fraser Valley with the balance in the north Okanagan. No significant expansion was made or anticipated outside of these two regions.

The results of the survey by region are shown in the following table.



1. ISLAND
2. MAINLAND
3. OKANAGAN
4. KOOTENAY
5. THOMPSON
6. CARIBOO
7. SKEENA
8. OMINECA
9. PEACE

Figure 2-1 B.C. Agricultural Reporting Regions

Swine Study Survey
April 1978

	Area	Questionnaires Sent	Questionnaires Returned	Potential Sow Herd Increase with existing Facilities	Planned Sow Herd Increase	Planned Expansion in Market Hogs
Island	1	14	8	100	224	4,010
Mainland	2	74	51	466	1,222	19,600
Okanagan	3	6	4	25	500	7,000
Kootenay	4	3	2	115	-	-
Thompson	5	52	42	405	1,474	14,999
Cariboo	6	2	2	48	50	900
Skeena	7	1	-	-	-	-
Omineca	8	-	-	-	-	-
Peace	9	5	3	-	-	-
		157	112	1,159	3,470	46,509

Telephone calls were made to follow up on those not responding to the questionnaire and an additional 18 replies were received with incomplete data or an indication that the producers had ceased hog growing operations. In total the 112 respondents indicated that they produced about 54,000 market hogs in 1977. Thus our sample covers about seventy percent of the market hogs grown in B.C. Based on a review of the responses received, most of those producing more than 400 hogs per annum responded to the questionnaire. Thus the expansion indicated above reflects the expansion plans for the industry.

The questionnaire covered a number of questions dealing with the current operations to provide us with a profile of the industry. The survey indicated that the average age of a B.C. hog producer was 43 years.

Sixty six respondents indicated that hog farming was their major source of income while fifty one said that it was only a supplementary source of income.

Eighty of the 117 respondents to the questionnaire indicated that they relied on one or more other sources of income to augment their earnings from hog production. The sources of supplementary income cited by these producers were:

Dairying	4
Beef Cattle	20
Poultry	5
Field Crops	15
Off-Farm	36
TOTAL	80

Only 62 respondents answered the question as to whether or not they were making full use of their production facilities. Thirty-six respondents said yes and twenty-six said no. The lower response rate to this question may reflect the fact that only a smaller number of producers have developed specialized facilities for hog production (i.e. the 40 or 50 producers marketing more than 500 hogs per annum). Those producers raising less than one hundred market hogs per year may have no specialized facilities.

Of these 62 respondents, 57 responded to the question concerning their expansion plans. Twenty-nine producers indicated that they planned to expand their operations while twenty-eight expressed no expansion plans. The expansion plans indicated to us by these producers appear to have been realized during 1978, and a further expansion is now indicated by a later follow up survey carried out by the B.C. Swine Breeders Association.

Since May of last year, 92 new members have joined the B.C. Swine Breeders Association, mostly in the Fraser Valley and Okanagan/Kamloops area, as shown by the table below:

B.C. Swine Breeders Association
New Members Since May 23, 1978

Area	Number
Fraser Valley	55
Vancouver Island	3
Okanagan/Kamloops	24
Other	10
TOTAL	92

A survey was conducted by the Association in March of 1979 to determine the present and planned sow population. This survey found that the present sow population had increased to 10,500 sows (from about 7,000 sows in 1978) and that a further increase of 3,800 sows was planned by mid 1980.

The Association now estimates that with an average 15 pigs/sow the present sow population could produce about 157,500 market hogs per annum. If a population of 13,800 sows is reached in early 1980, hog production in B.C. could increase to 200,000 hogs per annum by early 1981.

Currently B.C. producers are marketing about 2,250 hogs per week. Most B.C. hog production is coming from the Fraser Valley, with limited production coming from the Vancouver Island, north Okanagan, and Peace River areas. Production is divided approximately as follows:

B.C. Weekly Hog Production
(by region - estimated for 1978)

	Hogs per week
Fraser Valley	1,500
Vancouver Island	200
Okanagan Valley	350
Peace River	125
Kootenay	75
TOTAL	2,250

The main areas of expansion in the industry according to the Swine Breeders Associations list of new members appears to be in the Fraser Valley and Okanagan/Kamloops area.

A number of new hog producers have indicated their intention to start up hog farming operations. Several factors have encouraged this expansion. Farm incomes and hog prices have been high. There has been no quota barrier or other cost of entry into the business and this has encouraged some new producers to

consider hog farming as an alternative to other areas of farming which have restrictions to entry and which in addition require the purchase of quota.

The establishment of the B.C. farm income assurance program has also reduced the financial risk of a major loss on operations. This has encouraged farmers to start up and bankers and others to support new hog farming operations. In our survey of producers, nearly all producers cited the B.C. farm income assurance program as being important to their operations and to the B.C. hog industry. Without this program, many indicated that they would not be in the industry or they would not have expanded their operations. The importance of the program to the industry is also indicated by the number of claimants covered under the program in 1978. Almost all producers producing more than 500 hogs per annum made claims under the program with a total of 50,800 out of the 94,000 hogs marketed being insured.

Despite the number of favourable factors encouraging expansion, there are also a number of constraints to expansion faced by B.C. producers. The pork industry is traditionally a cyclical industry. For instance, hog prices in the spring of 1978 were about 70¢ - 80¢ per pound, while by the spring of 1979 they had dropped to 65¢ per pound. This price of hogs is determined by supply and demand factors throughout North America and is beyond local control in any one producing area. The cost of establishing a new hog farm in Western Canada has increased by more than 250% since 1961. The cost increases since 1970 using (1961 = 100) as a base index, are shown in the table below:

Capital Cost of Land & Buildings
Farm Input Price Indexes

	Index (1961 = 100)
1970	151.4
1971	156.9
1972	183.5
1973	199.9
1974	222.7
1975	261.9
1976	275.1

Source: Statistics Canada (62-004)

With start up costs increasing each year, a new producer will be faced with much higher fixed costs and debt service costs per hog than the average costs of the other established producers in the industry.

The Farm Economics Branch of the B.C. Ministry of Agriculture has recently prepared capital cost and operating cost estimates for a 100 sow farrow to finish swine operation.

They have estimated that the total capital costs, including land and buildings to establish a new hog farm unit would be about $410,000 in the Lower Mainland region, as outlined in the table below:

Estimated Capital Costs for a
100 Sow Farrow to Finish Enterprise

	Total	Per Sow
Buildings	$ 130,000	$ 1,300
Equipment	75,000	750
Tractor & Pickup Truck	20,000	200
Livestock	25,000	250
House	40,000	400
Land	60,000	600
	$ 350,000	$ 3,500
Start-up Costs	60,000	600
TOTAL CAPITAL REQUIREMENTS	$ 410,000	$ 4,100

Table 2

ESTIMATED PRODUCTION COSTS - JANUARY 1979 FOR A NEW 100 SOW-FARROW TO FINISH UNIT

(1800 hogs per annum)

Expenses	Total	Per Market Hog	Per CWT.	% of Total
Feed	$112,787	$ 62.66	$ 37.97	57.1
Veterinary & Medicine	2,250	1.25	.76	1.2
Utilities (electricity, gas, phone)	2,500	1.39	.84	1.3
Insurance (buildings & contents)	2,125	1.18	.72	1.1
Property Taxes	600	.33	.20	.3
Marketing & Transportation	2,700	1.50	.91	1.4
Equipment Repairs	1,879	1.04	.63	1.0
Building Repairs	1,683	.93	.57	.9
Legal, Accounting	1,000	.56	.34	.5
Miscellaneous	500	.28	.17	.3
Interest Payments (operating)	1,000	.56	.34	.5
Manure Disposal (operating costs)	3,300	1.83	1.11	1.6
Hired Labour	2,000	1.11	.67	1.0
Breeding stock	7,050	3.92	2.38	3.5
	28,587	15.88	9.64	14.6
Total Costs Before Financing, Depreciation Costs, and allowance for Return on Labour	$141,374	$ 78.54	$ 47.61	71.8
Financing Costs				
Assume $200,000 @ 14%	$ 28,000	15.55	9.43	14.1
Depreciation Expense				
Buildings $130,000 @ 5%	6,500	3.61	2.19	3.3
Equipment $95,000 @ 10%	9,500	5.28	3.20	4.8
Living Allowance	12,000	6.67	4.04	6.1
	56,000	31.11	18.86	28.3
TOTAL COSTS	$197,374	$ 109.65	$ 66.47	100.0%

R. & H. Services Ltd. has reviewed these cost estimates and believes them to be realistic, with the possible exception of land costs, which they believe should be about $20,000 higher.

According to R. & H. Services Ltd., these costs would be generally similar in other regions of the Province. Building and equipment costs would be slightly higher in the Peace River area of B.C., Alberta, and Midwestern U.S. because of heating and higher insulation costs. The cost of land in these areas would be considerably lower than in the Lower Mainland.

Operating Costs

A sample budget for a 100 sow farrow to finish operation prepared by the Farm Economics Branch of the Ministry of Agriculture in January 1979 showed the following estimates of total production costs for a new hog farm in its first full year of operations, as set out in Table 2, opposite.

This budget shows that the single most important cost element in hog production is feed costs, followed by financing costs, depreciation expense, and living allowance. Together these items account for about 85% of this total cost of production.

About 60% of the total cost of production is feed costs. The main ingredient in B.C. hog feed rations is barley with soymeal, rapeseed, or meat meal added as a protein source. Corn can be substituted for barley if the cost to the B.C. grower is competitive. Presently the price is not competitive, since exchange rates on the U.S. dollar have made Iowa corn too costly to import as a substitute for Alberta barley.

Table 3

ESTIMATED FEED COSTS - JANUARY 1979
FOR A 100 SOW - FARROW TO FINISH UNIT
PRODUCING 1,800 HOGS PER ANNUM

	No. of Animals	Feed per Animal (in lbs.)	Cost of Feed (¢ per lb.)	Total Cost	Cost per Market Hog	Cost per CWT	% of Total Costs
Creep	1,900	5	16.00	$ 1,497	$ .83	$ .50	1.3%
Pre-Starter	1,900	40	8.66	6,633	3.68	2.23	5.9
Starter	1,800	96	8.66	14,968	8.32	5.04	13.3
Grower	1,800	546	7.22	70,868	39.37	23.86	62.8
Sow & Boar	109	2,300	7.53	18,821	10.46	6.34	16.7
				$112,787	$62.66	$37.97	100.0%

Analysis of the Production Cost Model

In preparing their budget model, the economists in the Farm Economics Branch have used current feed prices for creep, pre-starter, starter, and grower rations. An allowance has been made for a 5% mortality rate prior to weaning. Normal feed consumption in terms of pounds of feed consumed at each growth level has been provided for. The model assumes that pre-starter and starter feed will cost $191.00 per metric ton, and that hog grower feed will cost $159.00 per metric ton. These are the current rates in B.C. If feed costs increase above this price, it would increase the overall cost of production.

The economists calculations of the estimated cost of feed per hog and per dressed hundredweight are shown in Table 3, opposite. The table indicates that hog grower rations account for about 63% of hog feed costs. Hog starter and sow and boar feed account for a further 30% of feed costs, with creep and pre-starter accounting for the remaining 7%.

Finance costs are the next most significant cost item to a prospective grower after feed costs. In estimating these costs we have assumed a term loan of $200,000 financed at 14%. This would be half of the capital cost and start up costs of a new 100 sow operation. It is assumed that the remaining capital financing costs have been contributed by the producer's equity. The rate of 14% is based on current bank interest rates for a credit of this nature. These rates are historically high. However, they have prevailed during 1978 and 1979, and may drop only slightly in the next 1½ years.

If a different amount of financing was required, or a lower rate of interest was in effect, there would have to be an appropriate adjustment made to the calculation of finance costs.

One approximate guideline in adjusting the amount of finance costs is that every additional $20,000 of financing will increase the production cost per cwt. by

approximately $1.00. If the full capital cost of a new 100 sow farrow to finish hog farm (i.e. about $400,000) had to be financed by term loans, the cost of production in the example shown would be increased to about $75.00 per cwt. This production cost would represent the breakeven point on the farm operations. If hog prices fall below the producers breakeven point the producer will start to loose money.

With $200,000 in financing at 14%, the breakeven point on the producers operations shown would be a price of $66.47 per cwt. This is approximately the current level of hog prices in B.C. A new producer starting operations would just about break even if he had 50% equity in the business. A producer who had no debt would have a breakeven point of about $57.04 per cwt.

Depreciation expense has been provided in the model at 5% on the farm buildings and at 10% on the farm equipment based on the current replacement cost of these facilities. These depreciation rates appear realistic, and represent about 8% of total production costs. This cost would not be as significant for producers with established facilities and lower original capital costs.

A living allowance of $12,000 per annum is provided in the model to cover a base wage to the producer sufficient to cover basic living costs. This is equivalent to a wage of $5.00 - $6.00 per hour, and is reasonable in terms of today's cost of living, and family income requirements.

All other costs in the model, with the exception of breeding stock are each individually small. Together with the provision for replacement of breeding stock they represent about 15% of the total cost of production.

It takes about five to six months to raise a hog to market size, i.e. a live weight of about 200 lbs. and a dressed carcass weight after slaughter of about 165 lbs. Once they are ready for market, the hogs are sold by the producers directly to an inspected slaughterhouse or a local non-inspected abattoir.

Table 4

HOG SLAUGHTER IN B.C.[1]

(000's of hogs)

Year	Federal Inspection	Provincial Inspection	Uninspected Abattoir	Total
1967	177	13	14	204
1968	166	20	16	202
1969	136	23	21	180
1970	136	31	5	172
1971	143	36	9	188
1972	97	28	11	136
1973	78	27	11	116
1974	80	36	14	130
1975	59	36	13	108
1976	32	39	12	83

(1) Source: The Meat Processing Industry in British Columbia, Select Standing Committee on Agriculture, December 1978, Table B.2

Slaughtering and Processing Facilities

There has been a significant change in the availability and utilization of slaughtering and processing facilities within the Province over the past decade. This change has been brought about by changing economic conditions within the meat packing industry in Canada. Before the opening of the Rogers Pass section of the Trans Canada Highway in 1962, which facilitated transportation of dressed carcasses under refrigeration, it was still profitable to ship live hogs and cattle from Alberta for slaughtering in Vancouver's meat packing facilities. During the 1960's, the Alberta packers centralized their slaughtering and processing operations in Alberta. In order to rationalize processing costs and to remain competitive with the balance of the industry, most of the major packing companies closed down their Vancouver killing and processing operations in the early 1970's, with the resulting decline in slaughtering in B.C. as shown in Table 4, opposite. Now the only major processing company with hog killing facilities in B.C. is Intercontinental Packers Ltd.

The demise of the major packing houses opened up new opportunities for the provincially inspected abattoirs, as shown in Table 5. A number of private family owned businesses such as Borsato's in Langley, Lawrence Meats Ltd. in Dawson Creek, and Kohlers Ltd. in Aldergrove, have all built up their hog slaughtering facilities to over one half of the capacity of the industry, and have developed a small (about 12%) portion of the processing capacity in the B.C. pork market. These enterpreneurs have capitalized on their ability to cater to specialized markets for sausage and cured pork products and have built their businesses on sales to the delicatessen and small butcher shop trade as well as custom work which can no longer be economically served by the larger processors.

Table 5

B.C. PORK SLAUGHTERERS AND PROCESSORS

1978

Federally and Provincially Inspected

Company	Location	Function: Kill	Function: Process	Function: Wholesale	Hog Carcasses per Week: Slaughter Facilities: Current Weekly Slaughter	Hog Carcasses per Week: Slaughter Facilities: Rated Capacity	Hog Carcasses per Week: Current Weekly Sales
Borsato	Langley	*	*	*	350	600	350
Intercontinental	Vancouver	*	*	*	650	2,000	3,000
Hertel*	Port Alberni	*	*	*	140	300	140
Kohler*	Aldergrove	*	*	*	650	800	650
Lawrence	Dawson Creek	*	*	*	250	300	250
Salmon Arm Meats*	Salmon Arm	*	*	*	100	250	100
Fletchers	Vancouver		*	*	-	-	5,500
Canada Packers	Vancouver		*	*	-	-	1,800
Swifts	Richmond			*	-	-	1,000
Burns	Burnaby			*	-	-	400
Island Meat Packers*	Victoria	*			30	100	30
WEEKLY TOTALS					2,170	4,350	13,220

(1) With no change to existing facilities

(2) Includes purchases adjusted to carcass equivalents

* Operate under less than full federal inspection, thus limiting market area

Table 5 shows our estimates of the current weekly slaughter, rated capacity and current throughput of the major pork processors in B.C. These estimates have been made based upon interviews by the study team with the principals of these firms and discussions with other individuals knowledgeable about the industry. This table indicates that on the whole, the industry is operating at 50% of its one shift capacity, with Intercontinental, the largest, operating at about 1/3 capacity; and the others varying significantly:

	% Rated Capacity
Intercontinental Packers	33%
Kohler	81%
Borsato	58%
Lawrence	83%
Others	42%
Industry	50%

The current weekly sales represents the estimated total production volume of these processors from all sources. This includes the processing of hog carcasses and major cuts imported either from the Prairies or the United States. Swifts and Burns no longer do any local processing of pork, while Canada Packers carries on only limited processing operations. Fletchers Ltd. carries out about 40 percent of the pork processing operations in the province, but has no local slaughter facilities.

We estimate that of 13,220 hog carcasses per week which are handled by these processors, only 17% are supplied from the B.C. slaughtering facilities. The remaining 83% is obtained in the form of dressed carcasses or major cuts from Alberta or the U.S. Of this amount imported into B.C., about half is processed in B.C. The remaining half is wholesaled as fresh cuts:

Imports Into B.C.

(carcasses per week)

	Processed Further	Wholesaled As Fresh	Total
Processors	5,400	3,900	9,300
Wholesalers	-	1,400	1,400
	5,400	5,300	10,700

These estimates have been developed as a result of the visits of the study team to each plant, and interviews with the management of each.

The table does not include major pork cuts brought into the province for direct sale at the retail level, nor does it include processed and cured pork products imported into the province by major retailers. These imports amount to the equivalent of 4,000 to 5,000 hog carcasses per week. Thus, total B.C. demand is about 17,000 to 18,000 carcasses per week.

The largest pork processor in the Province, Fletchers Ltd., processes about 5,500 hog carcasses per week. Much of Fletchers growth has been achieved over the past five years. Partially because of an inadequate supply of hogs in B.C., Fletchers purchased a hog killing plant in Red Deer, Alberta, to supply its Vancouver plant with hog carcasses for further processing. Since then, all of its hog requirements have come from outside the Province either from Alberta or the U.S. In August of 1978, Fletchers entered into a long term contract with the Alberta Hog Market Board for the purchase of up to 300,000 hogs per annum to assure a continued supply of product for its Vancouver plant. The hogs are purchased on a formula price basis that reflects the daily Alberta and U.S. market prices.

The slaughtering industry in B.C. is made up of about 63 firms. The seven largest hog slaughtering firms are listed in Table 5, opposite page 18. There are 11 inspected plants in the Province, and 52 non-inspected abattoirs. These are listed in Appendix B, with the names of each of the inspected abattoirs and the locations of the non-inspected 52:

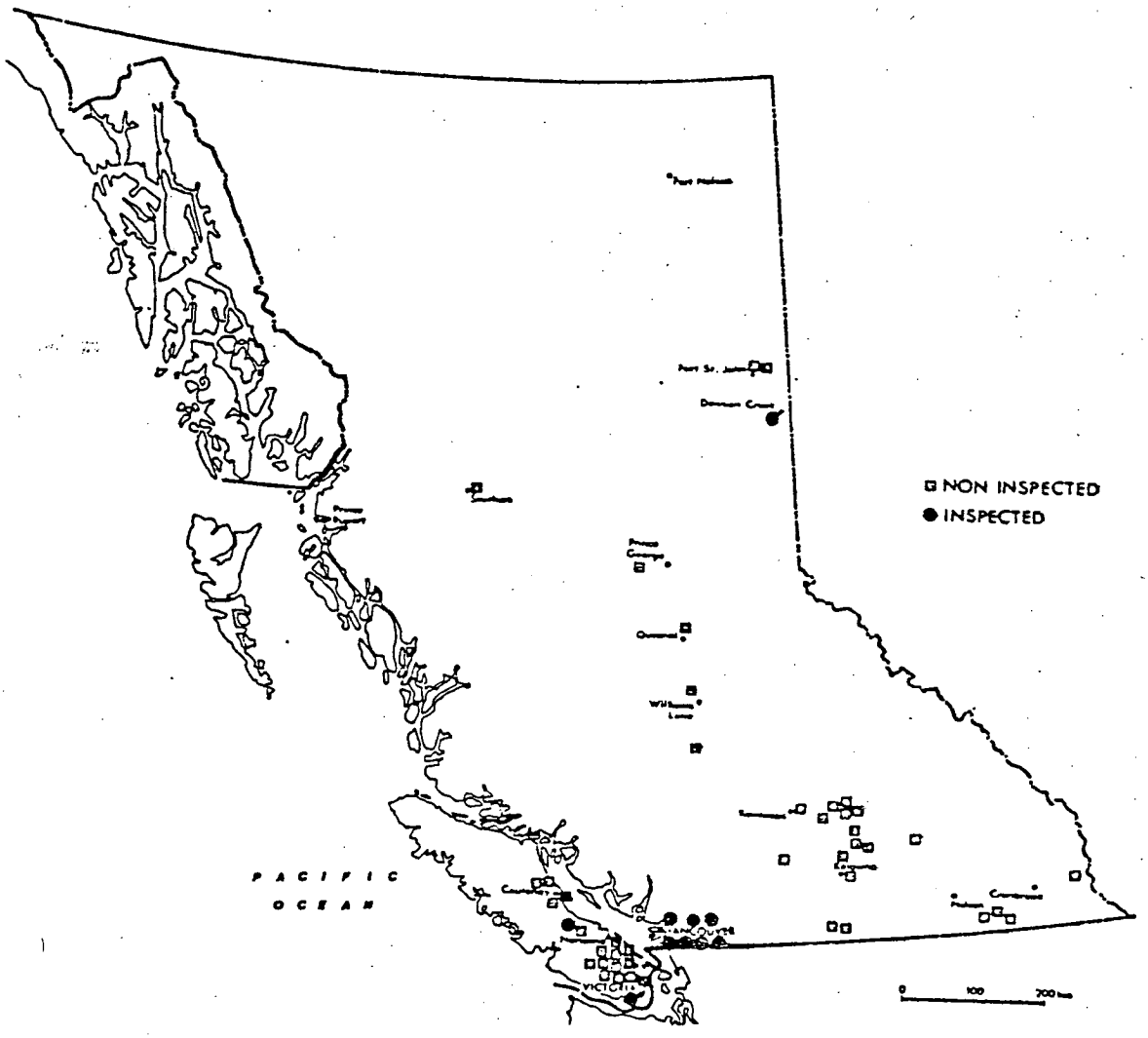
	No. of Plants
Full Federal Inspection	5
Domestic Inspection	6
Non-inspected	52
TOTAL	63

Those plants with Federal inspection are registered under the Canada Meat Inspection Act, qualifying for full Federal inspection procedures under the Health of Animals Branch of Agriculture Canada. This Branch details very specific requirements for the construction and finishing of such plants including wall and floor finishes, and the designation of stainless steel for all equipment which comes in contact with meat products. There must be a Federal Agriculture Canada Inspector in attendance during plant production.

The Province of British Columbia has undertaken to provide inspection and enforce the regulations of the Canada Meat Inspection Act in designated areas of the Province, that is, the Lower Fraser Valley and the southern tip of Vancouver Island. The abattoirs under this inspection are the seven listed in Appendix B. Actual inspection is done by federal inspectors under the federal domestic program, for which the province pays the costs.

The remaining slaughterhouses are spread throughout the Province as shown by the map on the opposite page. These abattoirs are very small in relationship to

LOCATION OF SLAUGHTERHOUSES IN BRITISH COLUMBIA



Source: "The Meat Processing Industry in British Columbia"
Select Standing Committee on Agriculture, December 1978

those listed in Table 5, and do not comprise a significant part of the volume of the B.C. industry. Consequently, they do not constitute a major market for swine producers, nor a major influence on the pricing of hogs for market.

However, they provide a service for supplying meat to the local communities. Their sales are usually made directly to residents in the area. Because the plants and their meat products are not inspected, the meat is not saleable to the chain and major independent retail stores which have a policy of handling only inspected meat. Meat which has not been federally inspected is not acceptable for trade between processing plants, and cannot be introduced into an inspected processing plant, thus further limiting the markets of these small plants.

Some specialty processors such as Vancouver Fancy Sausage Ltd., Freybe and others, use sow carcasses and trimmings in some quantity. This product is largely supplied from Alberta and would not be available in B.C. in sufficient quantity until hog production has been substantially expanded in B.C. Since this product is sold throughout Western Canada, these specialty processors could become more significant users of B.C. trimmings as the supply becomes more assured.

As part of our study, we were asked to comment on the physical plant facilities of the various processors. All the facilities of the firms listed in Table 5 were visited by the staff of Foodwest Consultants Ltd. with the exception of Salmon Arm Meats and Hertel Meats. The facilities of these processors range from nearly new to well maintained older buildings and all of the buildings were well maintained and adequately equipped for their current level of operations. All of the plants but one (which lies outside of an inspection area), are subject to regular inspection by the Health of Animals Branch of Canada Agriculture. Except for Intercontinental, all the slaughter equipment in each plant is scaled for low volume

killing operations. Although substantial increased throughput could be obtained using this equipment, it would not be as cost effective when compared with larger more efficient operations such as Intercontinental.

All of the plants are well equipped with modern machinery for processing. However, the smaller plants do not have sufficient smoking and cooking equipment to support an expansion of their operations. Most of the smaller plants not tied into municipal sewer systems are experiencing problems, in varying degrees, of meeting pollution control standards for effluent and waste with existing equipment. This will become a more significant problem as hog production increases, and could restrict a further expansion in a number of operations including Kohlers or Borsatos.

If a processing plant is not tied into a Municipal sewer system, then the plant has to deal with a large number of authorities in interpretation and administration of pollution regulations. Processing plants use large volumes of water which are not reusable under Health of Animals Regulations. The increase in hog production will increase the rate of water usage by 15 or so gallons per hog and thus increase the effluent which will require treatment, since the water cannot be recycled without treatment. As effluent, this quantity of water will require some primary treatment, even if disbursed to a septic tank in a drainage field. Some additional treatment may in future be required by Municipalities if the discharge is to be received by a Municipal sewage system.

In summary, our local inspected slaughterhouses and processing facilities are well equipped and capable of handling up to their rated slaughter capacity of 200,000 hogs per year with their current facilities. Beyond this level, however, these plants would need a substantial capital investment in equipment and in buildings. While market opportunities may occur in future to expand some plants,

such as Kohler's and Borsato's, their owners may not wish to expand their business operations beyond the level which they can finance and control.

Of the major B.C. inspected slaughterhouses, only Intercontinental has the capacity of improving its efficiency with its existing facilities through additional volume. It is presently operating at about 1/3 of rated capacity, and has the specialized equipment necessary for high-volume, high-efficiency hog killing production. In comparison, the other local inspected slaughterhouses and processing facilities are not as efficient, since their equipment is designed mainly for lower volume and for handling a mixture of animals. While additional volume will improve the operating costs of such plants, the restrictions of the equipment would preclude such plants obtaining the level of efficiency of, say, Intercontinental, or some Alberta, Ontario, or Quebec plants.

While these plants may not attain the necessary levels of efficiency, that is not to say the B.C. industry as a whole cannot be competitive for the B.C. market with the pork processing facilities located in other regions. We discuss the competitiveness of the B.C. industry separately.

Wholesale and Retail

The major importers and distributors of pork and pork products are the major meat processing companies and food wholesalers and retailers. These companies provide nearly all of the pork and pork products sold through the major food chain stores.

The major processors listed in Table 5 have developed brand names and have developed share of market positions for their cured and smoked products such as hams and bacon. It is estimated that the five major packers and processors import the equivalent of about 550,000 hog carcasses per year into B.C. for resale to the

Table 6

MAJOR DISTRIBUTORS OF PORK & PORK PRODUCTS

	Estimated Sales in Hog Carcass Equivalents per Year
Intercontinental	150,000*
Fletchers	275,000
Canada Packers	90,000
Swifts	50,000
Burns	20,000
	585,000

* includes approximately 35,000 hogs slaughtered and processed in B.C.

retail chains and independent food stores. The amounts of our estimates resulting from our interviews with each of the firms are set out in Table 6 on the opposite page. Not included in this estimate are other processed pork products imported for resale by these firms or products purchased by retailers directly from sources outside B.C. This amounts to approximately 28% - 30% of the B.C. market, a significant portion and a major opportunity in developing a longer-term strategy for the B.C. industry. Fresh pork cuts are sold, without brand name differentiation, through the major retail chain stores and butcher outlets, and amount to 35% - 40% of total pork consumption, with the remaining 60% - 65% of the market in further processed products.

The other smaller local processors market the majority (over 50%) of their product through independent retail stores and delicatessens, or through processor owned retail stores. The balance of their volume is accounted for by custom slaughtering and processing.

A significant hotel, restaurant, or institutional (food services) market for pork has not as yet been developed, either in B.C., Canada or the U.S. This limits immediate marketing opportunities but provides a challenge to the industry to improve pork consumption (50 lbs. a year) closer to that of beef (110 lbs. a year).

The B.C. retail food industry to which the processors sell their fresh pork cuts and processed meat is comprised of 1,069 major food stores with a large number, probably an additional 2,000 small minor retail stores, known in the industry as "mom and pop" stores. These smaller stores account for a very limited share of the food market and have very little volume in the sale and distribution of fresh and processed meats.

The structure of the B.C. retail food industry and the major components of that industry are set out in Table 7. Over half of the sales of

Table 7

STRUCTURE OF B.C. RETAIL FOOD INDUSTRY

	No. Stores	Estimated° Share of Market
Safeway	93	27%
SuperValu (Corporate & Independent)	86	25%
Woodward's	13	14%
Overwaitea Group	49	8%
Kelly Douglas, W.H. Malkin supplied stores (Red & White, Lucky Dollar, High-Low, Shop Easy, etc.)	139	7%
IGA	44	4%
Other Chains including - (Mac's, Federated Co-Op, Low-Cost, PayLess, Much More, 7-11, etc.)	281	15%
Independents	364	
TOTAL	1,069	100%

retail food in the Province are sold through the Safeway and SuperValu chains. Both have stores concentrated in the large urban areas and in the medium-sized towns and population centres throughout B.C. The Woodward's group is concentrated only in the urban areas, with major-sized stores. As can be seen from Table 7, each Woodward's store accounts, on average, for slightly over 1% of the B.C. market.

The buying offices for these chains are almost all located in Vancouver. The chain's purchasing decisions for major pork cuts and for processed meat (including private label brands of bacon and ham) are made weekly, through a careful comparison of pork prices at various U.S. and Canadian shipping points, as well as local Vancouver prices. The out-of-province prices are converted to a laid-down cost in Vancouver for a fully comparable price. It is important that the B.C. processors offer their products to the chains at a price which is competitive with the comparable product transported to the Vancouver distribution point.

All chains have adopted a policy of purchasing only Federally inspected meat products. Consequently, this excludes the ability of the B.C. pork industry to supply chain stores located in outlying areas of the Province from local uninspected abattoirs. The concentration of volume within the retail food industry, and the impact of this buying policy, has led to a concentration of the processing industry in the Lower Fraser Valley.

From our interviews with B.C. processors and retailers, we were able to develop accurate estimates of total product used within the province, for each of the five major pork cuts. In Table 8 we have set out the sources of these pork cuts, and their estimated usage in B.C. This Table is based upon the present B.C. local slaughtering production of approximately 2,200 hogs per week, providing 4,400 pieces per week for each of the five major cuts. The

Table 8

1978/79 ESTIMATED WEEKLY USAGE
FRESH AND FROZEN PORK

(for retail sales and further processing)
(in cut equivalents)

	Local B.C. Production	Imports into B.C. From U.S.(1)	From Alta,Sask	Together	Total Usage
Loins	4,400	10,000	15,600	25,600	30,000
Butts	4,400	1,000	17,600	18,600	23,000
Hams	4,400	600	16,000	16,600	21,000
Picnics	4,400	1,600	13,000	14,600	19,000
Bellies	4,400	2,000	16,600	18,600	23,000

Source - B.C. Retailers and Processors

(1) Some shift taking place in 1979 from the U.S. to Ontario and Quebec where surplus production is occurring.

imports from either the U.S., or from Alberta and Saskatchewan have been estimated, based upon our discussions with B.C. retailers and processors. During the latter part of 1978 and early 1979, there has been a significant (about 50%) decrease in U.S. imports. These have been replaced by purchases from Alberta in particular, and Ontario and Quebec. This shift has been caused largely by increases in production in eastern Canada, which is now surplus to their local consumption, assisted by a drop in the Canadian dollar, relative to the U.S. dollar.

The imports into the Province reflect a volume of approximately 11,000 hogs per week, in carcass equivalent. About 85% of this volume is imported by the major processors, either for resale or for further processing, with the remaining 15% directly by the retail chains and distributors.

As can be seen from the total usage of each of the five major cuts, the volumes range from a low of 19,000 picnics per week, to a high of 30,000 loins per week. This variation does not create a problem in the industry since the B.C. supply is such a small part of the B.C. needs. However, as the B.C. industry increases, the local volume will work initially to displace the imports from the U.S., then the imports from other Canadian Provinces. Once the B.C. supply becomes a significant part of the supply for B.C. processors (over 50%), then it will be necessary to develop export markets in either Canada or the Northwest U.S. in order to take the surplus volume of specific cuts.

Picnics should not be viewed as a limiting factor in the demand for pork products even though picnics presently have the lowest usage of the major cuts. Picnics are a replacement item for boneless beef in the production of sausage and cooked meats. It is expected that boneless beef will be in short supply for some time to come and therefore the demand for picnics in the meat processing industry will remain substantial as the industry can utilize surplus product, diverted from fresh or smoked picnic sales.

In order to expand the market for B.C. grown hogs, the processors would have to displace product coming onto the market first from the United States, then from Alberta and Saskatchewan. To determine the amount of product being brought in from the United States, the study team surveyed all major pork distributors and chain organizations as to the quantity and form of their U.S. purchases. The information gathered relates to average weekly purchases and was compiled in March 1978. Since the fall of 1978, however, these volumes have dropped by an estimated 45 - 55%, and have been replaced by volumes imported from Western Canada.

B.C. 1978
Pork Purchases From U.S.A. - Weekly Average

	Carcass	(pcs) Loins	(pcs) Butts	(pcs) Picnics	(pcs) Bellies	(pcs) Hams
Packers & Processors	2,500	7,700	500	700	2,000	600
Direct by Chain Stores	-	2,300	500	900	-	-
TOTALS	2,500	10,000	1,000	1,600	2,000	600

Based on this survey, we estimate that it would require 2,500 carcasses of pork each week to provide the product being shipped to the B.C. market from the U.S.A.in 1979.

Displacement of product coming into B.C. from the United States would not significantly impact Canadian producers or processors in B.C. or other provinces, and would likely be the area of initial opportunity for an increase of the market share of B.C. hog producers and processors.

Transportation

In the course of our study, we identified four areas where transportation costs could have a significant effect upon the activities of the B.C. pork industry. These costs include the movement of feed, live hogs, carcasses and cuts, into and within the Province. The producer is concerned about high feed costs and shipping costs to deliver his finished hogs to market. The most significant transportation costs for the processor are the costs of freight for the importation of either carcasses or cuts for processing, and the cost of freight in marketing cuts and further processed products.

Feed Transportation

Transportation and acquisition costs to bring feed grains into B.C. add to the producer's cost of feed. Since B.C. does not produce sufficient feed grain supplies to meet its own needs, about 90% of the feed grains being fed to B.C. hogs must come from the Prairie provinces or the corn belt of the U.S.

Feed grains are purchased by B.C. feed mills from grain brokers who arrange for the purchase of the grain from a grain elevator and its delivery to the feed mill. The transportation costs, elevator charges, and brokerage fees are paid by the feed company, absorbed into its cost structure, and passed on to the hog producer in the form of higher feed prices. About one half of the feed grain is brought in by truck from Alberta, with the rest being shipped in by rail. Importing U.S. corn is currently more expensive than importing Alberta barley and is thus not competitive.

The current cost of freight, elevator charges, and brokerage to buy a metric ton of Alberta barley and to ship it to Vancouver is shown in the table below:

Feed Purchase and Shipping Costs
per Metric Ton of Barley

(Calgary to Lower Mainland)

	Rail	Truck
Freight to Lower Mainland	$17.41	$19.17
Elevator Charges	7.30	7.30
Brokerage	2.00	2.00
TOTAL COST	$26.71	$28.47

These costs reflect the May 1979 unsubsidized transportation and purchase costs which a feed mill would have to pay to acquire a ton of barley, and have it shipped by rail or truck from Calgary to the Lower Mainland.

The elevator and brokerage charges would be the same whether the grain was shipped by rail or truck since virtually all of the grain purchased by B.C. feed mills is purchased through grain brokers.

Although rail rates are about 10% less expensive than trucking rates, only about half of the grain is brought in by rail. This is because the rail system is not considered to be reliable for dependable on time delivery. During the summer the system is overloaded in moving grain for export. Grain cars for shipping feed grains are on allocation due to an overall shortage of grain cars. Shipments for export are given a higher priority than shipments for domestic consumption. In winter, avalanches and snow conditions can also cause disruptions in rail service through the Rockies.

Because the feed mills have to rely on a constant flow of feed grains, they have placed a greater reliance on truck shipments. In future, trucking may represent an even larger share of feed grain movements between Alberta and B.C. With more material being shipped into Alberta for their economy, there should be more opportunity for a backhaul of feed grain to B.C.

Table 9

RAIL FREIGHT & FEED FREIGHT ASSISTANCE RATES IN B.C.

(per metric ton)

Shipments from Calgary to:	Freight	Feed Freight Assistance	Net Freight Cost
North Okanagan	$ 11.90	$ 6.60	$ 5.30
Lower Mainland	17.41	11.50	5.91
Vancouver Island	22.70	13.20	9.50

Since it takes about six hundred pounds of feed grain to raise a hog to market weight the unsubsidized cost of buying and transporting this grain to the Lower Mainland would work out to about $7.30 - $7.75 per hog. This cost is reduced by about $3.15 per hog (Table 9) as a result of the Feed Freight Assistance Program. The present program, administered by the Canadian Livestock Feed Board, has been in effect since 1966. The program was designed to encourage an expansion of livestock production in non feed producing regions of Canada. Funds are provided under the Program to ensure a fair equalization of feed grain prices throughout Canada. The Board used to calculate annually the minimum cost of moving grain to various locations within the country. It would then establish freight subsidies in such a manner that the net cost of transportation after allowance for the subsidy was approximately equalized in all locations. The subsidy applies to both rail and truck shipments of feed grains and is the same rate for any destination, regardless of the method of transport. In 1976 freight subsidies under the Feed Freight Assistance program were terminated in Ontario and Western Quebec and frozen at their 1976 levels in B.C.

Table 9, opposite, shows the rail shipping and feed freight assistance rates to the principle feeding areas in British Columbia as of May 1979. This table indicates that the net freight costs after feed freight assistance are fairly equal between the North Okanagan and the Lower Mainland. The net freight cost to Vancouver Island, however, is about $4.00 per metric ton higher. This difference results because the feed freight assistance subsidy to Vancouver Island has not been increased since 1976 and does not adequately take into account the jump in rail tariffs and ferry rates for shipments going to Vancouver Island as compared to those going to Vancouver. The increased freight costs between the Lower Mainland and Vancouver Island of $5.29 per metric ton are only partially reduced by an

Table 10a

B.C. FEED MILL NET FEED GRAIN ACQUISITON COST

(per metric ton)

Feed Mill Location	Net Freight Cost	Elevator Charges	Brokerage	Total Cost
North Okanagan	$ 5.30	$ 7.30	$ 2.00	$ 14.60
Lower Mainland	5.91	7.30	2.00	15.21
Vancouver Island	9.50	7.30	2.00	18.80

Table 10b

B.C. FEED MILL NET FEED GRAIN ACQUISITION COST

(per market hog)

Feed Mill Location	Net Freight Cost	Elevator Charges	Brokerage	Total Cost
North Okanagan	$ 1.45	$ 1.99	$ .55	$ 3.99
Lower Mainland	1.61	1.99	.55	4.15
Vancouver Island	2.59	1.99	.55	5.13

increase in the feed freight assistance subsidy of $1.70 per metric ton. This results in the feed mills on Vancouver Island having a higher net cost of feed. The current rail freight costs of feed before and after subsidy can also be looked at in terms of costs per hog. The table below uses the data from Table 9 to show the costs per hog based on a feed grain usage of 602 pounds of feed grain per market hog.

Rail Freight & Feed Freight Assistance in B.C.

(per market hog)

Shipments from Calgary to -	Freight	Feed Freight Assistance	Net Freight Cost
North Okanagan	$ 3.25	$ 1.80	$ 1.45
Lower Mainland	4.75	3.14	1.61
Vancouver Island	6.20	3.60	2.59

These costs do not include the feed mills acquisition costs for brokerage and elevator charges which would be constant throughout B.C. at about $9.30 per metric ton, or $2.54 per market hog. The combined net freight and acquisition costs per metric ton of grain and per hog are shown in Tables 10a and 10b, opposite.

Table 10a indicates that the net feed grain acquisition cost per metric ton ranges from $14.60 in the North Okanagan to $18.80 on Vancouver Island. On a market hog basis this cost ranges from $3.99 in the North Okanagan to $5.13 on Vancouver Island. These costs, which must be absorbed by the feed mills, have to be passed on to the hog producer in the form of higher feed prices.

Hog Transportation

Another significant transportation cost affecting the hog grower is the cost of shipping his live hogs to market. In Alberta, this cost was paid for (in part) by the processor, until May of 1978. At that time the Alberta Hog Marketing Board established a new marketing system and it was agreed that the producer would pay the entire cost of delivery of hogs to the processor's plant. The effect of this change was to increase the prices which Alberta processors were willing to pay for Alberta hogs since they no longer had to pay the transportation cost from hog assembly points to their plant. There was a shifting of costs from the Alberta processor to the producers. This change has benefited the B.C. hog producer because of the increase in the Alberta hog price. Since this price is used as a base for establishing B.C. hog prices, the net return to the B.C. producer has been increased. Now both producers in B.C. and Alberta have to pay the total cost of delivering their hogs to market. There is thus an incentive in both provinces for producers to locate new production as close as possible to slaughtering facilities to reduce their transportation costs.

The table below shows the current truck rates for delivering full truckloads (180 - 200 hogs) to Vancouver from the major producing areas in B.C.

Hog Shipping Costs
to Vancouver

Point of Shipment	Per Hog
Dawson Creek	$ 7.25
Okanagan	3.70
Fraser Valley	1.90
Vancouver Island	6.00

These rates are based on June 1, 1979 livestock hauling rates proposed for use under the B.C. Swine Producers Income Assurance Program. The rate for Dawson Creek is not included in the income assurance formula and was obtained as a separate quote. There is no regular livestock hauling service between Dawson Creek and Vancouver since there is not a sufficient volume of hogs to support such a service. Those hogs which are produced in the Peace River area are either marketed locally or shipped to Edmonton (at a cost of about $3.20 per hog) for slaughter and processing.

We looked at whether rail shipments would be a lower cost alternative than truck shipments for transporting hogs to Vancouver from Dawson Creek. We found that the rail system could not be considered a viable alternative because the cost of shipping by rail would be higher. Regulations within Canada require that livestock being transported for more than 30 hours be offloaded, fed, watered, and reloaded after a minimum six hour rest period. These regulations add greatly to the cost of transport for livestock which is in transit for more than 30 hours. Since it normally takes more than 30 hours for a train to travel from Dawson Creek to Vancouver, this method of transport would not be economic for Peace River hog producers.

In our survey of producers we found that a surcharge may be applied in the Interior when a producer, or group of producers cannot make up a full truckload of hogs for shipment to the coast. We were told that Interior producers were experiencing difficulties in co-ordinating and obtaining full loads. As a result, finished hogs are sometimes held off the market for several weeks until a full load can be assembled. This can result in heavy or overweight carcasses, as well as greater cost to the farmer in excess feed costs. As the number of full-time producers in the Interior increases, the availability and cost of hog trucking services should improve. However, co-ordination of hog shipments will still be

necessary to tie in the producer, trucker, and processor. Our recommendations include this co-ordination function.

The shipping cost per hog from Vancouver Island to Vancouver is slated to increase from $4.00 to $6.00 per hog on June 1, 1979 as a result of an increase in B.C. ferry and trucking rates. As a result, it will cost $2.30 more per hog to ship hogs from Vancouver Island to Vancouver than from the North Okanagan to Vancouver.

Carcass and Cut Transportation

The B.C. processor is also faced with transportation costs in shipping carcasses or cuts into his plant. These costs vary by source of supply, and size of shipment. The average cost for freight by refrigerated truck to Vancouver in 1978 is shown in the Table below:

	Cost per Cwt.	
Shipping Costs to Vancouver from -	Suspended Carcass	Cartonned Cuts
Calgary/Edmonton	$ 2.80	$ 2.60
Iowa	4.30	3.90

These costs are based upon rates for 40,000 pound truckloads delivered to Vancouver. The higher rates quoted are for hanging dressed carcasses, while the lower rate is for cartonned products shipped in cut form. The rates vary slightly, depending upon the size of truck used and the point of origin of the product (within Alberta or Iowa). Normally, pork imported from the United States is imported in cut form.

In addition to freight costs, there is a tariff of $0.50 per cwt. on imported fresh or frozen pork brought into Canada. Thus, all other factors being equal, our

B.C. pork processors are faced with costs of bringing carcasses and pork cuts into the B.C. market of between 2.6¢ and 4.5¢ per pound of dressed meat. On a live weight basis, assuming that approximately 60% of the market weight is sold as cuts, our processors should be prepared to pay a premium of 1.6¢ to 2.7¢ over the Alberta hog price for B.C. grown hogs.

Product Transportation

If B.C. pork processors had surplus product and wished to market into other provinces or the United States they would have to consider the cost of freight transportation. However, since B.C. is in a deficient hog growing area, we export very little pork. Most sales of B.C. pork outside the province are in the form of sausage, bacon, and other finished products. These products are marketed by Fletchers Fine Foods Ltd., Intercontinental Packers Ltd. and specialty firms such as Vancouver Fancy Meats Co. Ltd. In total, these sales would amount to the equivalent of about 1,000 to 1,500 hog carcasses per week, most of which represents some Fletchers product being processed in B.C. and sold in Alberta.

The freight rates from Vancouver to Edmonton or Calgary by refrigerated truck would be about the same as the rates from Edmonton or Calgary to Vancouver, i.e. about $2.60 per cwt. for a 40,000 lb. truckload.

Market Stream

The flow of pork to the B.C. market has had a changing pattern over the past few years. Consumption levels have changed only slightly since 1972, but there has been a steady shift in the source of pork away from Alberta and local slaughter to greater imports from the U.S.A. up until 1978, when U.S. imports dropped off:

B.C. Pork Sources

(millions of pounds of carcass equivalent)

	B.C. Slaughter	Alberta & other Provinces	U.S.A.	Total B.C. Utilization
1972	19.6	112.6	4.5	136.7
1973	16.4	108.1	8.0	132.5
1974	18.1	108.0	14.9	141.0
1975	15.4	87.4	21.0	123.8
1976	11.1	87.4	32.5	131.0
1977	15.3	75.5	41.2	132.0
1978 (est)	18.6	94.2	28.2	141.0

(1) Source: Agricultural Canada - Production & Marketing Branch Annual Review

As part of the study team's interviews with B.C. pork processors and retailers, and from information contained in the B.C. External Trade Review, we were able to determine a further breakdown of B.C.'s 1977 and 1978 pork supply.

B.C. Sources of Pork Consumption

(fresh and further processed sales)

	1977		1978 (est).	
Source (of hogs or cuts)	Millions Pounds	%	Millions Pounds	%
B.C.	15.3	11.6	18.6	13.2
Alberta & Other Provinces*	50.7	38.4	63.3	44.9
U.S.A.	41.2	31.2	28.2	20.0
Total Fresh or Processed Locally	107.2	81.2	110.1	78.1
Further Processed Product from Other Provinces	24.8	18.8	30.9	21.9
Total B.C. Consumption	132.0	100.0	141.0	100.0

* 1978 includes significant shipments from Ontario and Quebec.

Pork Imports to British Columbia - 1978

Imports to B.C. from the U.S.A. dropped in 1978 from 1977 by 13 million pounds in carcass equivalent. This represents a drop of 31.6%. The total imports of pork products into all provinces of Canada dropped 43% during this same period. This decrease, however, was taken up by imports from other Canadian provinces which increased in 1978 by 18.7 million pounds, or 25%. In mid 1978, Fletchers shifted the purchases of about 2,500 carcasses per week from the U.S. to Alberta, when it entered into a long term contract with the Alberta Hog Marketing Board for the purchase of up to 300,000 hogs per annum. This resulted in a shift in 1978 of about 8 million pounds of purchases from the U.S. to Alberta. Canada Packers has also shifted some of its purchases from the U.S.A. to Alberta, Ontario and Quebec. Retailers who have been buying fresh pork from the U.S.A. have curtailed their purchases to supply of advertised features only, even though there is still some price advantage in importing U.S. pork. The U.S. product is not usually as well trimmed and often contains more fat. The chains have decided that during the current period of high meat prices, they wish to maintain a quality image with leaner product on regularly priced merchandise.

There is still a significant volume of U.S. imports which can be displaced by B.C. production. Because of the distances, displacement of the Ontario and Quebec product is not expected to be more difficult than displacing U.S. shipments. Displacement of Alberta product, however, will be more difficult.

In addition to the change in flow of pork to the B.C. market, the methods by which the product reaches the consumer must be understood. Most fresh pork is purchased from retail stores and eaten at home. A small portion of total pork consumption is eaten away from home, largely in processed form such as ham, bacon or weiners. Fresh pork is not a major regular menu item in most restaurants

or fast-food outlets. An experiment is presently under way in Ontario by the Pork Producers Marketing Board to establish a fast food outlet with menu items developed around pork. If this venture is successful it could increase the demand for pork products in the restaurant trade throughout Canada. Some success in this area would provide a great assist in the development of markets for pork products, and thus enhance the development of the entire pork industry.

The normal channels of distribution for pork products moving to the major retail store outlets are either directly from the processor to the retailer or alternatively from the processor to a distribution or delivery centre owned by a retail chain.

Approximately 27% of pork products move to the market place through the Safeway centralized distribution system and a further 9 - 10% through the Overwaitea and Federated Co-Op delivery centres. The other 63% goes directly to retail outlets from the processor. Those retail chains without central handling facilities try to control the number of deliveries per store by buying from suppliers with a sufficient product line to supply all items. A distribution centre provides much the same function as a wholesaler in that it buys in bulk and distributes its product according to the orders of individual stores. Only Canada Safeway operates a complete meat distribution warehouse in B.C. Kelly Douglas operates a beef processing plant in North Vancouver which is operated in a limited way as a distribution centre but the majority of their stores receive meat products directly from the processors. Delivery centres are simply transfer points where all store orders are amalgamated for delivery. Delivery centres for meat products are operated by Overwaitea Stores and Federated Co-Operatives.

Those chain stores not operating distribution or delivery centres still co-ordinate buying activities for their retail stores. The buying pressures exerted by

Table 11

COMPARISON OF HOG MARKET PRICES[1] [2]
JANUARY 1 - SEPTEMBER 24, 1977

Market	Average Price per CWT for Total Period	Average Daily Range in Price For Period	Maximum Range for a Single Day
Toronto	$60.79	$ .86	$ 5.80
Winnipeg	55.95	.48	4.75
Saskatoon	56.16	.44	4.05
Edmonton	56.74	1.90	8.85
Omaha	56.58	.42	1.50
Sioux City	56.38	.38	.75
St. Paul	55.84	.47	1.00

(1) Source: The Competitive Position of the Canadian Pork Industry, Howard Fredeen, Appendix E, p.3-4

(2) U.S. live weight hog prices have been converted to a dressed carcass basis and adjusted for daily exchange rates.

the major chain stores require the processors to offer their product at competitive prices. Thus the processors must be constantly alert to the selling prices of major cuts in both Alberta and the mid-western United States if they are to stay competitive and on top of this market.

Hog Prices

Hog prices are established on a daily basis in each hog market region throughout North America. Prices paid by slaughterhouses depend upon the supply of hogs offered for slaughter and the current level of retail consumer demand. Prices in Canada are usually established by some form of auction system operated by the producer hog marketing boards. In the U.S. prices are established either by an auction or an offering system. An offering system exists where a slaughterhouse establishes a price which it is willing to pay for hogs that day and purchases all hogs which are offered to it at that price. This system is followed in many areas in the United States including the mid-west, and is also followed in Quebec and B.C.

Where an auction market system exists either in Canadá or the United States hog prices may vary during the day as each lot comes up for bid. Usually these price fluctuations are small although occasionally they can vary by as much as $4.00 to $5.00 or more per cwt. in a single day's trading. While prices do vary between one market region and another (because of local hog supply and demand conditions) the variance between regions does not often exceed 5%.

Table 11, opposite, shows a comparison of daily hog prices at several markets in Canada and the U.S. over the first 38 weeks of 1977. It demonstrates the close price relationship which exists among the various market centres. The Edmonton, Alberta price was the highest of the Western Canadian and U.S. prices

and showed the greatest variability in terms of daily price ranges. Despite this price variability, the Edmonton price was within 2% of the average price in each of the Western Canadian and U.S. hog market centres over the 38 week period of the study.

Since Alberta hog prices have been used by B.C. processors as a basis for setting B.C. offering prices, it is important to understand how well the Alberta prices compare with other markets. Several recent studies were done to address this question. The Harries Report commissioned by the Alberta Minister of Agriculture reported on price relationships in the Alberta hog market and Dr. H. Fredeen reported on the competitiveness of the Alberta and Canadian pork industry.

Both studies recognized that traditional price relationships between Alberta and Toronto had broken down because Eastern Canada is now self sufficient in pork and is no longer a regular market for surplus Alberta production. The main market setting pressure is now from the U.S.A.

The Harries report had used Omaha and Sioux City terminal market prices to compare the laid down cost of U.S. pork to the Alberta and B.C. markets. Based on this data, Harries had concluded that the Alberta market for the period 1974 through 1977 had only occasionally reflected the U.S. equivalent. During the study team's visit to Iowa, it was determined that the real cost of hogs to a U.S. exporting plant from the Iowa/Minnesota region was actually $1.00 to $1.75 per cwt. less than the Omaha and Sioux City market prices. These latter prices reflect spot market prices paid by small processors for their requirements and are higher than the prices normally paid by the larger processors who have their own supply network. After adjusting the U.S. prices used by Harries downwards by a $1.25 per cwt. live weight, we found that the Alberta market price was within a 5% range of

its U.S. equivalent during all but five months within the forty-four month period studied by Harries (January 1974 to August 1977).

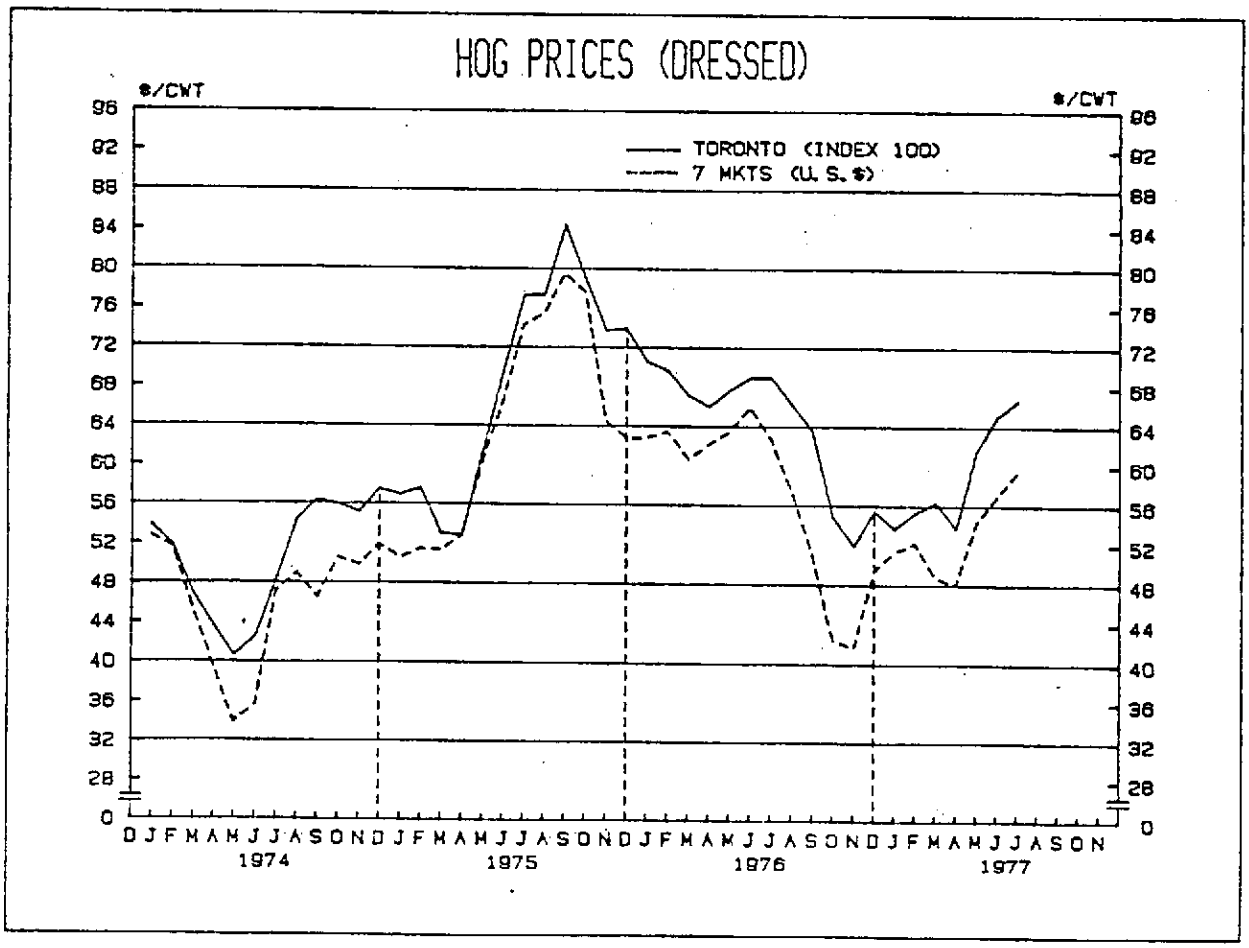
Thus, it would seem that the Alberta price has been closely comparable to equivalent U.S. wholesale pork prices over this period after adjusting for freight, exchange, and duty. As long as this holds true, B.C. pork producers can continue to rely on the Alberta market price as being a fair reflection of current North American hog prices.

B.C. Price History

The price history in B.C. has been based on a processor offering price system with prices tied to the Alberta hog market price. The offering prices have been partially a reflection of the competitiveness of the market and partially a reflection of the processor's own demand for hogs.

A hog marketing system has not yet developed because of the limited supply of hogs coming to market on a weekly basis and the small number of slaughterers who are available to bid for hogs. All hogs now being marketed are sold by the producers directly to the slaughters.

Until mid 1977, the price paid for B.C. hogs was $3.00 per cwt. over the Alberta average weekly price. With the temporary closure of the Intercontinental Packers Ltd. plant, prices fell to, or below, the Alberta average since the other local hog killing plants were not able to handle all of the available hog kill. When the Intercontinental plant reopened in November of 1977, it did so on the basis of an informal understanding with the B.C. Swine Breeders Association. The Association agreed to assure Intercontinental that there would be at least 600 hogs per week delivered to their plant for killing, and the company agreed to operate its hog killing facilities as long as the hogs were made available. It was agreed that


HOG PRICES (DRESSED)
$/CWT
$/CWT
TORONTO (INDEX 100)
7 MKTS (U.S.$)
96
92
88
84
80
76
72
68
64
60
56
52
48
44
40
36
32
28
0
D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N
1974
1975
1976
1977

Intercontinental would pay the Alberta price for the hogs and that it would pay a premium of 50¢ per cwt. if the number of hogs delivered to them in a week exceed 900.

The B.C. Swine Breeders Association had to rely on moral suasion to ensure that its members would provide sufficient hogs to the Intercontinental plant to justify its continued operation. We understand that the smaller processors started to offer hog growers additional price incentives of $.50 to $1.00 per cwt. to deliver hogs to their plants. Currently prices have worked their way back to a premium of $2.25 to $2.50 per cwt. over the Alberta price. The current price premium is at least equal to the current cost of shipping in pork cuts from Alberta. This reflects the development of a more favourable market price position for B.C. hogs.

Hog Price Cycle

B.C. hog prices have kept very closely in line with Alberta and other hog market prices, but the general level of hog prices has shown a tendency to fluctuate considerably over time. The chart on the opposite page shows the price fluctuation of hog prices in dollars per cwt. over the period from January 1, 1974 to November 1977.

The chart illustrates the range of prices realized during each year and also the general similar trend of Canadian and U.S. hog prices. The U.S. prices shown are in U.S. dollars and have not been adjusted for exchange rate differences. In the 18 month period from May 1974 to September 1975 Toronto hog prices doubled, rising from a low of $41.00 per cwt. to a high of $83.00 per cwt. Thereafter, they declined steadily to a low of $52.00 per cwt. in November 1976, before rising again to the $65.00 per cwt. level in late 1977.

Table 12

AVERAGE MONTHLY EDMONTON HOG PRICES PER CWT. JAN 1, 1974 - DEC 31, 1978

		1974	1975	1976	1977	1978
Jan		$48.86	$52.79	$69.60	$49.80	$60.72
Feb		47.44	53.95	70.17	54.99	68.96
Mar		43.64	49.22	67.22	55.26	65.24
Apr		38.45	51.10	63.26	49.13	63.81
May		36.22	59.37	64.26	57.23	69.66
June		35.67	65.33	64.48	60.42	68.43
July		40.37	73.40	63.20	62.19	63.47
Aug		47.41	74.91	60.39	59.61	65.37
Sept		53.52	82.35	58.77	59.69	74.06
Oct		52.35	77.15	50.23	58.55	77.53
Nov		50.07	70.37	44.75	58.12	77.53
Dec		53.13	70.41	50.69	61.32	76.34
Average		$45.59	$65.03	$60.59	$57.45	$67.51
Range:	High -	$53.52	$82.35	$70.17	$62.19	$77.53
	Low -	$35.67	$49.22	$44.75	$49.80	$60.72

(1) Source: Price Relationships in the Alberta Hog Market, Hu Harries & Associates Ltd., October 1977, Table 5, p.20.

(2) 1978 Annual Report - Livestock Division - Food Production and Marketing Branch, Agriculture Canada, Vancouver B.C., p.4.

The Edmonton prices which are not shown on the chart are generally about $4.75 per cwt. below the Toronto price. (Fredeen, op.cit., Appendix Ep.) Table 12 shows the average monthly hog prices in effect during this period.

The price fluctuations during this five year period have resulted in producers showing good profits in some months and large losses in other months when revenues fell below the breakeven point. For a full time producer with continuous hog production the average price during the year is the best basis for forecasting the profitability of a producers operations.

The long term trend in hog prices has been for prices to increase over time to reflect the increased cost of hog production. However, the price changes in any one year may not keep pace with increases in the cost of production and if an oversupply of hogs exists, prices may actually decline. These trends are shown in the table below. In 1971 which was a year of North American over-production, hog prices fell 25%, recovering in 1972 to a little over their 1970 level.

Approximate Average Prices [1]
for Hogs in Edmonton per CWT - 1970/1978

1970	$ 28.40
1971	21.25
1972	32.01
1973	49.92
1974	45.59
1975	65.03
1976	60.59
1977	57.45
1978	67.51

[1] H. Fredeen, op.cit., Appendix E, Table E, (1970-1973 data)

From 1970 to 1977 hog prices in Edmonton increased by about 102%, from $28.40 to $57.45 per cwt. During this same period farming costs increased by between 100% to 110%, with feed costs increasing by 105% and other important input costs increasing from 87% to 131%.

Farm Input Price Indexes (1961 = 100) Costs [1]

	Land & Buildings	Mortgage Credit	Labour	Feed
1970	151.4	202.8	167.8	107.6
1977 (1st qtr.)	283.4	469.3	381.8	220.5
Percentage Increase	87.2%	131.4%	127.5%	104.9%

Source: Statistics Canada, 62-004

It appears that hog producers' incomes did not keep pace with increases in the cost of production during this period except for the years 1973, 1975, and 1976. With the increased average price realization in 1978 to $67.51 per cwt., producers' incomes will have again caught up with the increased cost of production.

The outlook for 1979 on a North American basis suggests that there may be a repetition of the 1971 experience. With producers indicating their intentions to expand hog production on a national basis by between 15% to 20% it is likely that hog prices will fall below the cost of production, as they did in 1971. Current May 1979 hog prices in Edmonton are about $62.00 per cwt. down from $76.00 per cwt. in December 1978. If prices fall much below this level, it is likely that producers will cut back on their planned increases in hog production.

Wholesale Prices of Pork Cuts

Another area where price is important is in the sale and purchasing of pork cuts. At one time, retailers were prepared to pay a considerable premium for fresh local pork because of its freshness which assured maximum shelf life.

An examination of wholesale prices of fresh and frozen pork cuts on the Vancouver market shows a declining spread between Canadian and U.S. pork. The

wide advantage previously held by local fresh pork no longer exists. Pork loins, for example, carried a local preference of up to 28¢ per lb. in mid 1977, but this has declined to between 10¢ and 15¢ in recent months with the gap narrowing to 4¢ at one point. U.S. exporting plants have made some cutting and trimming adjustments to make their product more acceptable to Canadian buyers but is generally conceded by the local chain buyers that significant quality differences still exist. The narrowing spread has primarily been caused by the leverage this imported product gives a local buyer which he uses on local sellers. The fact that this product moves in readily and is accessible through a now well-established marketing mechanism makes this leverage possible. When local production rises to the level that it displaces the major portion of the U.S. trade, the spread may widen again. Because the U.S. processors are not aggressively seeking the Canadian market but rather are sought out by Canadian buyers, and because there is not present surplus production in the U.S., the displacement of this traffic will not be too difficult. There will be pressure on prices by local buyers, however, until significant displacement occurs.

Regardless of the volume moving across the border at any time, the easy access of the local chains to the U.S. market means that prices in other market areas will have a considerable influence on the price of fresh pork cuts in the B.C. market.

Table 13

AVERAGE WEEKLY SLAUGHTER OF HOGS AT INSPECTED SLAUGHTER ESTABLISHMENTS IN CANADA (1)

(in 000's)

	Alta	Sask	Man	Ont	Que	Total West	Overall Total
1958	26.0	7.7	16.4	35.8	19.6	50.1	105.5
1959	32.4	10.5	16.4	50.9	26.0	59.3	136.2
1960	25.7	7.8	14.7	41.6	19.2	48.2	109.0
1961	24.0	8.7	14.6	38.4	18.2	47.3	103.9
1962	26.0	7.2	13.1	42.1	20.7	46.3	108.2
1963	21.9	6.8	11.2	45.9	22.9	39.9	108.7
1964	26.6	6.8	14.4	49.3	23.3	47.8	120.4
1965	27.5	7.1	14.2	46.9	20.1	48.8	115.8
1966	23.0	6.8	13.6	46.9	19.8	43.4	110.1
1967	27.1	8.9	17.2	52.7	26.4	53.2	132.3
1968	29.6	9.0	17.1	50.7	27.3	55.7	133.7
1969	24.4	9.2	16.9	47.1	28.1	50.5	125.7
1970	29.1	13.8	23.3	52.4	31.4	66.2	150.0
1971	37.9	18.4	29.9	56.7	34.6	86.2	177.5
1972	36.0	18.8	23.8	53.6	39.0	78.6	171.2
1973	33.9	18.3	23.7	49.3	35.0	75.9	160.2
1974	30.7	18.6	23.0	51.5	40.6	72.3	164.4
1975	23.7	11.5	16.6	46.2	42.4	51.8	140.4
1976	20.9	10.4	15.3	46.4	44.9	46.6	137.9
1977(2)	22.5	10.3	16.2	50.5	50.1	49.0	149.6
1978(2)	22.7	10.7	16.2	58.2	58.6	49.6	166.4

(1) Fredeen, op.cit., Appendix D, Table P10.

(2) Agriculture Canada - Annual Livestock Review

II. TRENDS AND DEVELOPMENTS IN THE INDUSTRY

There have been a number of developments in Canada during the 1970's which we believe are significant to the future of the B.C. pork industry.

These developments include:

1) A decline in hog production in the major producing regions in Western Canada.

2) A trend to consolidation of the industry and increases in the size of hog farms.

3) A trend to higher cost to establish a hog farm with the introduction of more intensive, continuing farrowing operations and specialized farm management.

4) A trend to improved hog quality, in terms of hog carcass index.

5) An increased public emphasis on environmental controls in terms of odours, manure handling, and waste disposal systems.

6) Changes in the handling of feed sales, feed pricing, and feed freight assistance.

7) A trend to continued increases in hog production costs.

8) A reduction in hog slaughtering and processing facilities in Western Canada and an expansion of slaughtering and processing facilities in Eastern Canada and in particular in Quebec.

9) A realignment of marketing patterns in Western Canada for live hogs and pork products.

10) Changes in Canada's balance of trade in pork and pork products.

Each of these developments has had an impact upon the industry and each is discussed in this report.

Decline in Western Hog Production

Table 13 shows the average weekly slaughter of hogs in Western Canada, Ontario and Quebec over the last twenty years. The table indicates that Canadian

Table 14

COMPARISON OF 1971 AND 1978 HOG PRODUCTION

(000's of hogs)

	B.C.	Alta	Sask	Man	Total West	Ont	Que	Atl.	Total Canada
1971	71	2015	1246	1331	4663	3136	1927	365	10,091
1978	97	1179	557	843	2676	3026	3045	338	9,085
Change Increase (Decrease) (000's of hogs)	26	(836)	(689)	(488)	(1987)	(110)	1118	(27)	(1,006)
Percentage of Change from 1971	35%	(41%)	(55%)	(37%)	(43%)	(4%)	58%	(7%)	(10%)

(1) Source: Annual Livestock Report, Livestock and Animal Product Section, Agriculture Division, Statistics Canada

graded hog slaughter reached an all time high in 1971 when the total Canadian kill reached 10.1 million head. The previous record high was 8.9 million head in 1944. Production in 1978 rose to 9.1 million head and the outlook for 1979 suggests an increase to a record high of about 10.4 million head.

During the past thirty-five years, there has been a very significant shift in Canadian hog production from Western to Eastern Canada.

Percentage of Total Canadian Hog Slaughter Originating in Western Canada	
1944	65%
1958	47%
1971	46%
1978	29%

The shift has been the most dramatic in the past seven years from 1971 to 1978. Hog production in the prairie provinces declined by 43% from about 4.6 million head in 1971 to 2.6 million in 1978. Much of this lost production has been taken up by Quebec which has increased its hog kill by 58% from 1.9 million hogs in 1971 to 3.0 million hogs in 1978. Both Ontario and Quebec now produce more hogs than all three prairie provinces combined (see Table 14).

The decline in Western hog production had a number of consequences for the pork industry in Western Canada. These were:

1) A loss of a good portion of the Eastern Canadian pork market to Ontario and Quebec processors.

2) A loss of a portion of the B.C. pork market to U.S. processors up until 1978 when the decline in the Canadian dollar started to make U.S. pork less competitive.

3) A series of processing plant closures in Saskatchewan, Manitoba, and Alberta due to operating losses and an inability to obtain sufficient hogs.

4) A shift in pork trading patterns. Western Canadian processors shifted from a surplus to a deficit position in pork production and became net importers of U.S. pork.

5) Increasingly tense relationships between the producer marketing boards and the processors in Western Canada.

The consequences of this decline for the Eastern pork industry were:

1) The processing industry in Quebec was able to build a number of new specialized hog killing plants which were more modern than any in Western Canada.

2) Both the processors in Quebec and Ontario were able to solidify their market position in their respective markets making it more difficult for Western processors to re-establish themselves in these markets.

3) The hog industry in Quebec had an opportunity to expand rapidly to fill a production void that was no longer being filled from the West.

The decline in Western Canadian hog production took place most notably in 1975, a year after hog prices had declined sharply in 1974.

A good portion of the decline can be explained by the fact that some western grain farmers have always viewed hog production as a mechanism for marketing feed grain. If feed could not be sold for cash, or an adequate cash consideration, it could always be fed to hogs. The introduction of the new Feed Grains Policy in August of 1974 helped give domestic feed mills throughout Canada direct access to Prairie feed grain supplies. This policy and a decrease in prairie barley production resulted in an increase in prairie barley feed prices of 70% to 75% in 1974. (Fredeen, op.cit. Tables C2.2, F5). This price increase resulted in it being as profitable for the Western grain farmer to sell his feed grain for cash rather than feeding it to hogs and taking the risk of a decline in hog prices. Thus, total western hog production fell by 28% in 1975 from 3.8 to 2.8 million hogs.

Even though hog prices recovered in 1975, prairie hog production didn't increase because the cash selling price of barley, the main hog feed ingredient, remained high. This jump in barley prices is shown in Table 20a, opposite page 61.

Table 15

TRENDS IN AVERAGE SIZE OF HOG FARM UNITS[1]
1966 - 1976

No.of Farms Reporting Hogs (000's)	B.C.	Alta	Sask	Man	Ont	Que	N.S.
1966	2.2	28.5	27.0	16.0	41.8	30.7	2.1
1971	2.7	26.2	26.1	14.2	30.6	17.4	1.3
1976	1.4	12.2	12.1	5.9	17.4	8.4	.6
1976 as a % of 1966	63%	43%	45%	37%	42%	27%	29%
Average No. of Hogs Marketed per Farm							
1966	15	47	17	37	62	52	37
1971	30	77	48	94	102	111	94
1976	46	89	44	139	146	279	177

(1) Source: Fredeen, op.cit., Appendix C, Table C5.

Consolidation of the Industry

Fredeen, in his report on the Competitive Position of the Canadian Pork Industry, noted that there has been a trend throughout Canada to an increased hog farm unit size. From 1966 to 1976, the number of hog producers in Canada declined by 61% while production increased by 12%. Production per unit increased by 537% in Quebec, 235% in Ontario, and 189% in Alberta.

Fredeen also noted that "since 1971, the reduction in the number of hog enterprises has progressed at approximately the same speed in all provinces, with no apparent differences associated with the presence or absence of marketing boards. Table 15 shows the decline in the number of farms reporting hogs between 1966 - 1976, and the average number of hogs marketed per farm. These figures include farms raising pigs for their own consumption and thus tend to overstate the number of farms engaged in commercial hog production. The average number of pigs marketed per farm is likewise understated, but the trends are clear.

A primary cause of the faster consolidation of hog production in Ontario and Quebec has been the increase in hog contracting operations. From 1971 to 1976 the number of "contract" producers in Ontario increased from 2.6% to 4.1% of all producers and their market share from 8.1% to 13.3% of Ontario production. In Quebec, contract operations now account for about 65% of all hog production.

Much of this consolidation has come about because of the economic benefits associated with an increased scale of operations such as lower capital costs per pig and better labour utilization.

Nova Scotia, which produces about the same number of hogs as B.C., has shown the same national trend in terms of a decline in farm numbers and an increase in unit size of production as indicated in Table 16. In 1971, the 68 largest producers each raised more than 500 hogs per year and produced 68% of the

Table 16

TRENDS IN HOG UNIT SIZE IN NOVA SCOTIA 1971 - 1976 (1)

No. of Hogs Marketed	1971 Producers	1971 % of Producers	1971 % of Hogs Marketed	1976 Producers	1976 % of Producers	1976 % of Hogs Marketed
1 - 50	776	76	7	397	73	3
51 - 200	112	11	10	49	10	5
201 - 500	59	6	15	27	5	8
501 - 1,000	40	4	23	31	6	21
1,000+	28	3	45	30	6	63
	1015	100%	100%	534	100%	100%

(1) Source: Fredeen, op.cit., Appendix C, Table C7.

province's hog production. By 1976, 61 producers were raising 84% of the province's hog production. This trend is very similar to that of the B.C. industry.

The trends in Nova Scotia also indicate that by 1976 the 83% of hog producers who produced less than 200 hogs per annum were only contributing 8% of the province's hog production of 107,000 hogs.

The significance of this trend is that the larger producers who are more highly capitalized and have greater farming experience are becoming more dominant in hog production, not only in Nova Scotia but all across Canada.

Higher Industry Capitalization

Another factor affecting the industry has been the trend towards higher capitalization and the use of specialized facilities for hog production. Improved methods of production such as specialized barns for farrowing, weaning, growing and finishing have been adopted over the past seven years. The move to intensive continuing farrowing operations instead of the traditional spring and fall farrowing requires better health control and greater mechanization of feed and manure handling.

The trend in production facilities is to greater mechanization with total confinement buildings. These buildings are usually heated, insulated and ventilated with specific zone control within the buildings to maintain optimum temperatures for the size of pig and stage of growth in any one zone. Each of the various stages of hog growth have very specific heating and ventilation requirements for optimum production, health, and feed conversion.

Statistics Canada computes farm input price indexes for the capital and operating costs of farm units in Western and Eastern Canada. According to their statistics the capital cost of a new farm increased by about 90% to 100% in the

Table 17

COST OF FARROW TO FINISH HOG OPERATIONS IN ALBERTA, 1972 (1)

	Small	Medium	Large
Farm Size Range (No. Sows)	12 - 36	40 - 80	90 - 200
No. of Farms in Sample	12	13	7
Average No. of Sows	23.3	56.3	128.4
Farrowings/Sow/Year	1.8	1.8	1.9
Pigs Weaned/Sow/Year	13.6	15.1	15.3
Weaning Age (weeks)	6.0	5.8	4.6
Weaning Weight (lbs)	28.1	25.4	16.4
Mortality -			
Pre-weaning	28.1	18.1	20.1
Feed lot	3.4	1.6	1.1
Feed/Sow/Day -			
Gestation	8.3	7.0	5.4
Lactation	11.1	9.3	10.3
Average Carcass Weight	164.2	163.4	162.4
Feed Conversion (all feed) liveweight	5.3	4.7	4.5
% Carcasses Above 100 Index	58.8	66.0	71.3
Investment per cwt. Production (as a % of costs for large unit)	142.0%	148.0%	100.0%
Labour Hours per cwt. Produced	2.6	1.8	1.1
Total Cash and Non-cash Costs per cwt Produced (as a % of costs for large unit)	117.0%	114.0%	100.0%

(1) Fredeen, op.cit. Appendix C, Table C4.

seven year period from 1970 to 1976. Continued inflation in Canada since then has likely increased capital costs by a further 25% to 30%.

Since not only higher capital costs are involved as a result of inflation but also additional costs as a result of constructing more specialized buildings, it is likely that total costs to establish a new hog production unit have increased by about 150% to 175% since 1970.

While larger production units have a greater total capital investment, it is possible to obtain somewhat lower capital costs and labour costs per hog by increasing the size of the production unit.

Farm management plays an important role in determining reproductive performance and piglet survival. Fredeen indicates that management tends to improve as the size of unit increases. He indicates that specialist producers apply greater control over sow feed costs by restricted feeding, have better health control resulting in lower hog mortality, and by combining management and genetics these producers achieve better feed conversion and higher carcass grades. The net result is that larger producers have lower capital costs and labour costs per hog than smaller producers and hence greater potential for reasonable returns than non-specialized units.

These observations are supported by an Alberta study carried out in 1972 on the cost of production for small, medium and large size farrow to finish operations in Alberta. While the cost figures are now out of date, the operational data is still indicative of the greater efficiency of the larger production unit. This data is shown in Table 17.

The table shows that the larger hog farms had a superior operating performance in almost all areas of hog production. They had the highest number of pigs weaned per sow per year, the fastest weaning age, and a relatively low level of

mortality. The overall feed conversion ratio was the best on the largest farms and feed consumption per sow per day was the lowest. The largest farms had the best ratio of carcass index above 100 and the lowest capital and labour investment per hog. Overall production costs of the large units were 14% less than the medium size and 17% less than the costs experienced by the smaller units.

Healthy, fast-growing hogs can be reared to market weight in 150 to 180 days. By culling his breeding stock, maintaining balanced rations, and a conducive growing environment, a producer can reduce by about 10% the time taken to raise a hog to market weight. When combined with proper feed control it is possible to reduce feed requirements by as much as 15% or $5.00 to $6.00 per hog. Other production costs can also be reduced by about 15%.

These cost savings are usually achieved only in the larger full-time hog operations where the producers have adequate hog farm management experience. Again, this experience is clear from the 1972 Alberta study.

Hog Quality

In 1968, the grading system of Canadian hogs was changed to an indexing procedure based on the potential yield of trimmed retail product. Index 100 represented the average hog carcass and, since pricing was based on index, the system provided an economic incentive for carcass improvement.

Hogs are normally graded from 88 to 112 carcass index with the majority of carcasses falling in the range of 97 - 107 on the index scale. The carcasses are graded after slaughter and the producer is paid on the basis of the index. Since all prices which are quoted or bid are based on a 100 index, the actual price received by the producer will be the graded hog carcass index times the producer price.

Table 18

PERCENTAGE OF HOGS GRADING OVER 100[1]

1969	48.2
1970	50.4
1971	54.0
1972	55.3
1973	55.1
1974	60.0
1975	63.5
1976	65.5
1977	66.7

(1) Source: Fredeen, op.cit. Appendix C, Table C14

Table 18a

PROVINCIAL TRENDS IN CARCASS INDEX 1973 - 1977
PERCENTAGE OF GRADED CARCASSES INDEXING OVER 100

	B.C.	Alta	Sask	Man	Ont	Que	N.S.
1973	68.8	58.1	54.7	47.2	53.8	56.0	79.0
1974	75.4	64.3	57.8	54.7	59.8	58.8	80.3
1975	78.0	64.0	63.8	57.8	63.7	62.6	82.3
1976	76.0	67.7	67.4	60.8	64.5	64.7	80.7
1977	80.8	69.3	60.8	60.5	65.5	65.5	78.9

(1) Fredeen, op.cit., Appendix C, Table 15

An experienced producer with adequate facilities, good farm management techniques, and breeding stock can achieve superior performance in terms of hog carcass index. Such performance has an immediate pay-off for the producer in terms of the price which he receives for his hogs.

Since you recognized that the quality and availability of swine breeding stock is important to the future development of the industry, you requested that a separate study be prepared to report on the present status and opportunities for improvement in the swine breeding program in B.C. Because of the technical nature of this topic, this report was prepared solely by Canadian Bio Resources Ltd., whose staff members have had first hand experience in swine breeding and swine herd improvement programs. Their report has been reviewed directly with Al Pelter, Head of the Livestock Branch of the Ministry of Agriculture. A complete copy of the Canadian Bio Resources Consultants Ltd. report, including a summary of their findings and recommendations, is included as Appendix D to this report.

Table 18, opposite, indicates the trend to higher index hogs in Canada from 1969 to 1977.

Performance has varied from province to province with B.C. and the Maritimes showing the highest percentage of over 100 carcass index hogs (Table 18a).

Effective January 1, 1978 the hog indexing table of differentials was altered to allow indexing of hogs from 180 - 199 pounds, with highest indexes being in the 190 -199 pound range. The "average" carcass was shifted to hogs averaging 160 - 169 pounds compared to carcasses averaging 150 - 159 in the former table. These alterations in the grading system encouraged producers to increase average weights of hogs to 171.1 pounds in 1978 (164.4) and hogs weighing over 180 pounds increased to 28.3% of total slaughter. These adjustments caused packer and producer representatives to agree to further changes in 1979 which placed the highest

indexes in the 170 - 179 pound weight range with indexes in the 180 - 199 pound weight ranges being decreased slightly.

Because of the difficulty experienced by producers in adjusting to the new 1978 index which required them to produce lean hogs to heavier weights, the number of hogs grading over 100 declined by about 2% in 1978. In B.C. the decline was about 7%. The greater decline in B.C. may be attributable to a number of new producers commencing production.

Environmental Controls

The 1970's have been characterized by a period of increased public concern about the quality of life, and the environment within which we live. These concerns have manifested themselves in the passage of environmental and pollution control regulations, affecting most aspects of our business operations including agricultural operations.

Hog producers are facing increasing pressure from municipalities over the establishment, expansion and operation of hog production units. This pressure eminates from the movement of urban populations out into surrounding agricultural areas. With increased population densities, there is increased public concern about farm odours associated with waste disposal and manure handling. There is public pressure on the municipalities to put in more restrictive land-use building site regulations which limit the viability of particular types of agriculture including hog production.

Most of the regulations which have been developed or proposed by municipalities where agricultural and urban development are coming in conflict relate to either transferring the problem to other areas by restricting certain types of agricultural operations such as hog or poultry farms or alternatively assuring that the farms will be surrounded by so much land that odours from waste disposal will not be a problem. These solutions have not been very helpful to the agricultural

Table 19

REGULATIONS AFFECTING FARM WASTE MANAGEMENT IN BRITISH COLUMBIA

Act	Administrative Body	Implications to Farm Waste Management
Pollution Control Act, 1967	Pollution Control Branch, B.C. Ministry of Environment	Under the Pollution Control Act, 1967, any operation involved in the discharge of wastes to the soil, water, or air must acquire a waste discharge permit from the Director of Pollution Control. However, livestock and poultry operations are exempt from this regulation of the Act if wastes are managed and applied in a REASONABLE manner as organic fertilizers to promote crop production. Normal odours from such farm operations are exempt, as well. Any farm from which wastes are not being handled in a reasonable manner may be required to apply for, and abide by the conditions of, a pollution control permit.
Health Act	B.C. Ministry of Health	Sanitary regulations under the Health Act may be applied to farms on matters of nuisance abatement, dead animal disposal, location of offensive livestock operations, protection of the public from conditions injurious to health, and prevention of stream pollution.
Municipal Act	Municipal Councils	Under Section 870 of the Municipal Act, local municipal councils may pass bylaws prohibiting the creation or existence of nuisance conditions on any property; and, under Section 871, may pass bylaws restricting the location of livestock operations; and under section 702, may pass bylaws setting out zones where livestock buildings will be allowed and setting set-back distances for buildings.
B.C. Water Act	B.C. Ministry of Lands and Forests	Under Section 37 of the Water Act, regional engineers with the Ministry of Lands and Forests have the authority to order a cessation to the discharge of any foreign matter into a stream.
Fisheries Act	Environment Canada	The Fisheries Act prohibits the deposit of any waste of any type in any water frequented by fish.

community because on the one hand they have prevented some land suitable for agriculture from being developed. On the other hand, where development is permitted, it is often not viable because of the amount and cost of land required to establish a production operation.

Table 19 opposite indicates the regulations affecting farm waste management in B.C., and the administrative body enforcing these regulations. The regulations under the Pollution Control Act and the Health act allow the enforcing bodies considerable discretion in the application of the regulations. Generally swine operations are exempt from the application of these regulations provided that farm wastes are managed and applied in a reasonable manner as organic fertilizers to promote crop production. The exemption also applies to normal odours associated with swine farming operations.

The Agricultural Engineering Branch of the B.C. Ministry of Agriculture prepared a booklet in 1976 for the swine industry environmental committee. This booklet set out environmental guidelines for swine producers in British Columbia and specified guidelines for reasonable manure and wastewater handling practices.

The booklet suggested guidelines covering:

1. The layout, location and construction of swine buildings and equipment.
2. Swine housing and waste handling systems.
3. Swine manure storage structures.
4. Swine building sanitation.
5. Land disposal of swine manure.

The guidelines incorporated the latest technology then known. The booklet suggested that better waste handling systems would be developed and that periodic revisions to the guidelines would be required.

The guidelines have been very helpful in reducing problems associated with manure handling and waste disposal. However, the cost of compliance with the guidelines has also been substantial. The capital cost to start a new 100 sow farrow to finish hog farm has been increased by about 10% or $40,000 for manure storage and handling systems. The operating cost of a hog farm has also been increased by about 3% to 4% to finance and operate these systems.

The guidelines issued by the Agricultural Engineering branch of the Ministry of Agriculture apply throughout the Province of B.C. and would be equally applicable on Vancouver Island, in the Okanagan, as well as the Lower Mainland. Thus the cost of establishing and operating acceptable manure handling and storage systems would be about the same in each of these areas. The only area in which these costs might be somewhat lower would be in the Peace River area. Because of its low population density there is likely to be less concern and pressure from the Municipal governments in the Peace River area to establish high standards of pollution and environmental control for hog farming operations.

Outside of B.C. there is increased pressure on prairie hog producers to also adapt to higher environmental standards in terms of manure handling and waste disposal systems. In the United States, the Environmental Control Protection Agency is pressuring the U.S. Department of Agriculture to establish higher standards of environmental control for U.S. hog producers.

At present, B.C. hog production costs are likely about 2% to 3% higher than prairie or mid-west U.S. hog production costs as a result of having to meet higher environmental standards. Over the next five to ten years, this production cost disadvantage will likely decrease as producers in the prairie provinces and the mid-west U.S. are forced to adopt more expensive waste disposal and manure handling techniques.

Feed and Feed Costs

The main ingredient in hog feed rations is normally barley or corn. Most hogs raised in B.C. and on the prairies are raised on barley. Hogs in Ontario and the mid-west U.S. are mostly raised on corn (because it is grown in those regions). Hogs grown in Quebec are primarily raised on barley because barley can be imported at less expense from the prairies than corn from the U.S.

Feed Freight Subsidies

The shipment of western feed grain to Eastern Canada is assisted by a system of preferential freight rates and in the case of Eastern Quebec and the Atlantic provinces, by subsidies under the Feed Freight Assistance program

All grain shipped by rail from the prairies to Thunder Bay is covered under the Crow's Nest pass freight rate agreement. This agreement was first established in 1897 and currently provides statutory rates for the movement of grain to export terminals at Thunder Bay and Vancouver at a rate of $5.73 per metric ton. This rate is about one quarter of the rate which would normally be charged if the railroads were able to set their own tariffs to recover their costs and to earn a normal rate of return on their investment. The difference between the legislated rate under the agreement and the railway's cost of shipping the grain is paid for by the Federal government. However, since no adequate return on investment is allowed for in the freight rate reimbursement, the railroads have no incentive to invest in new grain handling cars. This is one reason for the shortage of grain cars on the prairies, and also explains why most new grain cars are now built for and owned by the Federal government.

The Crow's Nest Pass freight rates apply to all grain shipped from the prairies to Thunder Bay, be it for export or domestic use. However, on shipments

to the west coast, the rates only apply to grain shipped for export and current domestic freight rates are charged on all grain shipments for domestic use. The result of this policy is that B.C. livestock producers get no benefit from the Crow's Nest rate subsidy but eastern livestock producers benefit substantially from the lower feed grain freight rates. A January 1976 report by the Canadian Pork Council examined the impact of the Crow's Nest Pass rate structure and Feed Freight Assistance and concluded that these forms of transportation subsidy were equivalent to a net production cost advantage, Montreal over Edmonton, of $3.85 per cwt. for dressed pork.

In August of 1976, Feed Freight Assistance payments were reduced or eliminated to points in Ontario and western Quebec, but were continued unchanged into Eastern Quebec and the Atlantic provinces. The dropping of this subsidy put the production cost of pork in Ontario and western Quebec on an equal footing with pork imported from the prairie provinces. The Atlantic provinces and eastern Quebec could still import western grain for local hog production more cheaply than importing pork from the prairies. Thus Eastern Quebec in particular still had an incentive to increase its local hog production.

Approximately 50% of the Western barley originates in Alberta, with 35% in Saskatchewan and 15% in Manitoba. During the 10 year period from 1966 to 1976, the average production of barley in Eastern Canada was 25 million bushels per annum and in Western Canada it was 384 million bushels per annum. (Fredeen, op.cit., Appendix F, Table F5).

According to the 1976 Statistics Handbook of the Canada Grains Council, the amount of barley fed to Eastern livestock increased from 47 million bushels in 1966 to 86 million bushels in 1976. This exceeded Eastern barley production by 58 million bushels. A large portion (about 80%) of the barley imports would have been

used for hog feed in Quebec. Although Ontario produces over 100 million bushels of corn per year, it is still only 80% self sufficient in its livestock feed requirements. It relies on imports of corn and barley to make up the balance of its feed requirements. Thus, it does not have any substantial surplus of feed to sell to Quebec. Quebec must therefore rely on imports of Western feed grain or U.S. corn to meet the major portion of its livestock feed requirements.

The existence of freight rate subsidies for the transportation of grain helped to encourage an increase in hog production in Eastern Canada, but the real impetus for this increased production came as the result of changes to the Federal government's feed grain policies in August of 1974 and 1976. These policies were implemented through directives issued by The Canadian Wheat Board.

Canadian Wheat Board

The Canadian Wheat Board (CWB) was established as a marketing agency for Western Canadian wheat in 1935. In 1943, it was given the power (under the War Measures Act) to control the marketing of barley and oats.

Thereafter, until 1973, the CWB controlled the marketing of all wheat, oats, and barley (domestic or export) unless these grains were fed to livestock within the province in which they were produced.

The price of feed grains sold domestically was generally based on comparable export prices. Thus, an "off-board" market developed within grain producing provinces. Off-board grain was sold internally to feeders or feed mills for use as animal feed as compared to that which was sold through the CWB for export or for animal feed to grain-deficient provinces.

Because prairie farmers were limited in the amount of feed grains which they could sell to the Canadian Wheat Board, they tended to feed the grain to their

hogs or the sell their surplus feed grain to local feeders or feed mills as a means of realizing some immediate return on their grain production. The feed mills would turn the grain into feed and sell it to hog producers.

These off-board feed sales were usually at a price 10% - 40% below the CWB selling price for feed grains to grain deficient provinces. As a result prairie hog producers could produce hogs on the prairies at considerably less cost than producers in Ontario, Quebec, and B.C. who had to pay considerably higher prices for hog feed.

While the CWB policies helped to support prairie hog production levels, they did not necessarily allow the farmer to receive the highest price for his grain. This problem was recognized and in August of 1974, a new Feed Grains Policy came into effect, and users of feed grains throughout Canada were given direct access to prairie feed grains. The objectives of this policy were:

1. To provide a fair and equitable base price for feed grains across Canada.
2. To provide relief for the producer against depressed feed grain prices such as occurred in 1969 and 1970 when producers were forced, by circumstances, to sell feed grains at prices below the cost of production.
3. To encourage the expanded production of livestock and feed grains in areas of potential across Canada.

At the same time, the Canadian Wheat Board was instructed to return the responsibility of marketing domestic grains to the grain trade. It was hoped that there would be enough competition between grain companies, who were now responsible for domestic pricing, to automatically create an equitable basis for pricing without having to resort to a formula system. When the Feed Grains Policy of 1974 was being prepared, it was assumed that the B.C. or eastern livestock producer would also have access to U.S. corn if prairie grain prices were out of line on a corn-equivalent basis.

Table 20a

DEALERS AVERAGE SELLING PRICES FOR HOG FEEDS INDEXED AGAINST THE PRICES (CANADIAN AVERAGE) QUOTED JANUARY 1, 1971

Ground Barley

	Atlantic	Quebec	Ontario	Prairies	B.C.
1970	1.01	.96	.95	.66	1.02
1971	1.09	1.02	.99	.68	1.11
1972	1.08	1.00	.95	.68	1.10
1973	1.55	1.50	1.44	1.05	1.63
1974	2.22	2.16	2.10	1.79	2.44
1975	2.25	2.16	2.13	1.84	2.55
1976	2.12	2.00	1.96	1.74	2.34

Table 20b

Hog Grower

1970	1.04	.98	.99	.76	1.05
1971	1.07	1.02	1.00	.86	1.08
1972	1.67	1.00	1.00	.84	1.08
1973	1.52	1.53	1.54	1.36	1.54
1974	1.97	1.92	1.92	1.93	2.08
1975	2.06	1.96	2.10	1.87	2.20
1976	2.05	1.93	1.89	1.80	2.20

The introduction of this new Feed Grains policy had the desired effect. It increased the sales of prairie feed grains to grain deficient provinces and it encouraged an expansion of livestock production in these areas. Feed grain prices, particularly in the prairie provinces, rose sharply in 1974, and became much more closely aligned with feed prices in other provinces. (See Table 20, opposite). Since prairie feed grain producers could now get a much better price for their feed grain, many farmers ceased growing hogs and instead turned to selling their grain both for export and to producers in other areas. In 1975, prairie hog production declined by 30%, whereas production in Ontario declined by only 8% and production in Quebec increased by 2%.

The effect of opening up the feed grain trade removed much of the prairies production cost advantage over hog production costs in feed deficient areas. After feed freight subsidies under the Crows Nest Pass Agreement and the Feed Freight Assistance Program are considered, the actual production cost advantage swung to Ontario and Quebec hog production away from production on the prairies. As noted earlier, this situation was partially correct in August of 1976, when Feed Freight Assistance payments were reduced or eliminated to points in Ontario and Western Quebec. Since then, Feed Freight Assistance payments have been left at these 1976 levels in B.C., eastern Quebec, and the Atlantic provinces. They are no longer adjusted annually to keep pace with increases in transportation costs.

Further amendments were made to the new Feed Grains Policy in August of 1976 in order to assure the continued use of Western feed grains by Eastern livestock producers.

On August 1, 1976, a new pricing formula for domestic feed grains was implemented. the Canadian Wheat Board became actively involved once again in the domestic feed grain market through the offering of feed grains to the domestic

market at prices competitive with U.S. corn landed in Montreal. Under this system, the domestic price of wheat, oats, and barley is based on a formula that considers the price of U.S. corn and the relative energy and protein values of the feed grains. The higher protein value of western grains is taken into account through the inclusion of soybean meal in the formula. Using Montreal as a reference point, the CWB takes the landed cost of U.S. corn and the soymeal-corn price ratio on a daily basis and determines the competitive price of wheat, oats, and barley according to a predetermined scale. This price is then adjusted by deducting transportation and handling costs to arrive at the appropriate selling price in store at the Lakehead.

The implications of this policy were that it not only protected eastern Canadian feed markets for western feed grain producers, but it also assured eastern hog producers that their feed grain prices would be competitive with those of U.S. hog producers competing with them in the north eastern U.S. hog market area. Thus the 1976 ammendments to the Feed Grains Policy again contributed to an increase in Quebec hog production. The impact of these changes on the Quebec market was much greater than on the Ontario market because of Ontario's 80% self sufficiency in feed grains.

Establishment of Domestic Feed Grain Quotas

In March of 1979, a new development occurred when the Canadian Wheat Board announced that it would be establishing domestic feed grain quotas for the 1979/80 crop year. The quotas are to apply to all deliveries made by grain producers to grain elevators and railway cars.

The purpose of the quotas is to alleviate some of the problems of congestion and transportation difficulties which have resulted from the build up of grain

supplies on the prairies. According to Douglas Mutch of the Canadian Livestock Feed Board, the current supplies of all grains on the prairies exceed the capacity of the grain handling system. The decision by the Canadian Wheat Board to establish non-Board delivery quotas was to help prevent surplus grain from flooding the Prairie handling system and to allow more balanced producer marketing opportunities, between grain destined for food consumption or export and feed grain.

This system may help to alleviate some of the grain handling problems on the Prairies and to bring about a more equitable marketing treatment for grain producers. However, the major difficulty which could arise from the establishment of quotas on the domestic feed grain market is the creation of a third market within the Prairies. This would arise if quotas were too restrictive and producers increased direct sales to other producers and feed mills within the Prairies. Such an occurrence would result in pushing Prairie feed grain prices below non-Board domestic feed grain levels — in effect meaning that Prairie feed grain users would have access to grain at prices below those available to most non-Prairie users.

Such a development would represent a return to the production cost conditions which existed prior to 1974. It would likely result in an increase in prairie hog production and a decrease in the competitive position of the Eastern Canadian industry, particularly in Quebec. It would have less impact on B.C. producers than Eastern Canadian producers because the quotas do not apply to grain hauled by truck direct from farms.. If prairie farm prices of feed grains were to fall below non-Board domestic feed grain levels, B.C. feed mills would likely start buying grain directly from Alberta grain producers hauling it by truck to their own feed mills. Trucking costs are too high to make this a viable alternative for eastern feed mills so they would have to continue to rely on rail shipments of grain.

Table 21

AVERAGE MONTHLY HOG GROWER PRICES
F.O.B. MILL DOOR - BULK ($/TON)

1978	B.C.	Alta.	Sask.	Man.	Ont.	Que.	Mar.
Jan.	149	128	137	135	149	163	170
Feb.	149	128	139	134	148	164	171
Mar.	152	128	128	136	152	167	173
Apr.	154	131	140	138	161	172	178
May	154	132	142	140	163	170	179
June	152	132	144	142	166	170	178
July	151	133	142	142	162	166	159
Aug.	148	130	144	139	158	164	171
Sept.	148	126	142	135	158	165	171
Oct.	145	127	140	134	158	168	172
Nov.	146	129	133	135	166	173	181
Dec.	149	130	135	138	168	176	181
Avg.	150	130	140	137	159	168	174

Source: Canadian Livestock Feed Board

We expect that the implementation of non-Board feed grain quotas will tend to result in increased hog production on the Prairies simply as a means of more quickly marketing feed grains which are restricted in delivery by the new quotas. If the implementation of the feed grain quota system also results in the development of a third feed grain market within the prairies, then prairie hog production will increase further.

Current Feed Grain Prices

Table 21, opposite, shows the average monthly hog grower prices across Canada in 1978. The table shows that Alberta had the lowest overall feed cost followed by Manitoba, Saskatchewan, and British Columbia. Hog grower feed costs in Ontario and Quebec were 6% and 12% respectively higher than feed costs in B.C.

Alberta has the lowest overall feed cost because it produces about 50% of the barley grown in Western Canada. Based on these 1978 hog grower feed prices, Alberta hog producers had a 15% feed cost advantage over B.C. hog producers.

The major portion of the difference between Alberta and B.C. feed costs is accounted for by freight, elevator charges, and brokerage as shown in Table 10a. The balance may be accounted for by higher labour costs and operating expenses in B.C. feed mills. In their brief to the Select Standing Committee on Agriculture, the B.C. Feed Manufacturers Association stated that excluding ingredient costs, wage costs constitute 57% of the direct cost of production of feed. They also indicated that B.C. feed mill employees are paid wages which are 36% - 38% higher than employees in Alberta feed mills. Thus, higher labour costs combined with freight, elevator charges, and brokerage charges account for most of the difference between B.C. and Alberta feed prices.

On Farm Feed Mixing

Many hog producers on the prairies mill and mix their own grain to create their own feed. A simple on-farm feed manufacturing system requires a capital investment of approximately $25,000 and an inventory investment of approximately $6,000. This type of facility can produce a limited range of mash feeds. Farms that require more complicated feeds or pelleted feeds would require much higher capital investments and inventories.

Although studies by the University of Alberta have shown that on-farm feed manufacturing can reduce feed costs by $16.50 per metric ton, such systems would only be economic for hog producers producing more than 1,000 hogs per year on the prairies. In B.C. on-farm feed mixing would likely only be economic for the very few producers producing 2,000 to 2,500 hogs or more per year.

The reason that a higher level of production would be required in B.C. to make on-farm feed mixing economic is that a simple mixing system producing mash feeds would not give a producer the same control over his feed costs and utilization that a pelleted feed system allows. It has been found that pelleted feeds yield a better weight gain to feed ratio than mash feeds. Thus farmers on the prairies who mix their own feeds may save on feed milling costs but get less weight gain per ton of feed than they would have achieved had they bought pelletized feed. There is thus a trade off between the cost savings available from on-farm feed mixing vs. the higher utilization of feed which can be obtained from pelletized feed. In order to offset the less efficient utilization of feed, a B.C. producer would have to produce a minimum of about 800 metric tons of on-farm feed per annum in order to start saving money on his feed costs. This amount of feed would be sufficient to produce about 2,000 to 2,500 hogs per annum.

Trend to Increased Hog Production Costs

In addition to higher capital costs, there is a trend to increased farm operating costs for farms in Eastern and Western Canada. The major operating costs of a hog farm are feed costs, labour costs, and debt service costs. As discussed on page 43, farming costs increased by about 110% in the period from 1970 to 1977.

Hog prices kept pace with or exceeded increases in farm production costs in three of these years and fell below the increases in productions in the other four years. In 1978 hog prices again caught up with increases in production costs, rising 137% above their average 1970 level.

While hog prices have tended to increase over time to reflect increased costs of production they have not always moved uniformly with increases in production costs. Because the producers can exercise very little control over the price paid for their hogs the only route open to them to increase their profitability has been to obtain better control over their production costs. Various studies have shown that larger hog farm production units have lower capital and operating costs per hog than smaller hog farm production units. As a result there has been a continuing trend across Canada to a consolidation of the industry into larger hog production units.

This trend to larger hog farm production units is likely to continue in future as a means of obtaining lower production costs and hence a lower break even point on operations than can be achieved by smaller production units. The implication of this trend for B.C. is that in order to be competitive with Alberta hog producers, B.C. should encourage the development of hog production units which are larger than Alberta hog production units.

Table 22

CANADIAN FEDERALLY INSPECTED PACKING PLANTS SPECIALTY 1977

	Hogs	Beef	Hogs & Beef	Total
B.C.	-	3	-	3
Alberta	1	12	6	19
Saskatchewan	-	2	3	5
Manitoba	-	1	5	6
Ontario	2	13	10	25
Quebec	7	5	14	26
Atlantic	-	-	7	7
TOTAL	10	36	45	91

The rise in operating costs has also included increases in the cost to establish and finance new production facilities. These costs can now account for as much as 20% of total production costs. However, once these costs have been committed, they become relatively fixed. Thus, in a period of rapid inflation, such as the present time, producers with established facilities have a significant production cost advantage over new producers starting up new production facilities.

Slaughtering and Processing Facilities

Except for Quebec, the majority of Canada's hog slaughtering and processing facilities are now at least forty years old. Many of these facilities are no longer efficient or cost competitive with new specialized hog processing plants.

Of the 91 federally inspected slaughtering plants in Canada in 1977, only 10 specialized in killing hogs. Of these 10 plants, 7 were located in Quebec, 2 in Ontario, and only one (a very small plant) in Alberta (see Table 22 opposite). Most all of the hog kill in Ontario and Western Canada takes place at "multi-species" plants which kill both hogs and cattle.

The fact that the pork industry has been almost totally dependent upon multi-species plants for hog killing has become of greater significance with the increase in beef production in Western Canada. Over the past 20 years Canada's per capita consumption of beef has risen from about 70 to 110 pounds of beef per year, while our pork consumption has stayed within a range of 50 to 60 pounds a year (see Table 23). As a result, beef slaughtering has become a much more significant part of the meat packing company's operations. Beef slaughter on the prairies has increased steadily since 1958 and has gone from 15,600 head to 47,600 head per week during this period. About 80% of this increase has occurred in Alberta, with the balance in Manitoba and Saskatchewan.

Table 23

PER CAPITA CONSUMPTION OF MEAT IN CANADA

Calendar Year	Beef lbs.	Pork lbs.	Poultry lbs.
1957	72.0	44.4	25.8
1958	68.0	49.4	27.6
1959	65.6	56.7	30.3
1960	70.0	52.6	27.7
1961	70.5	50.3	31.1
1962	71.1	50.1	31.0
1963	74.3	50.7	33.0
1964	79.4	51.8	35.0
1965	83.6	47.9	36.6
1966	84.0	47.0	39.3
1967	83.2	54.5	40.8
1968	85.1	53.5	39.9
1969	85.6	51.4	43.1
1970	84.4	58.7	45.2
1971	89.2	68.3	44.5
1972	92.5	61.0	45.5
1973	91.8	57.6	46.9
1974	94.7	59.9	45.4
1975	102.1	50.9	42.6
1976	110.4	53.1	44.7

Source: Statistics Canada

In response to this increase in production, the meat packing industry has built new specialized beef killing and processing facilities and has converted some of its pork processing facilities to boxed beef operations.

This had no immediate impact on the processors' ability to service prairie hog producers because up until the past several years, Western Canada had a substantial surplus of hog slaughtering and processing facilities. This situation may now have changed. When prairie hog production fell by 30% in 1975, the processors reacted by closing down several plants. In a number of instances, facilities in existing multi-species plants have been converted over to beef use and cannot be readily converted back to hog killing and processing operations.

The actual throughput of a plant will be limited not only by its killing capacity, but also by its chilling, cooling and cutting capacity. With the development of boxed beef programs by Western packing houses, some cutting room area previously devoted to pork processing has been turned over to beef cutting operations.

As a result of plant closures and the reallocation of hog processing facilities to beef processing operations, Fredeen estimated that Western hog slaughter capacity was reduced by 39% in the period from 1975 to 1977. (Fredeen op.cit. Appendix D, page 5). Indications are that this trend continued in 1978 with the closure of another Alberta hog processing plant.

According to Fredeen, 90% of the Western hog kill is now confined to 9 plants in 3 cities, Edmonton, Saskatoon and Winnipeg. A list of these 9 plants is shown in Table 24, together with the names of 5 smaller plants which account for much of the remainder of the western hog kill. All of these 9 plants are multi-species plants with beef processing as well as hog processing operations.

Table 24

LOCATION OF LARGE HOG PROCESSING PLANTS IN WESTERN CANADA

Province	Processor	Plant Location
Manitoba	Burns Meats Ltd. Canada Packers Limited Custom Abattoir Ltd.* J.M. Schneider Inc. Swift Canadian Co. Limited	All of Winnipeg
Saskatchewan	Intercontinental Packers Ltd.	Saskatoon
Alberta	Burns Meats Ltd. Canada Packers Limited Capital Packers Ltd.* Gainers Limited Swift Canadian Co. Limited	All of Edmonton
	Fletcher's Fine Foods Ltd.*	Red Deer
	Grande Prairie Packers*	Grande Prairie
British Columbia	Intercontinental Packers Ltd.*	Vancouver

* denotes relatively smaller plant.

In terms of Ontario and Quebec, Fredeen indicates that there has been little change of any real consequence in hog killing and processing operations in these provinces since 1972.

Although Quebec has expanded its hog killing capacity by the establishment of a number of specialized, highly efficient hog killing and processing operations, it has not started up any new plants since 1972.

In Fredeen's opinion the Western Canadian processing industry has made a major strategic error in neglecting the development of new hog slaughtering and processing facilities in favour of upgrading beef killing and processing facilities. He believes that unless the packing plants construct new specialized hog killing and processing facilities they will be unable to compete with the superior efficiency of modern hog killing and processing facilities.

Fredeen points to the situation in the United States which he indicates is parallel to the situation in Canada. He says:

> "The U.S. packing industry has gone this same route. Major packers, to remain competitive in the beef business, were forced to upgrade facilities and expand into the "value added" business of boxed beef which provided greater control over product quality and offered additional incentives in terms of transportation costs and by-product utilization. Preoccupied with this challenge they ignored the need of the pork industry and the vacuum was gradually filled by new independent firms. Today, the large firms appear to be in full retreat. Unable to compete with the modern technology of the hog kill-process specialists the multi-species plants are in the process of phasing out their hog operations.
>
> The same strategy is evident in Canada with numerous multi-species plants discontinuing their hog kill operations. Unfortunately for the hog

industry, the resemblance ends there. The vacuum created is not being accommodated by development of specialized hog kill facilities and such development by new entrepreneurs appears to be discouraged by the reluctance of existing firms to relinquish any portion of traditional "market shares".

This situation must change if the hog industry is to progress in Canada. Outmoded operations must be replaced — not simply renovated —if the new technology relating to plant efficiency and product quality is to assume its proper role."

The conclusions that we draw from Fredeen's observations of the industry, particularly in Western Canada, are that:

1) The Western Canadian hog processing and slaughtering plants are all multi-species plants and are not as efficient as a single species hog slaughtering and processing plant.

2) The Western Canadian processors have been concentrating on the development of their beef slaughtering and processing facilities to the detriment of the development of new pork processing facilities.

3) Western Canadian processors may not be dedicated to an expansion of the pork processing industry because:

   i) they cannot depend on an increasing supply of hogs from prairie hog producers as a basis of developing new pork markets, including export markets

   ii) the marketing problems in marketing pork are much more difficult than in marketing beef since 60% of pork is sold in the form of further processed product.

4) If there was a sufficient supply of hogs available in B.C., a new specialized hog kill and cut plant could be established which could be competitive with facilities in other provinces.

Realignment of Marketing Patterns

In 1975 the sharp decline in Western Canadian hog production led to a change in pork marketing patterns for Western Canadian processors. Up until 1975 the processors were producing a surplus of pork which was marketed into B.C., Ontario, and Quebec. From 1975 to date, Western Canadian hog producers have not been producing sufficient hogs to meet Western Canadian needs. As a result, there was a realignment of Western Canadian pork trading patterns. The nearest source of pork was the U.S. mid-west, so the Western processors started to import U.S. pork to augment local production. With the decline in the supply of Western pork moving into Ontario and Quebec, hog producers in these regions continued to increase their production to the point where Eastern Canada is now self-sufficient in pork production. This has effectively closed this market as a regular outlet for surplus Alberta pork production.

With the shift in pork marketing patterns, there was also a shift in price relationships. The main price setting pressure on prairie hog prices shifted from Toronto to mid-Western U.S. hog market prices. As the importance of this price shift became recognized the Western hog marketing boards incorporated the mid-west U.S. hog prices into their formulas for establishing the opening offer price in their dutch auction systems.

These changes in marketing and price setting patterns are important to B.C. for the following reasons:

Table 25

TRENDS IN CANADIAN PORK TRADE (1)
1960 - 1976

	Imports (millions of pounds)		Exports (millions of pounds)		
	From all Countries	% from U.S.	To all Countries	% to U.S.	% to Japan
1960	17.7	99	71.6	66.0	9.5
1965	37.5	76	64.7	85.8	-
1970	26.9	88	72.3	82.9	9.8
1976	197.3	97	85.5	23.0	69.9

Table 26

TRENDS IN U.S. PORK TRADE (1)
1960 - 1976

	Imports (millions of pounds)		Exports (millions of pounds)	
	From all Countries	% from Canada	To all Countries	% to Canada
1960	185	25.0	138	12.7
1965	333	16.0	130	21.9
1970	449	13.0	177	13.3
1976	420	4.7	416	46.2

(1) Source: Fredeen, op.cit., Appendix B, Table B2.

1) The decrease in pork marketing opportunities in Eastern Canada for Western pork producers means that B.C. will be a much more important market outlet for these producers.

2) The close alignment of Western Canadian and mid-west U.S. hog prices provides improved assurance to B.C. hog producers that they are receiving competitive prices for their hogs. At the same time it provides assurance to the local processors that they are paying a competitive price for hogs.

Trends in Canadian Pork Trade

There have been very significant changes in Canada's trade balance of pork and pork products over the last twenty years. Fredeen's analysis of total trade figures shows that Canadian pork imports have tended to increase significantly since 1960 while Canadian exports have remained relatively unchanged. Table 26 indicates that U.S. pork imports have generally exceeded exports although this gap is now closing.

While 95% or more of our pork imports have come from the United States, our share of Canadian pork exports to the United States has declined from 25% of their imports in 1960 to less than 5% in 1976. In the period from 1970 to 1977 the major portion of Canadian pork exports shifted from the U.S. to Japan and by 1977 over 70% of our pork exports were going to Japan (Table 25 opposite).

Within Canada there has been a regional shift in the balance of export/import trade in pork particularly since the decline in Western Canadian hog production in 1974. Table 27 indicates that British Columbia, Ontario and the Maritimes have continued to be net importers of pork while Quebec, which was in a deficit position prior to 1975, now produces a surplus of pork.

Table 27

ESTIMATED PRODUCTION VS. CONSUMPTION OF PORK BY PROVINCE 1976

(in millions)

	Population	Consumption (lbs.)	Production (lbs.)	Production Surplus* (Deficit)
B.C.	2.5	121.0	6.8	(114.2)
Alberta	1.8	88.9	146.6	57.7
Saskatchewan	.9	45.4	71.2	25.8
Manitoba	1.0	49.8	107.3	57.5
Ontario	8.4	404.7	337.1	(67.6)
Quebec	6.3	303.1	304.3	1.2
Atlantic Prov.	2.2	106.7	38.0	(68.7)
	23.1	1,119.6	1,011.3	(108.3)

Source: Fredeen, op.cit., Appendix B., Table B9.

* Notes: (1) B.C., Ontario and the Atlantic provinces showed a deficit in production of 250.5 million pounds, while the prairie provinces and Quebec showed a surplus of 142.2 million pounds. Our net deficit of 108.3 million pounds was supplied almost entirely from the United States.

(2) In terms of Canada's 1976 estimated consumption of pork, Canada relied on the U.S. for approximately 17.6 percent of its pork requirements (9.6 percent to meet Canada's absolute deficit requirement and 8.0 percent to meet Canada's export commitments).

Up until 1975 Western Canada provided most of Canada's pork exports but since then a larger share of these exports has come from Ontario and Quebec. In part, these exports have developed because of Eastern Canada's increased self sufficiency in pork and the Western Canadian processors' inability to supply the market. Another factor contributing to the increase in exports has been the aggressiveness of Quebec and Ontario processors in seeking new export markets for their pork production, particularly to Japan.

About 5% to 6% of Canada's pork production is now sold to Japan. This percentage has stayed relatively constant since 1975 when Canada's pork exports to Japan first exceeded 50 million pounds per annum. One of the reasons that Canada's trade may not have increased further is that Japan is still about 90% to 93% self sufficient in hog production (Fredeen, op.cit. Appendix B, Table B1) and now produces over 15 million hogs per year. Canada's pork exports to Japan now account for about 2% of Japan's pork consumption and about 25% of its pork import requirements.

The outlook for further expansion of Canadian pork exports to Japan is dependent upon a number of factors. If Japan's per capita pork consumption increases, this will create an increased demand for pork. Much of this demand may be supplied by increased Japanese hog production. However, rising feed, labour, land and interest costs in Japan may discourage matching increases in Japanese hog production capacity. Japan is also experiencing environmental concerns similar to those faced by B.C. hog producers. These environmental concerns may have an impact on the expansion of Japanese hog production facilities.

Since Japanese labour costs now exceed those in Canada, we believe the outlook for increased Canadian exports to Japan could be promising. In order to capitalize on such export opportunities Canada must increase its hog production so that it is no longer a net importer of pork.

For B.C. with is proximity to Japan and its deficit hog production position the opportunities for expansion of the local pork industry appear very promising.

III. PORK INDUSTRIES IN OTHER CANADIAN PROVINCES

In addition to our literature review, members of the study team carried out about 20 interviews with 15 organizations in the U.S. and Canada, in order to obtain information about the operations of the pork industry and its trends in these areas, as a basis for comparison with the B.C. industry and for assistance in developing a direction for the industry. The organizations contacted are listed in Appendix C and cover those in Manitoba, Ontario, Quebec and Iowa, as well as Agriculture Canada. Some contacts were also made in Alberta to obtain additional data.

The purpose of the trip was to obtain information as a basis for comparison on hog production, processing, and hog marketing in other provinces. Our material dealing with the pork industry in the other Provinces is discussed under the following headings:

- Hog Producers
- Processing Plants
- Marketing Boards

Hog Producers

Quebec has increased its hog production by about 58% since 1971 to 3.0 million hogs, while hog production in all other provinces declined. We found that much of this expansion was due to the support of the Quebec agriculture and processing industries by the Quebec government and support of Quebec hog producers by the feed companies.

The increase in Quebec production took place significantly in 1975, with the introduction of the new Feed Grains Policy and again in August of 1976 when the new pricing formula for domestic feed grains was implemented. Both of these

changes led to an expansion of hog production in Quebec financed by feed grain suppliers.

Because of the expansion taking place in Quebec, we wanted to study the Quebec industry in order to identify those aspects which may be of assistance to the expansion of the industry in British Columbia.

The Quebec hog producers are unique in Canada in that about 70% of the production is integrated between the hog producer and the feed mill. That is, the feed mill will either contract with the producer to grow hogs for a set fee per hog, plus a percentage of any margin over costs, or else will finance the hog feed needed for production and contract for the sale of hogs grown by the producer. Only 30% of the production is handled by independent hog feeders.

This approach, we understand, got started because of the historic low farm income in Quebec and the resulting shortage of both investment funds and incentive to invest in rural Quebec. The hog growing program appeared to be an answer to help the Quebec farmers to develop additional cash income and to provide another source of feed sales for the feed industry.

The Quebec contracts for hogs provide for a base cost for feeding of about $8.50 per hog, plus a percentage of the margin received over all costs. Normally this margin allows for a 50/50 sharing of profits although the arrangements vary and each feed supplier establishes his own arrangement. The other approach is for the feed company to finance the feed purchases and charge a rate of interest. There are a variety of rates currently in use in these contracts. They are usually higher than bank rates, and range up to 2% per month. The farmers pledge their farms as security for these feed loans. Since the hog contracts can run between 6 months and 2 years, mostly around 1 - 1½ years, such a financing charge can be a significant part of a farmer's costs. The study team learned that many independent

producers in Quebec buy their feed cheaper than those producers who are on contract. Some of the independents were purchasing feed and feed supplements from Ontario. We were unable to determine the exact amount of the price differentials, but they were said to be significant.

The marketing of hogs in Quebec is largely handled by the hog truckers who are for the most part the same feed dealers who hold hog contracts with the producers. They buy the hogs from the producers and sell to the slaughtering plants for a commission which normally would run between $2 and $4 per hog. Such a commission decreases the net revenue to the hog producer, although it saves them trucking and marketing costs.

The producer's share in any profit margins could be reduced still further by higher feed costs levels and interest charges. Because of the volume of hogs they can arrange for a processor, the trucker hogs get priority for slaughter while independent producers who truck their hogs directly must wait for their hogs to be slaughtered, thus incurring weight shrinkage which could run up to $1.50 per hog. This helps to maintain the control of the trucking companies over hog deliveries in Quebec.

In contrast, we found that only about 12% - 15% of the Ontario hog production is integrated with feed mills. Thus, most Ontario producers are in a more independent financial and operating position. About 80% of the feed used in the Ontario industry is Ontario grown, and is therefore not subject to the continuation of feed freight subsidies either under the Crow's Nest Pass agreement or the feed freight assistance program.

Most producers on the prairies produce their own feed grain and do not have to rely on the feed mills for financing. We found that while the feed mills have assisted in financing the expansion of Quebec hog production, they have done so at the expense of the producers' financial and operating independence.

We found that each of the Provinces we visited were planning increases in hog production and marketing. Quebec increased its production 14% in 1977 and a further 16% in 1978, while the Ontario industry in 1978 increased by 400,000 hogs, or about 15% over 1977. Indications are that all provinces including the prairies are planning increased production of hogs by 12% to 16% in 1979. Continuation of growth of this magnitude will be a significant factor in developing plans for growth of a similar scale in B.C. However only B.C. is in a deficit position in terms of its local pork production. The B.C. industry can grow to supply its own market needs while the other provinces will have to look to export opportunities if they are to increase their own production beyond their local market needs.

Processing Plants

We found that there is very little integration between the producers and the processors in Quebec, Ontario, and the Western Provinces. In Ontario there are nine main bidders for the hog marketings. Many of the smaller plants, with requirements of less than 50 hogs per week are not required to use the marketing board buying process.

The average killing and processing capacity for the nine large plants in Ontario is approximately 6,000 head per week, about the same rate as the 8 - 10 largest plants in Quebec, and the 9 largest plants on the Prairies. This size of plant differs significantly from that of the B.C. industry, in which Intercontinental Packers, the largest, has a capacity of 2,000 hogs per week, and all other inspected plants have a capacity of less than 800 hogs per week.

About 10% of the Quebec volume is cut for export with most of the export sales going to Japan and the United States. In the plants that we visited, we estimate that between 30% and 50% of the production was special cuts which were

destined for Japan. This volume is much more labour-intensive that the domestic volume, requiring 75 men on the cutting line for Japanese orders compared to 48 for domestic orders. This particular market could be a good opportunity for the British Columbia industry, particularly in the creation of jobs.

The Quebec plants are unionized and pay the same union rates that are in effect in all other meat cutting plants in Canada. In the specific plants that we visited, the hogs were supplied from producers located within a 50 mile radius of the plants. The slaughter efficiency was running between 10 and 11 hogs per man-hour, which we view as a satisfactory industry performance.

The costs of the plants for slaughtering and cutting are between 7¢ and 8¢ per pound, which includes labour, supplies, and all overheads. While specific details were not available in all plants, the killing costs were about 3¢ per pound, with the cutting costs at 4¢ - 4 3/4¢ per pound.

The Quebec Department of Agriculture has supported the expansion of the processing industry in Quebec through its financing authority, SOQUIA. This Authority will lend, or purchase, up to 49% equity in various meat processing companies in Quebec.

Marketing Boards

The structure and operations for the marketing of hogs in each province varies significantly. For instance, there are Hog Marketing Boards in Alberta, Manitoba, Ontario and Quebec. Saskatchewan has a Hog Marketing Commission. In each of these Provinces except Quebec, the Boards or Commissions operate a system to handle sales between the producers and processors. In Quebec, the Marketing Board has just been established in 1977, and as yet is only providing an information service to the industry.

In the industry, the Ontario Marketing Board was viewed as the best model for a responsive yet responsible operation for meeting producers' needs and those of the industry. The Ontario system seems to work relatively well and is responsive to market changes. The Board's decisions are participatory with input coming not only from the producers but from the processors, export customers and others in the industry. The style of operation of this Board was commented upon favourably to the study team by industry observers in several provinces. The philosophy of the Ontario Board is to treat the processors as important customers requiring fair treatment, which means the offerings need to be as attractive as possible.

The Ontario system may be working well because Ontario hog production and marketing has been relatively stable. Ontario production in 1978 was about 3.2 million hogs, an overall decline of 6% since its peak level in 1971, whereas the decline in the Western Canadian provinces was about 40% during this same period. If Ontario had experienced a decline in hog production of the magnitude of Western Canada, it is likely that strained relations between the industry sections would have developed as in other provinces.

The Ontario Board operates on a regionalized basis within the province, with 12 hog yards and 45 assembly points to assemble hogs for sale and delivery to the processors. About 80% - 88% of the hogs marketed are handled by these facilities, with the remainder being shipped direct from the larger producers. The portion of direct shipments will increase as some larger producers enlarge their facilities. The Western hog marketing boards have also established assembly yards to assist in the delivery of hogs. The Saskatchewan Hog Marketing Commission established assembly yards in 1975 to assist in designating deliveries and the Alberta Board operates five assembly yards. These are located at Grande Prairie, Edmonton, Red Deer, Calgary and Lethbridge.

We found that each of the Boards has established a marketing system for selling hogs. The Manitoba Hog Marketing Board in February 1977 established a central auction system for sale of all hogs for delivery the following week. The offerings were based upon the following formula:

40% of Hog Marketing at the Toronto price

40% at $3.00 per hundredweight below the Toronto price

20% at the Omaha price

This auction system was replaced in June 1978 by a Dutch Auction system, with the offerings being started using the above formula.

These two systems replaced a teletype auction system which operated from 1965 to 1977. The teletype was discontinued because the Marketing Board felt that a marketing sharing arrangement among the processors had developed over time, and that price spreads between the Manitoba and the Toronto prices were becoming too wide.

The change in the marketing system in 1977 caused a great amount of controversy with the packers. The amendment to the system in 1978 was a compromise which was only implemented after the Board designed system for marketing hogs was not accepted by the packers. Even this change did not work out satisfactorily since the Board refused to guarantee to fill all orders which the packers bid on. The result was that the packers ceased buying hogs from the Board in August of 1978 until a further compromise was reached.

The Saskatchewan system on the other hand, is based upon face to face negotiations with buyers, including the one major packer in the province, to establish hog contracts. These contracts are normally for a one to three month period. Contracts are bid on a plus or minus basis using an amount reflecting the Ontario, Alberta, Manitoba and Iowa prices. The contracts have usually been for

amounts on the plus side of this base, and have usually averaged somewhere between the Alberta and Manitoba price. The buyers pay the Commission directly, and receipts are pooled weekly so that each producer receives the average price prevailing for the week. Pooling was begun in 1975 to maintain equity for all producers after two major slaughterhouses closed their plants, following a 40% drop in production. Intercontinental Packers Ltd. was left as the sole major purchaser, purchasing about 90% of all Saskatchewan production.

The deliveries of Saskatchewan hogs are designated to a buyer by the Commission to facilitate hog deliveries and the efficient operation of the remaining plant. Because Intercontinental is such a factor in this market, it tends to set a price which is about half way between the Alberta and Manitoba price.

The Ontario Board also uses the Dutch Auction system similar to Manitoba, but continues to operate this system by telex. Since there about 20 hog buyers in Ontario and only 5 or 6 in Manitoba, there may be less opportunity for market sharing arrangements to develop. Since 1974, prices in Ontario have been pooled on a weekly basis. The buyers pay the Board which withholds its levies before calculating the pool proceeds for growers.

The Quebec Marketing Borad was established in 1977 and at present is operating in name only, primarily as an information source for the industry. The members would like the Board to become similar to the Ontario Board, but because of the position of the feed mills and the hog truckers in the industry, it is unlikely the Board can do this until the producers become financially more independent, or obtain specific legislation from the Quebec government giving the Board greater power.

The Marketing Boards of Alberta, Ontario and Manitoba have programs to obtain export sales, although these have not yet become a significant factor for the

industry. The Ontario Board will enter into three way offshore contracts for pork products based upon a production cost formula developed by Dr. Gordon Bowman of the University of Guelph. About 1% of the Ontario volume was sold in this manner in 1978 and was included in the pools.

Both the Ontario and Manitoba Boards will, as the occasion demands, purchase hogs for overseas markets. These transactions are entered into in order to support domestic hog prices where the Boards believe that the processors are not actively making or entering the market. The animals are custom killed and cut for the Board. Both Boards have stated these volumes are small, and no profit is taken on such sales by the Boards.

The Quebec Board does not, as a Board, obtain overseas orders. These markets, especially the Japanese markets, have been developed by the packers who have been selling through contracts with international specialty pork brokers.

The Alberta Board does not purchase hogs, but arranges a three-way contract with the overseas buyer, the packer and the producer. The Alberta Board has also established several domestic contracts which have been negotiated by the Board directly with Burns and Fletchers. The details of these domestic contracts are secret and are negotiated on a contract by contract basis between the Board and the buyer. The sales proceeds from these contracts are now being averaged in with the daily Board trading to arrive at the daily pool price. The Alberta Board only sells to the seven federally inspected slaughterhouses in Alberta. The domestically inspected and custom slaughterhouses must all arrange for their own purchases of live hogs. The Board indicates that it is too expensive to service the smaller processors so the smaller processors must purchase through agents who act as brokers and bid for hogs from the Board.

The levies and staffing levels of the Boards also vary widely, and reflect the activities of the boards.

Marketing Board Levies and Staffing

	Cents per Hog	Approximate Staff Levels
Quebec	10¢	no permanent staff
Ontario	75	60
Manitoba	1% of mkt value	35
Sask.	80	14
Alberta	100	50

The total staff estimates are for comparative purposes only. We did not investigate in detail to determine the number of staff devoted to various activities such as assembly yards, sales desks, administration, etc.

Comparison with Mid-Western U.S.A.

We visited two hog killing and processing plants in Iowa to determine trends and developments in this very important hog producing region. The two plants visited were the Oscar Mayer plant in Perry, Iowa, and the Farmlands Foods Inc. plant in Denison, Iowa. Each of these plants kills and cuts about 25,000 hogs per week (equivalent to Alberta's total current weekly kill).

These companies provided cost information to us on their killing and cutting costs which indicate that their costs are closely in line with our most efficient Canadian processors. Union fringe benefits (including social security taxes) amount to about 30% of their base wage and their base wage is similar to our Vancouver rates. Thus, the U.S. processors do not appear to have any significant competitive advantage over Canadian plants at the processing level, provided that a reasonable level of throughput can be attained.

We learned that most U.S. plants purchase their hogs by private treaty arrangements between producers and processors. Both plants visited by us have established a number of assembly points or company owned buying stations. The price offered for hogs each day is based upon the Company's judgement of what it can afford to pay. Both companies indicated that the factors they consider in establishing a purchase offer price are the previous day's kill, retail orders on hand, storage stocks, and anticipated offerings for the day. The buying stations are notified each morning once the price has been established for that day. If sufficient hogs are not obtained, the offer price will normally be adjusted upward the following day.

This system seems to work well for both producer and processor. We were told that most hogs sold in the mid-western United States are grown in Central Iowa and southern Minnesota. Sales in these two areas reflect the true market price for U.S. hogs. We learned that the published Sioux City and Omaha market prices are normally always 1.25 - 1.75 cents per pound higher than the actual prices being paid by the major U.S. packers. These higher prices are established based on a relatively small volume of production being purchased at a premium price by the smaller processors. In order to have a proper basis of comparison of U.S. and Canadian hog prices, it is necessary to use a weighted average of the interior Iowa and southern Minnesota prices.

When these adjusted prices are used, it appears that western Canadian and U.S. hog prices have been closely in line with one another over the last four years. Hog producers in both regions are receiving about the same price for their production and the processors are purchasing their hogs at roughly equivalent costs.

Since the Canadian market is still only a small factor for the U.S. pork processors (less than 1% of U.S. pork production), they have not yet been

aggressively seeking our market. Generally speaking, Canadian processors have been contacting the U.S. processors to satisfy their customer pork needs. Thus, maintenance of market brands and entry to the retail market have remained with the Canadian processors. However, the retailers have been importing a considerable amount of pork for fresh sales. Since the channels of distribution for bringing in this fresh pork are now in place, it may take some effort to displace this pork with Canadian product.

Table 28

PRODUCTION COSTS: ESTIMATES FOR 1977 BASED ON 65 SOW FARROW TO FINISH OPERATION*

Cash and Non-Cash Operating Costs (per pig marketed)

	Ontario	Manitoba	Alberta
Feed	$ 53.86	$ 53.01	$ 52.84
Labour	12.49	11.64	14.04
Interest	7.55	10.34	7.33
Depreciation	7.40	5.38	4.61
Fuel, electricity	1.54	1.00	(maintenance)
Taxes, insurance	1.23	1.13	1.67
Vet - medicine	1.20	.80	1.52
Marketing, transport	.80	2.00	1.45
Maintenance, other	6.10	6.15	7.61
TOTAL	92.17	94.45	91.07
% of Ontario Costs	100.00	99.22	98.81

Sources: Ontario: OPPMB, Cost of Production Formula, 1977

Manitoba: Manitoba Department of Agriculture, Marketing & Product Division, Economics Branch

Alberta: CRD Report #96, Marketing Division, Economics Branch

IV. COMPETITIVE POSITION OF B.C. PORK INDUSTRY

The outlook for development of the B.C. pork industry will be dependent upon the ability of B.C. hog producers and processors to be competitive in the B.C. market with their counterparts in other hog producing areas who sell into this market.

Fredeen, in his report on the Competitive Position of the Canadian Pork Industry, examined the cost of hog production in the major hog producing regions of Canada and the mid-west United States. His report indicated that feed costs were as high in the mid-west U.S. as they were in Canada and that farm labour rates appeared to be reasonably similar across Canada and the mid-west U.S. He found that while differences did exist in terms of labour efficiency between production units, these differences reflected variations in design and degree of mechanization. Comparisons made between units of comparable size and design did not show any evidence of regional differences in actual labour requirements for farrowing and feeding operations.

Similarly, he found that there were large differences between individual units in variable costs other than feed and labour, and in fixed costs, but there was no evidence of regional variation in average costs. Thus Fredeen concluded that substantial regional differences in production costs did not exist among the major hog producing regions of Canada and the mid-west United States.

The close relationship in hog production costs from one region to another is also demonstrated by a 1977 study of production costs for farrow to finish operations in Ontario, Manitoba and Alberta. This study was based on a comparison of costs as of January 1977 for a 65 sow farrow to finish unit. Table 28 opposite shows that the variance between Alberta, Manitoba and Ontario production costs

was only about 1%, a difference which is too small to give a definite competitive advantage to any one producing region.

The only cost element in B.C. hog production costs that should be consistently higher than Alberta costs is the cost of feed. Table 21 opposite page 64 shows that feed costs for hog grower rations were about $20.00 per metric ton more expensive in B.C. in 1978 compared to Alberta. Table 20 opposite page 61 indicates that feed mill selling prices of ground barley and hog grower rations have been consistently more expensive in B.C. compared with feeds sold in Alberta. Hog starter and pre-starter rations are about the same price in B.C. compared to Alberta while breeding stock feed will likely show the same cost differential as hog grower rations.

We have calculated the effective feed cost premium for B.C. hog producers over the past year to be about $6.20 per hog as a result of higher hog grower and breeding stock feed costs. In making this calculation we have utilzied the budgeted feed consumption per hog for grower and sow and boar feed shown in Table 3 and have converted the sow and boar feed to a feed ration per hog assuming a production of 18 market hogs per sow per annum. Thus the total feed consumption per hog on which a premium is normally paid is:

Grower rations	546 lbs.
Breeding stock feed	139 lbs.
TOTAL	685 lbs.

This is equivalent to about .31 metric tons of feed per hog at a premium cost of $20.00 per metric ton.

Table 2 opposite page 14 shows the estimated production costs per hog in January 1979 for a new 100 sow farrow to finish unit in B.C. This table shows an

Table 29a

COMPARISON OF PRODUCTION COSTS BETWEEN B.C. AND ALBERTA ASSUMING NO COST DIFFERENTIALS OTHER THAN FEED COSTS

(costs per market hog)

			Variance	
	B.C.	Alberta	Dollars	Percentage
Feed Cost	$ 62.66	$ 56.45	$ (6.20)	10.98
Other Costs	46.99	46.99	-	-
Total Costs	$109.65	$103.45	$ (6.20)	5.99

Table 29b

COMPARISON OF PRODUCTION COSTS BETWEEN B.C. AND ALBERTA ASSUMING NO COST DIFFERENTIALS OTHER THAN FEED COSTS

(costs per cwt.)

			Variance	
	B.C.	Alberta	Dollars	Percentage
Feed Costs	$ 37.97	$ 34.22	$ 3.75	10.96
Other Costs	28.50	28.50	-	-
Total Costs	$ 66.45	$ 62.72	$ 3.75	5.98

estimated cost of feed of about $62.66 per market hog and a total production cost of $109.65 per market hog. If there were no other production cost differences between Alberta and B.C. an Alberta producer establishing a similar production unit would likely be faced with feed costs of $56.46 per market hog and total costs of $103.45 per market hog. These differences in costs per market hog and per hundredweight are outlined in the tables opposite.

One area in which B.C. may enjoy a slight production cost advantage is in energy and building maintenance costs. Because of our milder climate, B.C. producers tend to use less energy per hog to heat and air condition their production facilities. This may result in a cost saving of about 80¢ per hog, or 50¢ per hundredweight.

For production units of comparable size, we believe that Alberta hog producers have a net production cost advantage over B.C. producers of about $3.25 per cwt., as shown below, before considering the cost of delivering Alberta pork to B.C.

Calculation of Alberta's
Production Cost Advantage

(cost savings per cwt)

Alberta feed cost advantage	$3.75
B.C. energy utilization advantage	(.50)
Alberta's net production cost advantage	$3.25

This difference represents a production cost advantage for Alberta over B.C. of about 5.1%, which is a significant difference. These calculations assume that both the Alberta and B.C. producers are purchasing their feed supplies from a feed mill. An Alberta producer, mixing his own feed would have a greater production cost advantage.

While Alberta has an absolute production cost advantage in feed, this cost advantage can be partially offset by B.C. producers if they establish hog farm units producing a minimum of 2,000 to 2,500 hogs per annum. Table 17 opposite page 51 shows that larger hog farm units (producing 2,000 to 2,500 hogs per annum) can achieve production costs which are significantly lower on a per hog basis than smaller and medium size hog production units. Since there are still a large number of small producers in Alberta and the other prairie provinces, B.C. producers, by concentrating on the establishment of large production units, could be competitive with these producers. In addition, the establishment of larger hog production units in B.C. would allow these producers to consider on-farm feed mixing. As discussed on page 65, such systems could be economic in B.C. for large hog producers, and could result in lower overall feed costs.

A factor which should be considered in looking at the competitiveness of the B.C. industry is the cost of importing pork into the province from Alberta or Iowa. On page 34, we show that the cost of shipping pork from Calgary, Edmonton or Iowa to Vancouver is between $2.60 to $3.90 per cwt.

Since B.C. pork processors have not been able to obtain sufficient supplies of local hogs to meet their processing requirements they have been willing to pay a local preference premium of up to $2.50 per cwt. over the Alberta price to obtain local hogs. This premium is about equal to the current cost of importing pork cuts from Alberta for further processing in B.C.

This local preference premium has helped offset the higher cost of production in B.C. and has helped to make B.C. producers more competitive with their Alberta counterparts. This is shown in the table below:

Alberta's Net Production Cost Advantage
Less B.C. Local Premium

(cost savings per cwt)

Alberta's net production cost advantage	$ 3.25
Less: costs to ship cuts or carcasses to B.C.	2.50
Net difference	$ .75

This net difference represents a production cost advantage for Alberta over B.C. of about 1.2% when B.C. processors pay a premium for local production equivalent to the cost of importing pork cuts from Alberta. This net difference is less significant in terms of B.C. producer costs and can be offset even further by B.C. hog producers superior performance in producing hogs with a higher carcass index than Alberta hogs. (see Table 18 opposite page 53).

In our opinion, the current local premium price offered for B.C. hogs will likely exist as long as B.C. processors are short of hogs. Thus, in our opinion, B.C. hog producers operating large production units can be competitive with Alberta hog producers as long as we have sufficient slaughtering and processing facilities to handle B.C. hog production. If a shortage of facilities develops, then the price relationship of B.C. hogs to Alberta hogs will change and B.C. producers will be less competitive with their Alberta counterparts.

If hog production in B.C. exceeds the ability of processors to handle, process, and market these hogs into local markets, then the processors will have to allow for freight costs out to market this excess product in other markets. According to studies carried out by Hu Harries, Fredeen, and other economists who have studied the pork industry hog producer prices are influenced by small changes in the supply and demand for pork. As soon as a pork surplus develops in any one

market area the price paid to the producer in that area tends to fall to the price prevailing in the nearest deficit market area which can absorb the surplus, less the cost of freight to ship the pork to that area.

If B.C. production increases to the point where B.C. slaughterers and processors cannot easily handle the increase in B.C. hog production, then local hog prices can be expected to adjust to a hog price which may be somewhat less than the Alberta laid down equivalent.

The excess volume, however, could be sold in the Northwest United States. If sold in the Tacoma, Washington market, for instance, the costs of the additional transportation and marketing would run about $3.30 per hog, or $2.00 per cwt. This would have the affect of increasing the net differential between Alberta and B.C. producer returns to about $5.25 - $6.25 per cwt., as shown in the table below:

Alberta's Net Production Cost Advantage When
B.C. Processors are unable to slaughter, process,
& market all B.C. Producer hogs in B.C.

(cost per cwt.)

Alberta's net production cost advantage	$ 3.25
Additional B.C. producer or processor costs to market surplus hogs or pork to Alberta or Washington	$2.00 - 3.00
TOTAL	$5.25 - 6.25

This would be a very significant cost disadvantage to B.C. producers in terms of their competitive position vis a vis Alberta producers. In terms of production costs, it represents a differential of 8% to 10% compared to Alberta production costs. As indicated, this situation is only likely to occur during those periods when B.C. hog production starts to exceed local B.C. slaughter capacity or the processing and marketing capacity of B.C. pork processors.

Effect on Hog Price of Net Export Import Position

Concern has been expressed as to the effect on B.C. hog prices if Alberta production increases substantially.

Essentially the hog market in Canada reflects the North American market as a whole, adjusted for exchange rate differences. Whether Canada is in a net export or a net import position, fine tunes the price at any given time. In 1978 Canada, largely as a result of increased eastern production, went to a net export position and prices in Ontario and Quebec declined relative to U.S. prices. At the same time, Alberta maintained a net import position and hog prices, normally lower than the Toronto price, are now higher than Toronto.

On a net import position a Canadian market will be higher than the U.S. price by the amount of freight and duty whereas on an export basis the reverse will be true and the Canadian price will be lower by the same amount. These net export or import positions are determined on a regional and not a national basis.

If production in Alberta and B.C. together creates a net export situation the market price in Alberta will decline by the approximate cost of freight and duty to ship this excess production to the nearest deficit market area. This will result in a lowering of returns to the Alberta hog producer by the amount of freight and duty incurred to market this product.

The price relationship between B.C. hog producers and Alberta producers should remain the same (i.e. B.C. hog producers should continue to receive a local preference premium of about $2.50/cwt) but the absolute return to the B.C. hog producer will be lowered by the same amount as his Alberta counterpart. Thus the competitive position of the B.C. producer will remain the same relative to an Alberta producer. Both will see their incomes reduced by a like amount if production increases to the point where Alberta has substantial surplus production

and it attempts to market this production within the North American market. If this production is marketed outside of North America, to countries such as Japan, the market price of Alberta hogs will not have to drop to reflect the cost of freight out. In foreign export contracts, the processor does not have to absorb this cost which is paid for by the importing country. As a result, the processor does not have to extract this cost from the producer in the form of lower hog prices.

A situation is likely to occur where for some period, Alberta packers maintain their share of the B.C. market in the face of increased production in B.C. In such a scenario the B.C. hog price will drop relative to Alberta and in line with the U.S. value. However, as long as the hogs are processed in B.C. and not shipped out alive, the price drop will be tempered by the difference in market value of the specific surplus cuts rather than the total carcass. In addition there may be an opportunity for B.C. processors to access the Pacific Rim market (Japan) and further temper the price spread.

Therefore, adequate slaughter and process facilities for increased hog production in B.C. are essential to mitigate market declines during such periods. There would also be pressure on the processors to maximize returns by displacing Alberta pork on the B.C. market and eventually bring the hog price back to a normal freight over Alberta level. Since the current hog slaughter capacity in B.C. is only about 200,000 hogs, it is important to look at the competitive outlook for B.C. slaughterers and processors.

Competitiveness of Hog Slaughtering & Processing in B.C.

The Select Standing Committee on Agriculture of the B.C. Legislature Commissioned a report on the Meat Processing Industry in British Columbia, which was completed by its research staff in December of 1978. This report reviewed a

number of aspects of the meat processing industry in B.C. including B.C. hog slaughter and processing capacity.

The report concluded that B.C. processors market about 60% of the pork consumed in B.C. and that they provided almost unlimited scope for the increase of hog production within the Province. The B.C. processors currently process and market the equivalent of more than 500,000 hog carcasses per annum which is about four times greater than current B.C. hog slaughter. The report recognized that the major limitation to increased hog production would be the availability of sufficient slaughter facilities to handle increased hog production. Their estimate of these facilities was consistent with our own i.e. about 200,000 hogs per annum.

The report reviewed the general profitability of the meat processing industry in B.C. which included beef as well as hog processors. The research staff found that "high volume slaughter and fresh meat operations tend to be the most competitive and operate with minimal profit margins. The seven B.C. slaughter and process facilities included in the study had before tax profits of 1.25% of sales. This compared with an average pre-tax profit of 3.4% of sales for four companies surveyed whose activities were directed to higher value added products and less to fresh sales. Generally the report concluded that profit levels were lower than required for a healthy industry.

This survey of B.C. meat processors also asked them to identify opportunities and constraints for the increased use of B.C. meat products. The report indicated that "seven of the fourteen respondents considered that the best opportunities for future expansion would be in increased domestic consumption, three considered interprovincial trade, and four companies were of the opinion that international trade would provide the best opportunities for future growth in meat processing." In terms of constraints to growth, "fifteen companies mentioned raw

materials, five reported problems with labour, one cited government regulations, and another difficulties in getting financing."

The report has demonstrated that B.C. slaughterers and processors can be competitive with slaughterers and processors in other provinces. It also highlights one of the major obstacles to growth of the slaughtering and processing sectors in B.C., i.e. the availability of sufficient hogs and cattle for slaughter.

One of the advantages of expanding the hog slaughtering and processing industries in B.C. is that there is greater labour value added to pork than any other product. This is because 60% of the animal is further processed in varying degrees. The SSCA report also showed that companies specializing in further processed products were generally more profitable than firms specializing in slaughter and fresh meat operations.

Our review of the meat packing industry in other regions in Canada and the mid-west U.S. did not produce any evidence to suggest that B.C. was at a competitive disadvantage to slaughterers and processors in these other areas, despite their much higher killing and processing volumes. We found that labour rates in the meat processing industry were almost the same across Canada and did not reflect much in the way of regional differences.

This is because the meat packing industry is dominated by four or five national firms who negotiate national labour contracts with the Canadian Food & Allied Workers Union. These contracts form the basis for wages and benefits in both the unionized and non-unionized plants and become trend setters with the meat packing industry across Canada. Thus B.C. meat packing labour rates are very closely related to rates in the prairie provinces and other parts of the country. In our visit to Iowa we found that U.S. wage rates in the two meat packing plants visited by us were very close to Vancouver rates and that their fringe benefits,

Table 30

PROFIT AND LOSS INFORMATION SUPPLIED BY 17 MEAT PROCESSING COMPANIES IN BRITISH COLUMBIA

(000's of dollars)

	1972	1973	1974	1975	1976
Sales ($)	155,209	200,530	238,832	237,400	247,608
(%)	100.0	100.0	100.0	100.0	100.0
Purchases	117,108	153,830	179,201	175,821	179,000
	75.5	76.7	75.0	74.0	72.3
Advertising	124	40	47	213	148
	.08	.02	.02	.09	.06
Wages & Salaries Including Fringes	18,935	21,657	27,465	27,301	30,455
	12.2	10.8	11.5	11.5	12.3
Packaging	7,605	10,427	12,180	13,294	13,123
	4.9	5.2	5.1	5.6	5.3
Transportation	1,008	1,223	1,456	1,448	2,401
	.65	.61	.61	.61	.97
Finance Costs	807	922	1,289	1,210	1,188
	.52	.46	.54	.41	.48
Other (Overheads and other Process Costs)	7,450	10,025	12,896	16,618	16,589
	4.8	5.0	5.4	7.0	6.7
Profit (Before Tax)	2,172	2,406	4,298	1,495	4,704
	1.4	1.2	1.8	0.63	1.9

Source: SSCA - The Meat Processing Industry in British Columbia

including social security taxes, were about 30% of their base wage. This compares with fringe benefits of about 25% in the unionized meat packing plants in B.C. according to the SSCA report (ibid pg. 110). Thus it does not appear that any of the major hog producing areas have a competitive advantage over B.C. in terms of plant labour rates.

Table 30 opposite shows the profit and loss information supplied by 17 meat processing companies in B.C. to the SSCA by major expense category. This table shows that raw materials (meat costs), wages, salaries, and fringe benefits account for about 85% of processor costs. The only two other items of significance are packaging costs (5.3% of sales) and overheads and other processing costs (6.7% of sales).

We have already shown that a B.C. processor can be competitive in purchasing local pork compared to the cost of importing pork from Alberta for processing in B.C. We have also shown that B.C. processors can be competitive with labour rates in other hog producing areas since the trend setting pattern for these rates is negotiated nationally. In terms of packaging, B.C. producers can be competitive with their Alberta and prairie counterparts since much of the packaging material used by the industry is manufactured in B.C. In terms of overhead costs, our costs should also be competitive with those in Alberta and other major slaughtering and processing areas.

Thus, given equally efficient facilities, B.C. slaughterers and processors could be competitive with slaughterers and processors in any other area. We looked separately at slaughtering and processing facilities, in B.C. and other areas.

We found that plant efficiency does not necessarily increase with size of plant although a certain minimum size of plant (with a killing capacity of 5,000 - 7,000 hogs per week) is required in order to establish a modern and efficient kill

and cut operation. For instance we found that the production cost per hog in the two Iowa plants visited by us which were killing 25,000 hogs per week were not significantly lower than in the Quebec plants which were killing 6,000 hogs per week. Thus a comparison of slaughter line speeds and kill rates is not a good measure of the efficiency of a plant. A better measure of efficiency is the slaughter rate per man hour. The slaughtering of hogs is labour intensive therefore a power rail is necessary to move the animals to the work stations at a rate which inspires good use of worker time.

A good kill line will run at 10 - 11 hogs per man hour. Many Canadian and American lines run at this speed. However, no B.C. plant presently attains this level of slaughter efficiency. Too few hogs spread amongst a number of plants have prevented the attainment of efficient levels of slaughter. Intercontinental Packers Ltd., which has the largest throughput currently attains a slaughter rate of 6 - 7 hogs per man hour. This plant has the ability with some modification to increase efficiency. The other lower mainland plants such as Kohlers or Borsato's would require major rebuilding and a substantial investment in new equipment in order to reach an efficient throughput. They would have to have substantially larger buildings and would have to invest in such equipment as power rails, high capacity scalding and dehairing equipment, and additional chilling and cooling storage capacity. They would also have to invest in additional pollution control equipment.

In order to be efficient in terms of cutting we found that cutting line speeds need only match slaughter line speeds in those plants which slaughter daily. A slaughter and cutting facility could be competitively efficient by slaughtering and cutting on alternate days with the same crew. At the same time such a plant would have the ability to grow to meet the needs of the market.

Table 31

COMPARATIVE POSITION OF HOG PRODUCTION BY REGIONS IN BRITISH COLUMBIA

	Advantages	Disadvantages
Fraser Valley	- mild climate therefore lower building costs	- high land prices
	- close proximity to market • lower transportation costs • less shrink	- higher taxes - environmental problems due to high urbanization
	- competitive feed market (large number of manufacturers)	
	- freight advantage on certain feed items	
S.Interior/ Okanagan	- lower land prices	- limited local market, therefore high transportation to costs alternate markets
	- relatively mild climate, lower building costs	- environmental problems associated with emphasis on land use for tourism and recreation
Peace River	- low land prices	- limited local market therefore high transportation costs to alternate market
	- low feed grain prices	- harsh winter climate, therefore higher building costs during winter
	- limited environmental problems	- limited feed manufacturing capability entails individual capital investment for feed processing
		- government and technical services limited within local area
Vancouver Island	- mild climate, therefore lower building costs	- limited local market therefore high transportation costs to alternate market
		- higher feed prices associated with transportation costs
		- reliance on ferry transportation and associated higher costs.

In terms of B.C.'s competitiveness at the processing level we do not perceive this to be a problem. The majority of the pork processed in B.C. into ham, bacon, sausage and cooked meats is done in the three plants of Canada Packers, Fletchers, and Intercontinental. These plants are well equipped with modern machinery and compete favourably with all other Canadian product arriving on the B.C. market. In addition, B.C. has two of the largest fancy sausage manufacturers in the west which sell their products all across Western Canada and into Ontario. In total our processors handle about 550,000 hog carcass equivalents per annum, with 50% - 60% of this amount being processed into further processed product. B.C. production from our three largest processing plants compares favourably with the volume from Alberta plants and competes fully with processed product from all other areas.

Regional Advantages of Hog Production in B.C.

As part of our study, we considered the comparative advantages and disadvantages for increased hog production in various regions of the province. Table 31 opposite lists some of the advantages and disadvantages of the major potential producing areas within the province.

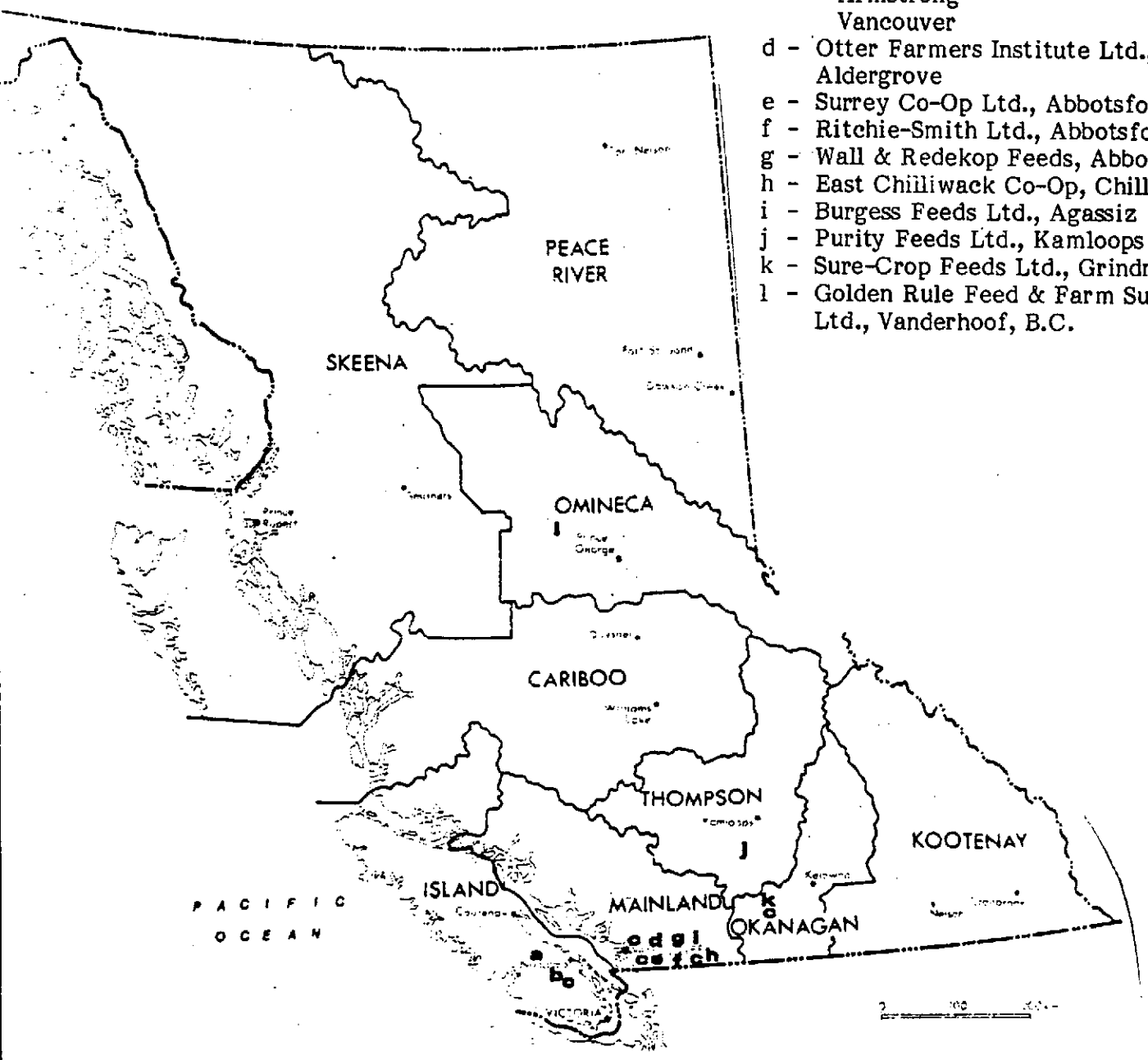
In order to identify those factors which would be most significant in determining the location of new hog growing operations we prepared an analysis of some factors which a producer should consider in establishing a new hog production unit.

While a producer cannot exercise any effective control over the price which he receives for his hogs he can exercise some control over his production costs. He can also try to improve the quality of his hog production. By achieving a superior performance in terms of hog carcass index, the producer can achieve an above

BRITISH COLUMBIA FEED MILL LOCATION BY AGRICULTURAL REPORTING REGION

Feed Mill Location Reference Key

a - Nanaimo Farmers Co-Operative Association, Nanaimo
b - Top Shelf Feeds Ltd., Duncan
c - Buckerfield's Ltd. (Division Jas. Richardson & Sons Ltd.)
  Abbotsford
  Duncan
  Armstrong
  Vancouver
d - Otter Farmers Institute Ltd., Aldergrove
e - Surrey Co-Op Ltd., Abbotsford
f - Ritchie-Smith Ltd., Abbotsford
g - Wall & Redekop Feeds, Abbotsford
h - East Chilliwack Co-Op, Chilliwack
i - Burgess Feeds Ltd., Agassiz
j - Purity Feeds Ltd., Kamloops
k - Sure-Crop Feeds Ltd., Grindrod, B.C.
l - Golden Rule Feed & Farm Supply, Ltd., Vanderhoof, B.C.



average return for the same production cost as a producer who only achieves an average hog carcass index grading on his hog production. The choice of an appropriate production location can help a producer control his production costs primarily by helping the producer to save on transportation costs, to bring feed to his farm and to ship his hogs to market.

Since feed costs are his most important input cost, a producer should locate his operations in a place where feed supplies are most readily available at competitive prices. Most regions in B.C. outside of the Fraser Valley, Okanagan, Vancouver Island and the Peace do not have alternative feed suppliers. Because of low feed volumes their prices are not as competitive. Table 32 opposite shows that almost all of the feed mills serving B.C. are located in southern B.C. in the major hog producing areas. By concentrating hog growing operations in areas well served by feed suppliers, the producers should be able to encourage greater competition for the hog feed business among feed suppiers. They should also be able to reduce transportation costs for delivery of feed to their farms.

Similarly, because the producer must bear the cost of delivery of his hogs to market, he should locate in an area where there are a number of other hog producers. This will assist in the development of a regular hog delivery system at a lower cost to the producers in a region. Producers locating in other locations outside of the major producing areas would likely find themselves faced with much higher costs in getting their hogs to market without any compensating saving in production costs.

These feed and hog transportation problems are discussed in more detail on pages 28 - 34 of this report. Table 33 on the following page shows the impact of feed acquisition, transport and hog delivery costs on hog producer costs assuming that all hogs are shipped to Vancouver for slaughter.

Table 33

COMPARISON OF REGIONAL VARIANCES IN FEED GRAIN ACQUISITION AND HOG TRANSPORTATION COSTS IN BRITISH COLUMBIA BEFORE AND AFTER FEED FREIGHT ASSISTANCE

(costs per market hog)

	BC Feed Mill Net Grain Acquisition Cost	Hog Shipping Cost to Vancouver	Cost With Feed Freight Assistance	Add Feed Freight Assistance	Cost Without Feed Freight Assistance
	(1)	(2)		(3)	
Peace	$ 1.00*	$ 7.25	$ 8.25	n/a	$ 8.25
North Okanagan	3.99	3.70	7.69	1.80	9.49
Lower Mainland	4.15	1.90	6.05	3.14	9.19
Vancouver Island	5.13	6.00	11.13	3.60	14.73

Source: (1) Table 10b - opposite page 31
(2) Table page 32
(3) Table page 31

* This cost of $1.00 per hog is the assumed additional cost of shipping feed supplements to the Peace compared with the cost of shipping supplements to the other producing regions in B.C. In addition to feed barley which is available in the Peace, hog rations require about 25% by weight of feed supplements which are not locally grown in the Peace

This table shows that the Lower Mainland and North Okanagan regions have the lowest net transportation costs per market hog followed by the Peace. Vancouver Island costs are significantly higher by about $3.00 - $4.00 per hog than costs in these other areas. If feed freight assistance were removed, Vancouver Island's cost disadvantage relative to these other regions would increase to about $5.00 to $5.50 per hog, an amount which we consider to be quite significant.

While land costs may be somewhat lower on Vancouver Island, they would not be sufficiently low to offset the higher transportation costs associated with shipping feed to the Island and transporting live hogs back to Vancouver for slaughter. In addition, land costs on Vancouver Island are significantly greater than land costs in the North Okanagan and Peace River areas.

While we see some opportunities for hog production on Vancouver Island to supply local demand, it does not appear that there is any cost advantage in producing hogs on the Island to supply the main pork market in Vancouver. The main areas which appear to have a production cost advantage are the Lower Mainland and the North Okanagan, Thompson areas. As indicated on pages 9 and 10, these are also the main areas where new producers are starting up operations.

The hog shipping costs shown in Table 33 are based on full truckload shipments to Vancouver. A producer in an outlying area who could not assemble sufficient hogs to make a truckload lot would face greater transportation costs unless he could sell his hogs locally for local consumption. Since about 80% of B.C.'s population is located in the Lower Mainland area and on Vancouver Island, the major portion of all hogs produced in the Province must ultimately be shipped to Vancouver, either as live hogs for slaughter or as pork and pork products for distribution and sale by the major food retailers. In either case, experience has shown that the transportation cost of getting this pork to market is normally borne

by the producer. If the producer does not pay the cost directly, then it will be extracted by the processor in the form of lower hog bid prices. Thus we believe that it is appropriate to compare production costs in various regions in B.C. as if all product was ultimately marketed through Vancouver.

While production costs in the Peace River area appear to be reasonably competitive with the costs in the North Okanagan, the costs shown in Table 33 do not reflect the cost of weight loss and deaths en route as a result of transporting live hogs from the Peace to Vancouver. We estimate that these costs would amount to $1.50 to $2.00 per hog. As a result, it would not be economic to raise hogs in the Peace River area for marketing into Vancouver although it would be possible to raise hogs economically in the Peace for marketing in Alberta. Such production, however, would not be of benefit to B.C. slaughterers and processors.

Another factor which producers should consider in establishing new production facilities is the availability of technical expertise and veterinarian services to provide advise in hog production. Some help can also come from other hog producers. These technical support and swine veterinarian services are usually only found in areas which have sufficient swine populations to support their services. These specialists can help a producer to increase his income by improving his farm management techniques and breeding herd health. Both of these factors can result in better producer returns through the production of hogs with higher carcass index ratings.

We understand that several swine veterinarian specialists have recently relocated in the Lower Mainland from the prairie provinces as a result of the increase in hog production in the Lower Mainland. The next area to be serviced by such a specialist would most likely be the Thompson Okanagan area because of the build up of hog production in this area. The availability of these services in the

Lower Mainland and Thompson Okanagan area plus the competitive cost advantage of these areas suggests that any efforts to stimulate a major expansion of hog production should be concentrated in these regions.

The major constraints to increased production in the Lower Mainland are the high costs of land and municipal zoning restrictions related to environmental and pollution control problems. Table 2 opposite page 14 shows that without substantial equity, a new producer would likely be unable to finance the cost of land, new facilities and working capital even in a period of high producer prices. Thus in order to be successful and to survive, a new producer should make every effort to minimize his production costs by locating in an area which offers the best combination of relatively low feed and transportation costs and good technical and swine veterinarian support services. In our opinion the areas best suited for such increased production are the Thompson Okanagan and Lower Mainland regions.

In making these recommendations we have not ignored the small and medium size producer in our analysis or those producers in the smaller producing regions of the province. Rather, we have taken the position that these producers are fulfilling a local market need and may well be able to do so profitably. However, expansion of their production will likely be limited to their local market areas. We have shown on pages 86 - 92 that in order to be competitive with Alberta hog producers, new B.C. hog producers should concentrate on developing large efficient hog production units. These units can provide lower hog production costs per market hog than smaller units, thus allowing larger B.C. production units to offset Alberta's feed cost advantage. We have also shown that the transportation costs to ship hogs to market in Vancouver can be prohibitive for small producers in outlying regions of the province, although these hogs may be marketed profitably in their own local area to small local abattoirs. The main market, and

market opportunity however is in the Lower Mainland. In order to generate a significant expansion of the pork industry in B.C., it is our opinion that producers should focus their attention on the development of large, efficient production units to meet the pork requirements of Lower Mainland retailers and processors.

We would neither encourage nor discourage small, part time hog producers or producers in outlying regions from expanding their hog production operations.

V. OUTLOOK FOR DEVELOPMENT OF THE B.C. PORK INDUSTRY

We have indicated that B.C. hog producers, slaughterers and processors can be competitive within the B.C. market compared with pork producers in other provinces who are marketing into the B.C. market. This competitiveness is restricted to production for local consumption and is not such that it gives the B.C. industry a competitive advantage to market into the prairies in competition with prairie producers and processors. Despite the fact that the industry appears to be restricted to expansion to meet B.C.'s own pork market needs, the outlook for expansion of the B.C. pork industry appears promising. An opportunity exists to displace much of the pork coming in from outside the Province with local production. In addition an opportunity may exist for B.C. producers and processors to export pork to Japan and to develop additional markets for B.C. further processed pork products, both within and outside of the province.

The speed and extent to which this expansion takes place will depend on a number of factors. Several key questions are:

1. Will the Ministry of Agriculture continue the Farm Income Assurance Program for B.C. Swine producers?

2. Will one or more processors respond to an increase in B.C. hog production by constructing new hog slaughter and process facilities?

3. Will new hog slaughter facilities be built in time to avoid a shortage of such facilities if B.C. hog production continues to expand at its current pace?

4. Will the B.C. swine producers avoid the confrontation situation which developed on the prairie between producer Hog Marketing Boards and the processors as the B.C. industry experiences the growing pains and adjustment problems associated with industry expansion?

Each of these factors will have an impact on the expansion plans of the industry.

Provided that the answer to all of these questions is yes, then we think that it is possible for the industry to achieve substantial growth over the next 5 to 7 years. We indicate below short, medium and longer term objectives which we believe to be achievable over the next two to seven years. Our rationale for selecting these objectives is explained later in this report and is dependent upon the continuation of farm income assurance and the construction of new hog slaughter facilities.

B.C. Hog Growth Potential

Term	Years	Objective (hogs per annum)
Short	1 - 2	150,000
Medium	3 - 5	300,000
Long	5 - 7	400,000 - 500,000

In order to develop the industry B.C. must achieve a substantial increase in its local hog production.

Farm Income Assurance

On page 12 we indicated that nearly all producers cited the Farm Income Assurance program as an important consideration in their production operations. Without this program many indicated that they would not be in the industry or they would not have expanded their production operations.

We have shown earlier in our report on pages 42 and 43 that hog prices can fluctuate considerably in a short period of time. These price fluctuations in the

short term do not always correspond with changes in the cost of production. As a result a producer can be faced with a period of heavy operating losses. Over the longer term, however, hog prices appear to keep pace with increases in the cost of production and a producer who can survive a period of short term losses can usually expect to recoup these losses in future years.

We have also indicated that since start up and capital construction costs increase each year, a new producer will be faced with much higher fixed costs and debt service costs per hog than the average costs of other established producers in the industry. All of these factors indicate that a new producer is assuming considerable financial and operating risk in establishing a new hog production operation.

In order to be successful, we believe that a hog producer should have some limitation on his financial risk, particularly in the start up of new operations. This risk can be reduced by having sufficient equity capital in the business to withstand short term losses and can be partially offset by financial support offered through the farm income assurance program.

The B.C. Swine Breeders Farm Income Assurance Program, which was previously in effect, expired in January 1979. The program had covered a five year period from January 1, 1974 to December 31, 1978 with the B.C. Ministry of Agriculture contributing two thirds of the cost of the program and the B.C. Swine Breeders Association contributing the remaining third. The program established a base cost of production model based on a model farm unit and undertook to pay producers up to 75% of any shortfall between their producer returns and the agreed upon cost of production.

Participation in the program was voluntary, but once a producer had joined he had to agree to participate in the program until its expiry. Basic costs and

market returns were calculated on a weighted average of monthly costs and producer returns. Producers were limited to a maximum of 1,800 eligible market hogs per annum except in the case of partnerships, corporations, and co-operatives. In these latter cases the insurable limit could be increased at the discretion of the Minister of Agriculture.

In order to be eligible for participation in the program, a producer had to become a member of the B.C. Swine Breeders' Association. All hogs insured under the program had to be born, raised and marketed in B.C.

The program was very successful in its first five years. It provided a good measure of stabilization to hog producers' incomes by providing a risk sharing between the producers and the Ministry of Agriculture. With 75% of any losses resulting from a sudden downturn in hog prices or upturn in feed prices covered under the program producers had an incentive to expand their hog production operations. The farm income assurance program was also effective in encouraging financial support for new hog production units from the chartered banks and other financial lending institutions.

We understand that the B.C. Swine Breeders Association has been discussing the renewal of the Farm Income Assurance program for B.C. Swine Producers with representatives of the Ministry of Agriculture. One of the main features of the new program being discussed is a change to a 50/50 cost sharing arrangement between the Government and producers. Another significant change being proposed is to increase the insurance coverage to provide a 100% indemnity for any shortfall in production returns below the cost of production determined by the production cost model.

The new program is to be an ongoing program from year to year with no definite expiry date. No change in the eligibility rules or maximum insurance

coverage limits has yet been proposed. Participation in the program would again be voluntary. A producer could opt out of the program but if he wished to be reinstated into the program he would not be able to receive full coverage for his herd for a period of four years.

We think that the concept surrounding this program is sound and that the Ministry of Agriculture should assist the industry by continuing the program. We believe that renewal of the program as proposed would have a strong stimulus for expansion of the industry. On the other hand, if the program is not continued we would expect expansion of hog production in B.C. to proceed at a much slower pace.

We also recommend that the Ministry review and increase the maximum eligibility limit per producer from 1,800 to 3,600 - 4,000 hogs per annum in order to encourage the establishment of larger more efficient hog production units. The financial risks and cost to the Government in maintaining the farm income assurance program are discussed in a later section of this report.

Outlook For Development
Of New Hog Slaughter and Processing Facilities

If the Ministry of Agriculture agrees to support the continuation of farm income assurance for the B.C. swine industry, we believe that this will encourage a further rapid expansion of B.C. hog production. If current producer plans to establish and expand hog production facilities are realized, the industry will be producing over 200,000 market hogs per annum by early 1981.

In the short term, B.C. slaughterers and processors can readily handle this increased production. Intercontinental Packers Ltd. can process about 100,000 hogs per year, and could increase this amount substantially if it expanded its chilling and cooling storage facilities. The smaller processors could handle 60,000 -

80,000 hogs or more using their present facilities. However, the smaller processors would be unable to expand significantly beyond this level because of their lack of market access at the wholesale and retail level.

Thus by 1981, if hog production was continuing to increase, it would be essential to develop additional hog slaughtering facilities. The development of such facilities would be necessary in order to provide a market outlet for B.C. hog producers hogs and secondly to avoid price and market disruptions which would likely result from a shortage of hog killing facilities.

One of the short term problems that could occur is that hog production could expand faster than the availability of hog killing facilities. This could exert a strong downward price adjustment on B.C. hog prices pushing them temporarily below Alberta prices. Those producers who could not get their hogs killed locally would have to arrange to ship their hogs out of the Province for killing. Such a market disruption would have a high cost to all producers. Another possibility is that the processors might not drop the current premium price which they have been paying for B.C. hogs. However, they might have difficulty in killing all hogs offered to them and would give first preference to their regular suppliers. The volume of hogs which the current slaughterhouses can effectively market will also place a limitation on the number of hogs which they can kill and process and still operate their business profitably.

Any temporary surplus of hogs would immediately disappear once a new slaughterhouse started into production. Since we assume that such an operation would be built to supply existing processors' needs it should be able to sell all of the hogs which it could kill from the start-up of operations. Given the size of plant which should be constructed to be economic, it could kill all of the hogs available in B.C. Since there will not be enough local hogs immediately available for the

new and existing slaughterhouses, competition for hog supplies will likely become very intense. Unless there was a very rapid increase in the availability of new hog supplies, market competition amongst the processors for the existing supply of hogs could be very disruptive to the successful development of the industry.

Another factor which will likely have an impact on the immediate outlook for the growth of the B.C. industry is the recent increase in hog production in other producing areas. As a result of this increased production, hog prices may experience a cyclical decline. Hog production is likely to be less profitable over the next several years than in the past two.

A new producer entering the industry is likely to experience difficulty in achieving profitable operations unless hog prices remain at historically high levels. In such circumstances a new producer would be very sensitive to any decreases in hog market prices associated with a shortage of hog slaughter facilities.

Despite the short term difficulties, we believe the long term outlook is encouraging. By working together we believe that the producers and processors can develop solutions to these short term industry development problems. Some of these solutions could include temporary measures to handle any short term surplus or shortage of hogs (including exporting or importing live hogs for slaughter). They could also include measures to bring about a rapid increase in hog production prior to the start up of a new slaughter facility.

We believe that there is a large role for the government to play in fostering this expansion. This role lies in assisting the industry to overcome the short term problems of a temporary surplus followed by a shortage of hog production and in encouraging the start up of a new slaughter facility.

There are a number of alternatives and constraints to be considered in developing additional slaughtering facilities. In order to justify the investment in

new facilities, the slaughtering and processing industry requires very significant increases in hog production. These raw materials must be assured into the future and available to the processor on a regular basis in order to warrant the investment in facilities and staff for regular hog slaughter and processing. In addition, the processor has to have sufficient access to wholesale and retail market outlets to sell his hog slaughter production. Like the producer, the processor has to be concerned with relatively high capital requirements, financial risk, and profitability constraints, particularly in the start up of new production facilities.

What actually happens in terms of increased slaughter facilities may well depend on decisions made by B.C.'s present slaughterers and processors. They could decide either to expand their existing facilities, or one of them could decide to construct a new green carcass (kill and cut operation) or a fully integrated plant, including processing as well as slaughter.

The minimum size for such a plant to be economic would have to be 2,500 - 5,000 hogs per week, or about 150,000 to 250,000 hogs per annum. Before such a plant is built, a processor would have to have great confidence that the hog growing industry was going to continue to expand very rapidly in B.C. The processor would have to take appropriate measures to assure a minimum plant throughput to reduce start up losses. Part of this throughput could be achieved through forward hog producer contract growing. A portion would have to be obtained from the production going to existing processors.

Since the start up of this operation would result in a doubling of the slaughter capacity within the province, there would have to be very close co-operation between the producers and processors to minimize the disruption to the local market. Unless substantial incentives are offered to construct a new hog killing plant, we believe that private industry may be hesitant to undertake such a high risk investment.

In the longer term, when hog production reaches 400,000 to 500,000 hogs per annum, the processors would be faced with the task of displacing pork coming in from Alberta. Price competition at the primary and retail level would likely result. Production adjustments would have to be made, or new markets developed in order to avoid serious marketing problems.

At this stage, the development of export markets might allow further increased B.C. production. A second new hog killing facility might be developed or the first one expanded to keep pace with the increase in hog production.

While a kill and cut plant would be less expensive to establish than a fully integrated processing plant it would have to be able to sell its production to retailers and processors. These markets would take time to develop and could also lead to additional costs in interplant selling and costs of reinspection of pork being shipped between plants. Thus an integrated processor who had already developed access to the retail market might be in a better position to construct a new integrated hog slaughtering and procesing plant.

It is possible that Japanese interests might be willing to finance part of the construction costs of a new plant in order to obtain additional sources of pork supplies for Japan. Recently we read in the Toronto Globe & Mail Report on Business (June 19, 1979) that the Alberta Pork Producers Marketing Board and two processing companies Gainers Ltd. and Swift's had entered into a contract with a Japanese trading company to kill and process 2,300 hogs per week for the next year and eight months. The contract is to be filled by 143 Alberta producers who have committed a portion of their pork production at a guaranteed margin of $49.84 over feed costs.

If a similar contract could be obtained for B.C. to correspond with the opening of a new processing plant and an expansion of B.C. hog production, such a

contract could provide an important catalyst to speed the development of the B.C. pork industry.

In our opinion any new plant which is built should be located in the Lower Mainland or Thompson Okanagan areas. These are the only two regions in B.C. which are likely to develop sufficient hog production to supply a new plant. While hog production in the Peace River area could also be increased it would not be economic to develop a processing plant in the Peace to service the main B.C. market and distribution centre in Vancouver. A processing plant located in the Peace might have difficulty in obtaining sufficient workers to adequately man the plant and it would experience excessive transportation costs in delivering pork to the Vancouver market. The Okanagan Thompson area would have the advantage of lower land costs than the Fraser Valley area but a new slaughtering and processing plant establishing in this area might experience difficulty in obtaining sufficient fresh water supplies for its processing requirements. Health of Animals regulations prohibit the recycling of water used in slaughter operations and each hog killed requires about 15 gallons of water. There might also be a problem with effluent disposal in the Thompson Okanagan areas which might not be faced to the same extent in the Lower Mainland. The ultimate choice of plant site selection will have to receive municipal and other governmental approvals and these could take some time to obtain.

It is our opinion that while several processors might be willing to consider the establishment of new slaughtering and processing facilities they would likely consider the financial risks of proceeding with such a project to be too great unless they received substantial Government support. They would also have to be sure that measures were in place to bring about a doubling of hog production within two to three years of the opening of the plant in order for their investment to be viable.

If the Ministry wishes to support the rapid expansion of the industry, we think that it will have to become actively involved in the development of the industry. Our recommendations for a development strategy for the industry are presented later in this report.

Cost Estimate to Achieve Industry Expansion

We have obtained estimates of the cost required to achieve the proposed industry expansion.

The approximate cost for a farrow to finish 100 sow farm producing about 1,800 to 1,900 hogs per annum is about $225,000 for farm buildings, machinery and equipment, excluding the cost of land, livestock, housing and working capital. With these assets included, the cost would be about $350,000 to $400,000 in constant 1979 dollars. Thus the capital investment required to obtain a 100,000 increase in hog production from new production facilities, would be in the range of $19.4 to $22.2 million.

By December of this year, B.C. hog producers will have doubled B.C.'s hog production from 75,000 to 150,000 hogs per annum in the space of about two years. This expansion has taken place during a period of high hog prices when producers operations have been quite profitable. In order to expand from 150,000 to 400,000 hogs, the industry must make a further capital commitment of $48.5 to $55.5 million. This very high capital investment will only be made if producers and financiers have confidence in the long term health of the industry.

In the short term, the processors collectively may have to spend between $750,000 to $1,500,000 to expand their plant chilling and cooling facilities to hold the additional carcass throughput. In the medium term, a very rough estimate of the cost of a new small 2,500 to 5,000 hog per week kill and cut plant would be $3.0

to $3.5 million plus the cost of land and working capital. This excludes any provision for further processing facilities and includes only limited chilling and storage capacity. If the cost of land and working capital were included, the cost of such a facility would likely rise to $5.0 to $6.0 million. If an integrated hog slaughter and process plant was built, the cost might increase to $8.0 to $10.0 million. These are only very rough figures. They could change considerably depending upon the size, slaughter capacity, location, processing equipment, and design chosen for the plant.

Overall, the combined investment by the producer and processing sector would be in the range of $55.0 to $65.0 million in order to increase local hog production to about 400,000 hogs per annum. Even at that level, we would only be producing about forty to fifty percent of the province's pork consumption.

The benefits to the Province and the industry in making such an investment would be the creation of substantial additional employment and the preservation and expansion of the local meat processing industry.

Every 100,000 additional hogs grown and processed in B.C. will create an additional 40 to 50 jobs in the processing industry as well as 40 to 60 jobs on the farm. In terms of value added to the B.C. economy, each 100,000 additional hogs should result in $3 - $4 million in additional wages, services, and benefits for the economy.

Outlook for Hog Marketing in B.C.

We think that one of the most important factors which could influence the outlook for the development of the B.C. pork industry is the current efforts of a number of B.C. hog producers to form a hog marketing commission. These producers are concerned about the current lack of formal organization and co-

ordination of hog marketing. They are also concerned about their difficulties in some instances in getting their hogs to market. There appears to be a general concern that the producers will remain vulnerable to the processors unless they are formally organized. There is also a belief that they are not being treated equitably by the processors. Some feel that a more formal marketing system would given them greater bargaining powers and might improve their income.

Most of these are either real concerns, or could become problems in the future as the industry grows and experiences the business cycles of the pork industry.

It is evident that the producers have considerable backing and support for the formation of a hog producer's commission. We have given careful consideration to the formation of such a producer oriented commission and believe that the disadvantages strongly outweigh the advantages in the formation of such a commission.

Essentially we believe that the formation of a very strong producer oriented commission might destroy the fragile confidence of the processors which is necessary for any expansion of the industry. We believe that any organization which is developed should be a co-operative one of producers, processors, retailers and Ministry of Agriculture representatives in order to bring about a balanced development of the industry.

We have looked at the current hog price system in B.C. and have not seen any evidence to suggest that a hog marketing commission would produce a better return for producers than the current system.

We have shown that the B.C. pork industry is a very small operation in a North American market in which hogs, carcasses, pork cuts and final products are continually moved as the market requires, and that prices are determined by the

offerings from both the U.S. and Canada. Both the local producers and processors must remain competitive with outside markets, particularly since operating margins in the meat processing industry are normally less than one percent of sales and processors and retailers are very conscious or small price differences. Thus external prices in North America effectively maintain an upper limit on the price local processors can afford to pay for hogs. B.C. is not in a position where it can close its borders to all pork products to protect its own industry, particularly since so much pork is sold in the form of further processed products. Thus the B.C. industry has to be competitive with the best operations in North America, and must be in a position to adjust hog prices to keep in line with hog prices in other market areas.

One advantage that B.C. producers have over their Alberta counterparts is their cost savings in not paying commissions to a Marketing Board. The operations of a commission cost money which must come out of producer returns. The average marketing board commission cost for selling a hog through the Manitoba or Alberta hog marketing boards is about one dollar per hog. B.C. hog producers are able to take advantage of the hog market price set by the Alberta system without having to pay this marketing board charge.

B.C. processors have shown a willingness to pay a local premium for hogs provided that the premium is related to hog prices in other markets. Currently B.C. processors are offering a local preference premium which is at least equal to the shipping cost to bring pork cuts in from Alberta. This affords a measure of price protection for the local processors which allows them to remain competitive with pork products supplied from other markets. Since pork products can be brought into the province by the national processors and the major retail food chain stores, it is essential that the local processors be able to maintain a competitive position in the local pork market.

The national processors have surplus processing capacity available for use in Alberta and Saskatchewan. Consequently, they could shift their B.C. processing production out of the province if they found they could no longer operate competitively in B.C. due to marketing or other regulations.

We have considered a number of alternatives to the present market arrangements between producer and processor, ranging from the present situation to full supply management control. These alternatives are:

- free market through spot purchases and treaty arrangements between producer and processor
- marketing desk to match offerings and purchases
- various auction arrangements to handle all offerings and marketing of hogs
- pooling of sales proceeds from hog sales
- periodic price setting through producer/processor negotiations
- supply and price management in marketing hogs to processors.

Under the circumstances of the industry, the study team is in agreement that neither supply and price management, nor negotiated price setting, nor pooling of sales proceeds would be in the best interests of the entire B.C. industry. Such producer oriented hog marketing arrangements, we feel, might focus only on producer problems to the relative exclusion of the problems of other sectors of the pork industry. Experience with hog marketing boards in western Canada has shown that they have encountered serious difficulties in making their formal hog marketing systems work effectively. This has created a good deal of uncertainty for both producers and processors and has been a concern to all parties involved in the industry. The lesson to be learned from the marketing problems of other areas is that they can best be addressed only by full co-operation and prior discussion with all segments of the industry.

The other alternatives of providing an auction marketing system or a sales matching desk, we feel, are not warranted by the present size of the industry and the relatively small number of processors and major producers. As the industry increases in the number of major producers, the benefits of these alternatives could be considered further against the costs of providing the marketing service.

Experience in other western provinces has shown that producer oriented hog marketing schemes have built up heavy administrative staffs which are costly to the producer. There are over sixty employed by the Alberta Hog Marketing Board and over thirty-five employees employed by the Manitoba Hog Marketing Board. The administrative costs of such systems have to ultimately be paid by the producer. In developing our recommendations, we have taken care to limit the activities in B.C. so that the industry can avoid the establishment of similar costly systems and staff.

Any changes in the present marketing system should be introduced only after a full discussion with the producers, the processors, the retailers and representatives of the Ministry of Agriculture's marketing branch. The purpose of these discussions would be to determine the full implications of any change in the present marketing system and to assess the costs and benefits to all aspects of the industry.

Recommended Industry Steering Committee

Consequently, we are recommending the establishment of a Pork Industry Steering Committee, comprised of representatives of all segments of the industry. The Committee would have only limited powers to enable it to undertake three activities:

- gathering, assembling and dissemination of data of sales and prices
- co-ordination of assembling of hog shipments
- co-ordination of the development program of the pork industry.

The Committee should be funded only to the extent needed to carry out these activities. While future powers or assistance may be needed to assist the industry during periods of price or supply disruption, we firmly believe that producer supply management, and producer price setting schemes should be avoided.

Proposed Committee Activities

The first activity is the co-ordination of the plans to expand and develop the industry. This role should be undertaken by the Industry Committee, since the development will only come about through the efforts of all parties interested in the industry. The planning activities for the development of the industry will soon be of critical importance.

The second is the monitoring of the hog sales on a weekly basis. To do this the trading slips for all sales to inspected plants need to be forwarded to one organization to be checked, accumulated and the data disseminated in summary form to producers and processors.

The third is that the co-ordination of the hog transport facilities, especially from outlying areas of the province, should be introduced in order to reduce the hog transport costs to the producers in those areas.

Proposed Committee Organization

The proposed steering committee should represent the entire industry, and thus should constitute representatives of the producers, processors, retailers and

the Ministry of Agriculture. The problems to be faced by the Committee will be ones of industry co-ordination and planning involving a good understanding of the overall industry. To make the Committee most effective, we suggest that it be made up of not more than five to seven members. The Committee should include one or more members of the producers, the processors and retailers, as well as a representative of the Marketing Board and Economics Branch of the Ministry of Agriculture.

Some of the activities of the Committee, such as data gathering, etc., might be delegated to staff of the Swine Breeders Association.

We have set out three major activities for the commission initially. We foresee, however, that during a period of oversupply of hogs, which may occur for a period prior to the construction of a new slaughtering facility, the Committee may deem it necessary to obtain subsidies or levies to assist the industry during such periods of disruption. The approaches to be taken by the Committee would be determined by the circumstances in the industry at that time. We feel that any action taken by the Committee should be carefully developed to meet the needs of the entire industry.

We would see such a Committee being established under the Natural Products Marketing Act. If such a steering committee cannot be established under this Act because of any limitations in the Act, then we recommend changes be made to the Legislation to allow the formation of such an Industry Steering Committee.

Failing this, we recommend as an interim measure that if the producers proceed ahead to establish a producers' hog commission, they should appoint several of their members to an Industry Steering Committee. We recommend that they should also hold off on the exercise of any of the powers given to them under the Act until the Industry Steering Committee has had an opportunity to determine the full implications of any change in the present marketing system.

VI. STRATEGY FOR DEVELOPMENT OF THE B.C. PORK INDUSTRY

Earlier we indicated that there are significant opportunities to expand the B.C. pork industry. These opportunities can be enhanced if the Provincial Government is prepared to offer reasonable assistance and encouragement to producers and processors and all parties are prepared to work together to create a climate conducive to long term investment in the industry. Without a climate conducive to investment, we think the industry is unlikely to realize its development potential.

We have prepared specific recommendations to improve the industry climate, to provide assistance to producers and processors, and to obtain retailer co-operation for the encouragement of increased B.C. pork production. Our focus on improving the industry climate is based on our belief that one of the most important factors affecting investment decisions is confidence in the long term outlook for an industry. Before either producers or processors will invest in an industry, they require an environment which is conducive to stability and long term planning.

Industry Climate

The next several years will be a critical period for the development of the B.C. pork industry. The Ministry of Agriculture must determine to what extent it wishes to support the long run development of the industry and the cost which it is willing to bear in the short term. We assume that the Ministry will want to support the industry and will want to create a climate which is conducive to investment

and development. In order to do so, we recommend that the Ministry establish a program of short term and long term assistance for the development of the industry. This program should be specifically designed to encourage the establishment of new hog production facilities, and the expansion of existing facilities to efficient production levels. The program should also be designed to enlist the support of the processing and retail sectors, and to encourage the expansion of the slaughtering and processing sector.

Since the industry must continue to be competitive with pork producers and processors in other provinces and the mid-western U.S., all policies developed should be designed to encourage only the most efficient levels of operation for an individual hog producer or processor.

Government assistance to the industry should be co-ordinated through the Pork Industry Steering Committee. We believe that the creation of this body is necessary to assist in the co-ordination of the development plans of the industry, and to assure that the interests of all parties are considered in implementing the development plan. We have indicated that there will be a number of problems encountered in the expansion of the industry which will require the support, co-operation and goodwill of all parties involved in the industry. It is our opinion that the formation of a Pork Industry Steering Committee should help to avoid much of the confrontation which has developed between producers and processors in other provinces. It would also help the industry to quickly reach its development potential by creating an atmosphere of co-operation and planning within the industry.

In addition to the establishment of such an industry committee, we recommend that the Ministry of Agriculture provide increased recognition to the B.C. Swine Breeders Association as a voluntary organization representing B.C. hog

producers. This organization already represents most hog producers since membership in this organization is necessary for participation in the farm income assurance program. We believe that those hog producers who feel a need for an organization or association to represent their interests can accomplish this through participation in and support of the B.C. Swine Breeders Association. The Association in turn could appoint members representing the producers to the Industry Steering Committee.

The Pork Industry Steering Committee could initially delegate its data gathering activities to the staff of the Swine Breeders Association. To fund such activities, the Ministry could agree to provide a payment of twenty-five to fifty cents per hog for all B.C. hogs slaughtered by federally inspected processors. Assuming a federally inspected B.C. kill of 140,000 - 150,000 hogs in 1979, this would produce revenues to the Committee of between $35,000 to $75,000. If a fifty cent level of funding were provided, the Committee would have about $75,000 available to support its activities in 1979. This should be sufficient to allow the Committee to collect, organize and disseminate the data. Some of these funds could be passed to the Swine Breeders Association to establish its own office and to hire a swine specialist manager to assist the producers, and to promote the activities of the Association. These revenues could also be used to support producer education programs and to assist the co-ordination of hog production and transportation within the Province.

In order to improve the stability of the industry and to provide a climate conducive to long term planning, we recommend that the B.C. Markets Branch of the Ministry of Agriculture host semi-annual meetings of representatives of the industry. The purpose of these meetings would be to discuss problems of mutual concern and to improve co-operation between various sectors of the industry

including producers, processors, and retailers. Since the procesors do not have a B.C. industry association, these meetings could also help to bring the processors together.

The B.C. Markets Branch of the Ministry of Agriculture should be asked to work with local retailers and the Industry Steering Committee to promote the sale of B.C. pork and pork products. Retailers could be requested to label and feature fresh local pork as B.C. product and to label U.S.A. pork as imported product. In this way, it might be possible both at the consumer and retail level to encourage the purchase of B.C. pork products. The B.C. Markets Branch could also work with the processors and retailers to test and develop new pork products and to monitor demand at the retail level. This research could help to develop new markets for pork and pork products.

If B.C. hog production and pork supplies are rapidly increased, there could be periods of excessive price competition between various processors competing for additional market share in the retail market. Price cutting and discounting might be encouraged by the retailers in order to obtain market promotion specials. While such practices are normal in the industry an excessive amount of price discounting could cause all processors and many producers to operate at a loss for a period of time. Such a situation would not be desirable for the long term health of the industry. Thus the co-operation of the retailers and processors should be sought in avoiding it.

In addition to general measures to improve the industry climate, there are special measures which we believe the Ministry should consider to assist producers and processors.

Assistance to Producers

We recommend that the Ministry of Agriculture establish a policy objective to increase B.C. hog production from 100,000 to 400,000 hogs per annum by 1985.

In order to obtain that objective, we recommend that the Ministry use the Farm Income Assurance program and a program of low interest loans to encourage the start-up of new hog operations by at least one hundred new full-time hog producers, each managing a 100 to 160 sow, farrow to finish hog production unit. Existing producers, operating below this production level, should be encouraged to expand their operations up to a more efficient level of production. However, since there are only about forty farmers producing more than four hundred hogs per annum, expansion from this group will be limited. Thus any major increase in hog production will have to come from new hog producers.

The Ministry should encourage expansion to take place in existing producing areas. Concentration of the industry in the Fraser Valley and Okanagan areas would be desirable in order to reduce feed and freight costs and to enable the establishment of an efficient transportation system for shipping live hogs to market. Concentration of the industry should help to reduce the farmers feed cost by encouraging more feed mills to specialize in the sale of hog feeds, and to be more competitive in their feed pricing. Concentration of the industry will also encourage the establishment of adequate support services. Swine veterinarian specialists and farm equipment companies offering hog farming equipment are likely to locate in those areas with sufficient hog production to support a full time business. While we have indicated that production could also be encouraged in the Peace River area, the majority of production from this region would be more economically shipped to Alberta for processing. Thus it would not be available to support the local processing industry. Since the processing industry creates at

least one new job for every direct job created in hog farming, we believe that the Ministry should encourage increased production where it will also support the B.C. processing industry.

In order to encourage increased B.C. hog production, we recommend that the Ministry continue its support of the farm income assurance program for hog farming operations. The program should be based on a 100% indemnity in the shortfall of producer returns to production costs (based on the model farm unit) in order to encourage a maximum expansion of hog production, and should also be co-ordinated with plans to enlarge B.C. hog slaughtering capacity. The Ministry should also consider a program of financial support to assist in the start up of new full-time hog production facilities and to expand existing facilities. Consideration could be given to increasing the level of financial protection under the farm income assurance program to cover debt servicing costs on new or expanded farms during their first five years of operation. With this kind of income assurance in place, new producers would be encouraged to invest in the industry. In order to encourage a concentration of hog production, we recommend that this special program be made available only to full time hog producers establishing or expanding operations in designated areas of the Province. As further assistance to producers, consideration should be given to subsidizing the cost of environmental control equipment required by municipalities to reduce the problem of odour control in the spreading of hog manure waste, since the cost of hog manure storage and handling equipment do not contribute directly to the producers income. We understand that the Alberta Ministry of Agriculture is now paying 40% of the cost of pollution control equipment for Alberta hog producers, and a similar program could be adopted in B.C.

Since some municipalities actively discourage or even prohibit the establishment of new hog farms, the Ministry should consider measures to assist new producers to gain municipal approval for their construction. These measures could be developed around the Minimum Distance Separation Concept (MDS) which tries to reduce the land use conflicts which occur between agricultural and non-agricultural use of land.

The concept tries to protect both the rights of agricultural and non-agricultural users of land by preventing encroachment of one land use upon the other. It gives recognition to the fact that commercial agriculture within the Agricltural Land Reserve should be given adequate protection from non-farm users and that urban areas should be protected from the nuisances which may arise from handling animal wastes associated with livestock production.

The program works on a set of formulae which regulate the distance between livestock buildings and other non-farm users such as residential and industrial development. So far the concept, which was first adopted in Ontario, has only been used experimentally in B.C. in the municipality of Chilliwack since May of 1978. However, it appears to be working successfully to alleviate some of the problems involved in potential conflicting uses of land.

It appears that the minimum distance setback formulae could be used by municipalities, regional districts, agricultural advisors, and the Agricultural Land Commission as a guideline to review any application for a change in land use. We recommend that the Ministry of Agriculture promote the use of the MDS concept within other Government Departments involved in regional planning and within the municipalities, and regional districts affected by increased livestock production.

The Ministry of Agriculture could also help improve the climate for establishing new hog production units by working with the municipalities to try and

reduce the amount of zoning restrictions which are applied to land within the Agricultural Land Reserve. These zoning restrictions can effectively prevent land from being used for any income generating purpose by leaving it tied in the Agricultural Land Reserve while at the same time restricting its use for farming purposes. In order to avoid this conflict between municipal regulations and the policies of the Agricultural Land Commission it would be desireable to see the Agricultural Land Commission Act amended so that restrictive zoning within any Agricultural Land Reserve area would have to first receive the approval of the Agricultural Land Commission.

In order to provide education and advice to hog producers, encouragement should be given to the University of British Columbia and the Community Colleges in the agricultural regions of the province to offer programs of instruction in hog production management. The Engineering Branch of the Ministry of Agriculture should be asked to study the latest development in major hog producing areas and countries such as Holland, Denmark, and the mid-western United States in order to introduce the latest technology and facility designs to B.C. hog producers. As a result of their review the Agriculture Engineering Branch should update their 1976 publication on environmental guidelines for Swine producers in B.C. incorporating the latest developments in swine production technology and environmental guidelines for hog producers. One area requiring further study is on application rates of liquid animal wastes as a fertilizer substitute in crop production.

We understand that the Ministry of Agriculture is about to engage a consultant to study alternative sources of feed for swine production. Any recommendations arising from this study which result in lower feed costs to B.C. hog producers will improve their competitive position vis a vis Alberta hog producers.

The Ministry should encourage the Pork Industry Steering Committee or the B.C. Swine Breeders Association to establish a central information system to co-ordinate the assembly of information on hogs ready to go to market. Producers could indicate the number of hogs they would have available each week and the slaughterers would know where they could obtain hogs. This knowledge would help the producers to co-ordinate and combine shipments and would help the slaughterers to plan their staff requirements to match anticipated kill requirements.

By providing direct support to producers through the farm income assurance program and by working to reduce the amount of restrictive zoning inhibiting increased swine production the Ministry of Agriculture should help create a climate conducive to a rapid expansion of B.C. hog production. Such increased production will also help to create a climate which is conducive to an expansion of the processing sector.

Assistance to Processors

If the Ministry of Agriculture wishes to support a rapid expansion of hog production in B.C., it will be essential to have additional hog slaughtering facilities in B.C. by early 1981.

The major factor which will inhibit expansion of B.C. hog killing operations is the size of facility required. We have indicated that the minimum size for such a facility to be efficient should be a killing capacity of 125,000 to 250,000 hogs per annum. Such a facility could either be a "green carcass", kill and cut plant selling cuts to other processors for further processing, or a fully integrated processing plant carrying on a full line of further processing operations.

In order to encourage the establishment of such a plant, we recommend that the Ministry provide a minimum of one million dollars in financial assistance to any

qualified processing company which agrees to construct such a facility in the Province by 1981. The only restrictions which we would place on the plant is that it should have the equipment and capacity to handle a minimum of 200,000 hogs per annum, and that it would undertake measures in conjunction with the producers to bring about an increase in B.C. hog supplies. The availability of such a facility would help spur further expansion of hog production because hog producers would be assured of sufficient killing capacity to handle their expanded production.

We recognize that the start-up of a new hog killing plant will result in a substantial disruption of normal hog marketing patterns. To alleviate this, we recommend that the Ministry of Agriculture consider the subsidizing of freight costs to bring up to 100,000 hogs from Alberta, during the first year of operation and 50,000 in the second year for slaughter in the plant to augment the supply of B.C. hogs available for slaughter. The amount of any freight subsidy should be limited to the amount of the processors' net cost for hogs at his plant in excess of current local hog prices. The major portion of any government support for the processing industry should be directed to the construction of larger scale, efficient slaughter and processing facilities which could remain competitive in B.C. with other North American facilities.

Since it will take at least a year to plan the construction of a new slaughtering plant and to obtain the necessary governmental approvals it is imperative that planning efforts begin almost immediately if a new slaughtering plant is to be in place by 1981.

The initial stages of this planning process should be lead by discussions between the Ministry of Agriculture and various processors to determine what incentive they would require in order to construct a new slaughtering plant in B.C. These discussions should be carried out on a confidential basis between senior

officials in the Ministry of Agriculture and Economic Development and processors or other qualified parties who might be willing to build a suitable slaughtering facility. Arrangements should be made to support the establishment of whichever facility requires the least amount of funding after giving consideration to the size and type of plant to be built and jobs to be created.

The Pork Industry Steering Committee should be kept advised of the general state of these negotiations but no full disclosure of these negotiations should be made until the Government has signed an agreement with one of the parties. The plans for expansion of the industry should be lead by the Pork Industry Steering Committee with the assistance of the Ministry of Agriculture. The plans for expansion of hog production in B.C. beyond the 200,000 hogs per year level should be carefully co-ordinated to coincide with the start up of additional slaughtering facilities.

Concurrent with the planning for additional slaughter facilities the Ministry of Agriculture and the Ministry for Economic Development should begin discussions with Japanese trading companies and other interests to assist in the development of export contracts for pork and pork products. These discussions should be carried out in conjunction with the Pork Industry Steering Committee so that producers, slaughterers, and processors can work together in planning ways to profitably satisfy the export market potential.

Costs and Risks to Government

The major financial risks to the Government in supporting an expansion of hog production in B.C. would be the following:

1. Increased costs to support the swine producers farm income assurance program.

2. Costs of support to encourage the establishment of new hog slaughtering facilities in B.C.

3. Special subsidization costs to help alleviate short term problems in the growth of the industry (i.e. subsidizing the cost of freight out or in to offset temporary problems of hog surpluses or shortages caused by the growth of the industry).

4. Capital costs associated with encouraging an expansion of hog production in B.C. including capital grants to producers to subsidize the cost of environmental control equipment.

5. Minor development costs to help establish the Pork Industry Steering Committee.

6. Costs associated with administrative and legislative support for developing and maintaining programs to expand the industry.

The most significant of these costs would be the risk of having to provide major financial support under the farm income assurance program if producer prices fell below the cost of production.

We have shown that a B.C. hog producer locating in the Lower Mainland or Thompson Okanagan areas can be competitive with a new producer in Alberta, but we have also recognized that the new producer's cost of production will be higher than the average of all producers in the industry (because of the higher capital cost of land, buildings, equipment and finance costs associated with new construction). Thus, in the short run (for a period of 3 to 5 years) producers' production costs might well be in excess of their returns.

Assuming the averaged dressed weight of a hog carcass is 165 - 170 lbs., new producers would face a financial operating loss of $1.65 to $1.70 per hog for every one cent drop in the producer hog price (which is currently around 65¢ per pound) below their cost of production.

If the Ministry was successful in encouraging hog producers to expand production by 100,000 hogs and the price received for these hogs averaged 10¢ per pound below the cost of production, the loss to the industry would be about $1.65 - $1.7 million dollars per 100,000 hogs per annum. All or a portion of this cost might be borne by the Government under the farm income assurance program. While we cannot predict what loss, if any, will occur, we feel that it is highly unlikely that any loss would exceed 10¢ per pound for any period of more than several years.

The cost of support to encourage the establishment of new hog slaughtering facilities in B.C. might work out to about $250,000 per annum if amortized over a ten year period. The cost of special subsidization to help alleviate short term development problems in the industry might work out to about $50,000 per annum if amortized over the same period of time.

There is no current system in place of which we are aware to allow the ARDSA program to fund the capital cost of farm equipment or environmental control equipment. However, if such a program were in place, and 100 percent of producers' pollution control equipment costs were subsidized, the initial cost of such equipment would be about $2.0 million to equip facilities for the production of 100,000 hogs per annum. This cost, amortized over a ten year period would work out to about $200,000 per annum.

The development costs to establish and operate the programs necessary to expand the industry and to fund the activities of the Pork Industry Steering Committee should cost less than $100,000 per annum.

Thus, under fairly pessimistic assumptions the cost to the industry in expanding production by an additional 100,000 hogs would be about $2.3 million annually. Offsetting this cost, would be the additional value added within B.C. by this increase in B.C. production, slaughtering and processing activity of about $3.0

million per annum. Since even under fairly pessimistic assumptions this activity would proide a small net benefit to the B.C. economy, we think that an expansion of the industry should be supported.

Conclusion

While there are a number of short term problems to be overcome, we think the opportunities for expansion of the B.C. pork industry are very encouraging. We recommend that the producers, processors, and Ministry of Agriculture staff join together to establish a Pork Industry Steering Committee as detailed in our report. This Committee, in conjunction with the Ministry of Agriculture, should implement a five year development program to achieve an expansion of B.C. hog production to the 400,000 to 500,000 hogs per year level.

While we recognize that each aspect of the industry operations may not be profitable over each of the next several years, we believe that the long term outlook is very favourable to a substantial increase in B.C. hog production, on a profitable basis.

We therefore recommend that the Ministry of Agriculture develop the short term programs to support the industry and to start up new producer operations. We believe these operations should be established as soon as possible to bring stability to the industry and to strengthen the local pork processing industry. Once B.C. hog production has reached the 400,000 to 500,000 hogs per year level, the industry should be capable of supporting its further expansion.

Appendix A

CANADIAN BIO RESOURCES CONSULTANTS LTD.

PRIMARY RESOURCE SCIENCES, MANAGEMENT & ENGINEERING

February, 1978

To: B.C. Hog Producer

Dear Hog Producer:

Attached please find a copy of an Information Request Sheet in regards to information you required for the B.C. Hog Industry Study being conducted by our firm. We would ask for your co-operation in compiling this information and returning it to us as soon as possible, using the enclosd self-addressed envelope.

This information will be kept in strict confidence and will be part of the study that will hopefully improve the swine industry in B.C.

For any producers who receive this request but are not producing hogs at the present time, we would appreciate receiving information for those years, listing on the form that you were producing hogs and a brief note as to why you quit producing hogs.

Your co-operation is appreciated.

Yours truly,

J.T.R. Husdon, Study Manager

JTRH:mw
attach.

B.C. HOG INDUSTRY STUDY

INFORMATION REQUEST SHEET

Producer's Name _____ Age ____

Is hog production your main source of income? Yes ____ No ____

If No, please check other source of income

Dairying ____ Poultry ____ Off-Farm ____

Beef ____ Field Crops ____

Are you presently producing to the full extent of your facilities? Yes ____ No ____

If No, what expansion could you achieve without constructing further facilities:

Sow herd increase, Number ____

Finishing Pig increase, Number/year ____

Do you have plans for expansion Yes ____ No ____

If Yes, sow herd increase, Number ____

finishing pig increase, Number/year ____

What are the major problems associated with your operation? Please comment.

Marketing _____

_____

_____

Transportation _____

_____

Waste Disposal _____

_____

Adequate Return _____

_____

Please comment on the importance of Income Assurance to your operation.

_____

_____

B.C. HOG INDUSTRY STUDY

Information Request Sheet

PRODUCER'S NAME _____

ADDRESS _____ PHONE NUMBER _____

	Number of Pigs Sold		Pigs Sold To		Feed Supply		
Year	Weaners	Finished	Producer's Location Weaner Pigs	Plant Name	Local	Not Local	Other
1973							
1974							
1975							
1976							
1977							

Appendix A

Appendix B

B.C. ABATTOIRS

A. **Full Federal Inspection** (5)

Borsato Meat Ltd.	Langley
Coastpac Meat Ltd.*	Abbotsford
Intercontinental Packers Ltd.	Vancouver
Lawrence Meat Packers Ltd.	Dawson Creek
Richmond Packing Ltd.*	Richmond

B. **Domestic Inspection** (7)

Island Meat Packers Ltd.	Victoria
J & L Meats Co. Ltd.*	Surrey
E. Johnston Packers Ltd.*	Sardis
Kohler's European Sausage Ltd.	Aldergrove
Scott's Meats Limited*	Agassiz
Hertel Meats	Port Alberni

C. **Non-Inspected***

Fraser Valley - Langley, Abbotsford, etc.	8
Duncan	6
Courtenay	3
Chemainus	2
Creston	3
Salmon Arm	3
Fort St. John	2
Kelowna	2
Oliver	2
Black Creek	2
Vernon	2
Others (including Smithers, Enderby, Vanderhoof, Nanaimo, Kamloops, Merritt, 100 Mile House, Williams Lake, etc.	17
	52

*These firms specialize in beef, veal and lamb slaughter and are not involved in hog slaughtering and processing.

**None of these small non-inspected abattoirs account for a significant volume of hog slaughter.

Appendix C

INTERVIEWS OUTSIDE B.C.

(R. Towsley[1] and R. James[2])

Manitoba Hog Marketing Board

Agriculture Canada -
Livestock Production & Marketing Branch
Food System Branch

University of Guelph -
Dr. L. Martins, Agricultural Economist

Ontario Pork Producer Marketing Board

Meat Packers Council of Canada, Ontario & Alberta Officials

Union Provinciale Agricole, Montreal

J.P. Vermette Swine Farm, St. Simon, Quebec

Ralston Purina, Longuiez, Quebec

Saillison Olympia Ltee. Processing Plant, St. Simon, Quebec

H. St. Jean Et Fils Processing Plant, St. Hyacinthe, Quebec

Quebec Department of Agriculture, Marketing Branch

Oscar Mayer Plant, Perry, Iowa

University of Iowa, Dr. M. Skadberg, Agricultural Economist

Farmland Foods, Inc. Co-Op Processing Plant, Dennison, Iowa

Alberta Hog Marketing Board

(1) Foodwest Consultants Ltd.

(2) Canadian Bio-Resources Ltd.

APPENDIX D

BRITISH COLUMBIA

SWINE BREEDING STOCK SITUATION

A Report By:

J.T.R. Husdon, P.Ag.
M.D. Ingram, P.Ag.
R.G. Towsley

February, 1979

SUMMARY

The information on carcass gradings shows that British Columbia produces hogs that are of a higher quality than those produced in other Western Canadian provinces. However, this information does not reflect differences that may exist in feeding programs or growth rate of pigs. Considerable effort is being put forward by governments and producers in competing regions on improvements in swine breeding stock. Therefore, it is important that this apparent carcass quality advantage does not diminish the attention that should be paid toward swine breeding stock improvement programs if British Columbia is to remain in a competitive position with other regions.

The expanding hog industry in British Columbia requires large numbers of breeding stock to meet the requirements for new operations and replacements for existing operations. It is estimated that the industry will require approximately 3,000 gilts and 130 boars to meet the replacement requirements during 1979. In addition both gilts and boars will be required for new operations that commence operation. Although British Columbia has a relatively small population the availability of breeding stock compares favourably with the three prairie provinces. Of the three major breeding stock companies in Western Canada two have their headquarters and main operations in British Columbia. However, there are only a few purebred breeders in the province compared to the other western Canadian provinces which is a constraint on the availability of proven, high quality boars.

The breeding stock companies are the major source of animals for new operations. However, a survey of British Columbia producers and an examination of the total requirements for replacement stock indicates that the majority of the producers select replacements from within their own herds. If this selection is to be done effectively producers must have a proven breeding stock development and selection program.

The swine R.O.P. program which is jointly sponsored by the British Columbia Ministry of Agriculture and Agriculture Canada provides an excellent tool whereby producers can identify outstanding breeding stock animals and improve the performance of their herds. This program is only used to a very limited extent in British Columbia which indicates that producers in this province are generally not taking advantage of the opportunities available to improve hog production performance. In many instances producers, following an initial examination, disregard the program since they feel that the amount of work involved does not justify the apparent benefit. There are examples in British Columbia where producers have been persuaded to use the R.O.P. program and through careful supervision by British Columbia Ministry of Agriculture personnel have obtained results that convinced them of its benefit and as a result they have continued to use the program.

Therefore, it is evident that "on farm" promotion is required if R.O.P. improvement programs are to be established in British Columbia. This involves a Ministry of Agriculture person working with the producer to set up the basic record keeping, a numbering system for the hogs produced and assisting him during the initial stages. Once the producer is involved in the program and can see the benefits it is expected that the role of government personnel would be minimal.

The establishment of the R.O.P. program would also enable producers to compare the quality of breeding stock offered by the various breeding stock companies. It would also provide a basis for the expansion of the breeding stock industry through the entry of new producers.

As part of this overall breeding stock improvement program the establishment of a swine herd health program patterned on the Alberta program would be very useful. It would allow producers direct access to the R.O.P. test station in Alberta and provide a basis for comparing the herd health status of breeding stock supplies.

At the present time the export of breeding stock is carried out by some of the breeding stock companies on their own initiative. The establishment of recognized R.O.P. and herd health programs and a coordinated promotion effort by government agencies could no doubt increase the level of sales. However, at the present time this is not a major priority because of the demand for breeding stock within the British Columbia hog industry.

The recommendations of the study team were as follows:

1. The British Columbia Ministry of Agriculture should actively promote the use of the R.O.P. swine breeding stock improvement program for producers who wish to raise their own replacements and by breeding stock companies.

2. The British Columbia Ministry of Agriculture should appoint a swine specialist who would have as one responsibility the promotion at the farm level of the R.O.P. swine breeding stock improvement programs.

3. That the British Columbia Ministry of Agriculture reinstate and increase the levels of rebates available under the former boar purchase program. The exact level of these rebates should be recommended by the Provincial R.O.P. Committee and should be substantial enough to provide a proper incentive to producers to purchase performance tested boars. This program could be short term in nature (up to three years) on the basis that once producers become familiar with the value of performance tested boars the program will no longer be required.

4. That the British Columbia Ministry of Agriculture through the Veterinary Branch initiate a swine herd health program for producers in British Columbia.

5. That the British Columbia Ministry of Agriculture establish a working committee comprising of members of the British Columbia Swine Breeders Association and representatives of the appropriate departments within the Ministries of Agriculture and Economic Development to initiate an export development and enhancement program for swine breeding stock produced in British Columbia.

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CHAPTER 1

INTRODUCTION

The study team of Canadian Bio Resources Consultants Ltd., Robin Smith Consultants Ltd., and Woods, Gordon & Company were selected to conduct a study on the pork industry in British Columbia. During the initial stages of this study the ARDSA management committee identified the need for a supplementary study on the present status of livestock improvement in regards to the hog industry in British Columbia, and the opportunities for improvement within this area of the industry. Canadian Bio Resources Consultants were selected to carry out the supplementary study and to prepare a report on this area that was to be submitted as a separate report from the overall pork industry study.

Livestock improvement through such methods as record of performance testing on farm and purchase of performance tested boars is an important aspect in the improvement of production performance in the hog industry. Throughout North America governments and producers alike are involved in a multitude of programs to achieve livestock improvement and if the British Columbia industry is to

remain in a competitive position producers in this province must be involved in livestock improvement programs. During the past five years there has been an increasing sophistication in hog production in Western Canada. In the past prairie farmers have generally fed hogs as a means of marketing excess grain, particularly during times of low grain prices. However, with the high cost of modern facilities that are now the norm within the industry, hog producers are now forced to commit themselves to continuous production. With this large investment in production facilities the producer must ensure that the hogs he raises are capable of producing maximum profits.

The major characteristics that govern the production efficiency of a hog are feed conversion, growth rate and carcass quality at time of slaughter. These characteristics are highly heritable and modern producers can capitalize on this heritability by identifying superior replacement animals from within their own herd or by purchasing superior animals from other producers based on performance testing.

The testing of swine in Canada to identify outstanding animals started in 1928 with the inauguration of the advanced registry policy for purebred swine and the appointment of an advanced registry board as an advisory body to the Canada Department of Agriculture. The advanced registry board established qualifying standards and regulations in regard to the advanced registry policy which were accepted and approved by the Department of Agriculture. The testing of performance quality in swine received encouraging support from swine breeders throughout the country and in 1935 the Canada Department of Agriculture initiated the construction of test stations across Canada for the testing of purebred pigs. These test stations allowed the pigs to be tested under similar conditions so that comparisons could be made on a national basis.

The majority of the hogs slaughtered in British Columbia are graded under the Canada Agriculture Products Standard Act. Under this grading system two physical measurements are made of the hog carcass which provides an indication of the lean content of the carcass. Using 100 as the base, carcasses are assigned an index above or below the base and are paid a premium by using the index as a percentage of the market price.

A comparison of the index of hogs graded in British Columbia, Alberta, Saskatchewan, and Manitoba is shown in Table 1.1. This table shows that British Columbia produced hogs have graded consistently better than hogs produced in the prairie provinces. On first examination this would indicate that British Columbia breeding stock is of higher quality than that produced in other Western Canadian provinces. However, in examining these figures the type of feeding program used must be considered since this will influence carcass quality. In the prairies feed prices are lower than in British Columbia and as a result producers there have generally not been as concerned with controlling feed input to growing hogs to optimize production. In British Columbia with high priced feed most producers limit feed to their hogs to obtain optimum feeding efficiences which results in improved carcass quality. As a result persons concerned with the production of hogs in British Columbia should not be complacent in regards to livestock improvement programs on the basis of these carcass index comparisons since they may not represent the actual situation or the future situation.

This report examines the present programs available for livestock improvement within the hog industry in British Columbia and opportunities for enhancement of these programs. Also examined are sources and supply of hog breeding stock and the associated opportunities and constraints.

TABLE 1.1

WESTERN CANADIAN PROVINCIAL TRENDS IN CARCASS INDEX[1]

% of indexed carcasses indexing 102 or above

	B.C.	ALTA.	SASK.	MAN.
1973	68.8	58.1	54.7	47.2
1974	75.4	64.3	57.8	54.7
1975	78.0	64.0	63.8	57.8
1976	76.0	67.7	67.4	60.8
1977	80.8	69.3	60.8	60.5

% of indixed carcasses indexing below 100

	B.C.	ALTA.	SASK.	MAN.
1973	16.2	24.6	27.6	33.0
1974	11.8	20.1	25.0	26.7
1975	10.0	19.7	20.4	24.0
1976	11.4	17.9	17.6	21.4
1977	9.0	17.2	22.7	21.9

Source: Competitive Position of the Canadian Pork Industry, H. Fredeen.

[1] Based on number of pigs indexed at inspected establishments within each province.

SCOPE AND OBJECTIVES

This study was undertaken with the following specific objectives in mind:

- to determine the present quality situation of B.C. produced hogs;
- to determine and describe the major sources of hog breeding stock in Western Canada;
- to determine and describe sources of hog breeding stock for British Columbia producers;
- to examine government sponsored hog breeding stock improvement programs in affect in Western Canada;
- to recommend the role of the British Columbia Ministry of Agriculture in improvement programs for hog breeding stock in British Columbia.

METHODS

The examination of livestock improvement opportunities in British Columbia involved a review of pertinent literature and comprehensive interviews with government personnel, and producer representatives in British Columbia and other provinces of Western Canada.

CHAPTER 2

LIVESTOCK IMPROVEMENT PROGRAMS

Livestock improvement programs in Western Canada are for the most part conducted under the Federal-Provincial Record of Performance swine program. These Record of Performance or R.O.P. programs are jointly administered in each province by the Federal and Provincial Departments of Agriculture.

Under the swine improvement program producers can performance test boars at government Record of Performance Test Stations or they can home test the performance of boars and gilts on their own farms.

Record of Performance Test Stations

The Federal Government operates eight Record of Performance Swine Test Stations, usually referred to as R.O.P. Test Stations, throughout Canada with Western Canada stations located in Manitoba, Alberta and Saskatchewan. In Alberta there are two swine testing stations with the most recent one being constructed in connection with the artificial insemination centre near Edmonton. At the

time that the second station in Alberta was constructed it was recognized that this station should be located in British Columbia since no facilities were available in this province. However, because of the larger hog population in Alberta it was decided to construct the facility in that province but to allow British Columbia producers to have full access. The Federal Government in fact provides a freight assistance program to assist producers to place pigs on test in this station. However, British Columbia producers are at a disadvantage in terms of using this facility because of the physical constraints concerned with moving pigs long distances to the facility and the herd health restrictions that are placed on pigs entering the facility.

The Veterinary Services Division of the Alberta Department of Agriculture administers a herd health program for hog producers in that province. Since herd health has a direct effect on herd efficiency it is extremely important that both the breeding stock producer and the commercial producer maintain the highest possible standards of herd health. Under this program four unannounced clinical inspections of the herd are made every year by an Alberta Department of Agriculture veterinarian or a private veterinary practitioner contracted by the Alberta Department of Agriculture. Heads and lungs of slaughter pigs are also examined periodically as a check for respiratory diseases. All herds using the Alberta R.O.P. Test Station must be enrolled in the Alberta swine herd health program or receive special waiver of this requirement by the R.O.P. Committee.

Similar programs are in effect in both Alberta and Saskatchewan but in British Columbia producers must institute such a program at their own expense. This herd health requirement has been a major obstacle to the entry of British Columbia producers into the R.O.P. Test Station in Alberta.

Under station testing the emphasis is on boar performance testing and due to space limitations sire progeny tests are carried out only on a limited basis.

In addition to the government R.O.P. Test Stations some of the major breeding stock companies carry out comprehensive testing programs. In British Columbia a major company has recently installed a private testing facility that can performance test boars and progeny to the same standards as the R.O.P. Test Stations. At the present time this facility serves the needs of two British Columbia purebred herds.

Boar Performance Test

Individual boars are tested to determine their comparative merit. The test commences when a group of boars (two to four) reach the approximate average weight of 30 kg and concludes when the group reaches the approximate average weight of 90 kg. The performance test for boars provides the following data:

a) adjusted back fat to 90 kg live weight,
b) adjusted age to 90 kg live weight,
c) average daily gain on test,
d) feed consumed per kg of live weight.

In addition to the performance test the boars must meet a required performance standard, which is determined by the Provincial R.O.P. Swine Committee, that ensures that they are of good type and free of physical defects. Any boars not meeting these requirements are slaughtered.

Sire Progeny Test

The sire progeny tests involve the testing of two market pigs from each of four dams all from the same sire. These market pigs may be female or castrated males. The test commences after the pigs have reached approximately 30 kg and continues through to 90 kg live weight. The traits that are assessed are as follows:

a) adjusted age to slaughter,

b) feed consumed per kg live weight,

c) carcasses evaluation including market index.

All measurements are corrected for sex and weight and performance information is issued quarterly for the sows and boars that are involved in the sire progeny test.

Home Herd Testing

Home herd testing involves the weighing and ultrasonic measurement of back fat of all potential breeding stock produced by the participating breeder. This program is jointly administered by the Federal and Provincial Departments of Agriculture and involves regular visits to producers' farms to carry out the weighing and ultrasonic measurement of the pigs entered in this program.

The program is standarized across Canada and every province is participating. The traits evaluated are:

a) adjusted back fat to 90 kg live weight,

b) adjusted age to 90 kg live weight.

Agriculture Canada provides the participating producers with herd summary reports which supply the following test data and averages:

a) averages by litter for all animals weighed and probed by sire and dam and by breed,

b) up-dated sire averages by breed listing the number of progenies tested and their averages,

c) herd averages of all animals tested during the three month period.

1977 Testing Activity

In 1977, 3,239 boars (6.4 percent increase over 1976) completed test at the R.O.P. Test Stations across Canada. In addition, 45,572 animals (33.7 percent increase over 1976) were tested under the home herd test program. The animals tested under home herd test involved 15,069 boars and 30,503 gilts. A summary of testing both at home and station tests for 1977 by province is shown in Table 2.1.

An examination of Table 2.1 indicates that considering relative hog population size British Columbia participation in R.O.P. was quite high compared to Alberta. The sow population in Alberta is approximately 14 times greater than British Columbia yet Alberta only tested three to four times as many pigs. However, there were only seven British Columbia participants in the R.O.P. program compared to 57 from Alberta. This indicates that the program is not widely used throughout the B.C. industry.

British Columbia Enhancement Programs

To promote the use of swine performance testing the British Columbia

TABLE 2.1

SUMMARY OF TESTING BY PROVINCE - HOME TEST AND STATION TEST 1977

Province	NUMBER OF BREEDERS		TOTAL PIGS TESTED		PIGS TESTED PER BREEDER		TOTAL BREEDERS TESTING	PERCENT OF BREEDERS STATION TESTING
	H/T[1]	S[2]	H/T	S	H/T	S		
Prince Edward Island	20	4	850	31	43	8	20	20.0
Nova Scotia	22	14	3417	232	155	17	23	60.8
New Brunswick	7	0	676	0	97	0	7	0.0
Quebec	75	37	8559	523	114	14	75	49.3
Ontario	128	75	15905	1062	124	14	131	57.2
Manitoba	42	28	4327	252	103	9	45	62.2
Saskatchewan	36	30	3518	476	98	16	42	71.4
Alberta	57	30	5588	561	98	19	60	50.0
British Columbia	7	2	1710	102	244	51	7	28.5
Newfoundland	2	0	1014	0	507	0	2	0.0
CANADA	396	220	45564	3239	115	15	412	53.3

SOURCE: Canadian R.O.P. Annual Report

[1] H/T - Home Test [2] S - Station Test

Ministry of Agriculture has initiated two programs:

1) Scale Purchase Program - the Ministry will rebate 20 percent of the purchase price (to a maximum of $140.00) on the purchase of livestock scales that are used by producers to carry out performance selection work.

2) Boar Purchase - the Ministry will rebate a portion of the purchase price of high quality performance-tested purebred boars. Under this program producers who purchase R.O.P. Station Tested boars of a specified quality are eligible for a rebate of $50.00 and $30.00 for specified quality boars from Home Test. In addition the producer is eligible for transportation assistance up to maximum of $50.00 for transporting a boar from point of sale to his farm.

   To be eligible for this program:

   - Station Tested boars must have a recognized station index of 110 or better.
   - Herd Tested boars must have an index of 110 or more calculated on the basis of backfat and days of age to 90 kg.

NOTE: On December 31, 1978 the boar policy program was terminated on the recommendation of the B.C. Swine Record of Performance Advisory Committee. The rationale for this recommendation was that the Committee felt that the resources of the Ministry would be more usefully spent in development of the Record of Performance Program.

CHAPTER 3

WESTERN CANADA BREEDING STOCK SOURCES

BREEDING STOCK SOURCES

There are a number of methods for establishing and maintaining a production breeding herd:

1. The purchase of gilts, sows and boars at livestock shows, and auctions.
2. The retention of home raised gilts and the purchase of boars from government sponsored R.O.P. test stations.
3. Purchase of gilts, sows and boars from either private individuals or breeding stock companies.
4. The use of artificial insemination and the retention of home raised gilts and/or boars.

Each of the above methods have their advantages and disadvantages, and producers use them according to their personal preferences. Since up to one-third of the sow herd must be replaced every year,

the producer must be sure of a constant supply either from his own herd or from another source.

Most producers today use cross-breeding in order to optimize production through the use of hybrid vigour. Most commonly, a cross-bred female (two or three-way cross) is bred to a purebred boar. In order to raise and select his own replacement gilts, the producers must maintain good records. If he wishes to maintain hybrid vigour, he will have to keep a small purebred nucleus herd within his larger herd. This is time consuming but does save the premiums that swine breeders charge for their stock. Some producers are doing this successfully in Western Canada, and others have found it difficult to maintain their sow inventory and have reverted to purchasing gilts to fulfill all or part of their replacement requirements. Boars are nearly always purchased from specialized breeding stock producers.

Swine Show Sales

There are several swine show sales across the prairies every year. A majority of the participants in these sales are purebred breeders and these sales provide a source of gilts, sows and boars for the commercial producer. In Alberta, for instance, there are sales in Edmonton, Calgary and at the Alberta Pork Congress in Red Deer. British Columbia has no show sales, although boars and sows are sold at livestock auctions throughout the province. However, this latter source is unreliable in relation to supply, disease control and quality.

R.O.P. Test Station Boars

These stations are an excellent source of performance tested boars for the pork producer. These boars are sold by auction regularly

throughout the year. In 1977 the Canadian R.O.P. Test Stations sold a total of 804 boars for an average price of $487.46.

The sales of boars out of R.O.P. Test Stations in the prairie provinces is shown in Table 3.1.

Breeding Stock Farms & Companies

A major source of gilts and boars are the breeding stock farms and companies. This is particularly so with those producers starting production or planning a major expansion. At present, premiums for "commercial" production gilts vary anywhere from $20.00 to $80.00 over slaughter market value depending upon the quality of the pig and the vendors involved. Purebred boars fetch a higher premium still, which is demonstrated by the average price of $418.00 for boars sold out of the Edmonton R.O.P. Test Station in 1977.

Over the past 10 years there has been a very definite trend towards the purchase of sow replacements rather than home production. There has been a corresponding rapid increase in the number of individuals and companies that are active in the breeding stock business. Three companies with operations in British Columbia and Alberta have the capability of marketing in excess of 8,000 gilts per annum. It is also estimated that the balance of breeding stock farms in British Columbia and Alberta could supply an additional 6,000 gilts. It should be noted that a considerable number of these gilts are sold in Saskatchewan and Manitoba which reduces the supply to British Columbia and Alberta.

Artificial Insemination

Artificial insemination, either fresh or frozen is an excellent

TABLE 3.1

STATION TESTED BOAR SALES 1977
ALBERTA, SASKATCHEWAN AND MANITOBA

	MANITOBA	SASKATCHEWAN	ALBERTA
Yorkshire	16	56	162
Landrace	1	3	8
Lacombe	1	12	21
Duroc Jersey	15	15	22
Hampshire	-	-	5
Crossbred	-	-	4
Berkshire	1	-	-
TOTAL	34	86	222
AVERAGE PRICE	$402.79	$471.63	$418.49

source for new blood lines within a herd. Frozen semen is available from a commercial enterprise in Ontario, and has been used by a least two purebred breeders in British Columbia. Fresh semen, although not produced in British Columbia, is available from the Artificial Insemination Station at Nisku, Alberta. This station has only just come into operation, but should be capable of producing semen from a wide selection of boars in the near future. Fresh semen must be used within three days, and therefore could present a logistical problem for British Columbia producers.

BREEDING STOCK REQUIREMENTS AND AVAILABILITY

Requirements for Breeding Stock in Western Canada

To calculate breeding stock requirements in Western Canada, sow population figures were taken from the 1976 Agricultural Census of Canada. It was assumed that in order to maintain stable herd numbers, one-third of the sow herd would have to be replaced per annum due to non-breeding gilts, unproductive sows, age and mortality. It was also assumed that one boar would be required for every 30 sows, and the former would have a herd life of 2½ years.

These figures are shown in Table 3.2 and the total sow replacement requirements for British Columbia and Alberta in 1976 were estimated at 30,860 animals, and the boar requirement was estimated at 1,235 animals.

From Table 3.2 it can be seen that estimated annual sow replacement requirements in Alberta and British Columbia are in excess of 30,000 and thus is can be deduced that over 50 percent of sow replacements are home produced since sow replacement from "off farm" sources, as noted earlier, are estimated at approximately 14,000 head.

With assistance of the British Columbia Swine Breeders Association a survey was made of a representative number of British Columbia

TABLE 3.2

1976 SOW POPULATION[1] AND CORRESPONDING BREEDING STOCK REQUIREMENTS

WESTERN CANADA

	MANITOBA	SASKATCHEWAN	ALBERTA	B.C.	TOTAL
Sow population	64,075	51,271	86,222	6,356	207,924
Estimated sow replacements required per annum	21,358	17,090	28,741	2,119	69,308
Estimated boar population	2,136	1,709	2,874	212	6,931
Estimated boar replacements required per annum	854	684	1,150	85	2,773

[1] Statistical Source
1976 Census of Canada: Agriculture

sow herds. Of the 56 herds surveyed, with an average herd size of 70 sows, 18 purchased replacement breeding stock from outside sources. Without an extensive study in the prairie provinces it is impossible to estimate how the above ratio in British Columbia compares with those three provinces. It is apparent however that a majority of British Columbia producers raise their own replacement gilts and the major demand for "off farm" produced gilts is in the establishment of new herds.

Sources of Breeding Stock in British Columbia

Despite the relatively low hog population in British Columbia, the availability of breeding stock compares favourably with the three prairie provinces. Although there are few purebred breeders in the province, two of the major breeding stock companies, namely Cargill Ltd. and R & H Farms Ltd. have their production units in the Fraser Valley. It is estimated that these two companies have the capability to produce over 6,000 gilts per annum. In addition, Pig Improvement Canada Ltd., who are also a major breeding stock company, has established a multiplier herd in British Columbia which will increase the supply.

Historically the majority of the gilts produced by these breeding stock companies have been shipped to the prairies with some to the United States and other export locations. Export sales have been made by Cargill Ltd. to the Phillipines and by R & H Farms Ltd. to Hong Kong.

The purchase of breeding stock from these sources and other breeding stock farms can vary according to conditions in the hog market. When market prices and profits are high there is a heavy demand for breeding stock due to expansion. In times of low market prices there is a tendance on the part of producers to revert to the system of on-farm replacement of breeding stock.

Although a majority of replacement gilts are home produced, most producers purchase their boar requirements from outside sources.

TABLE 3.3

NUMBERS AND BREEDS OF BOARS HOME TEST IN ALBERTA AND BRITISH COLUMBIA 1977

	ALBERTA	BRITISH COLUMBIA
Yorkshire	1,197	93
Landrace	89	--
Lacombe	220	8
Hampshire	22	--
Duroc	155	116
Commercial	81	13
Chester White	2	--
TOTAL	1,766	230
Number of Breeders Testing	57	7

Source: Federal/Provincial Record Performance of Swine 1977.

These boars must come from either:

a) purebred and crossbred boar producers, or
b) auction markets, or
c) R.O.P. Test Stations, or
d) artificial insemination.

There are, at present, only four operations in British Columbia that are actively selling boars, and it appears that there is a strong demand for healthy performance tested boars.

Most breeders who are actively selling boars are enrolled in the Federal/Provincial R.O.P. home testing program. In order to compare the availability of boars in British Columbia in relation to Alberta see Table 3.3. This table lists the number and type of boars home tested in British Columbia and Alberta for the year 1977.

It should be noted that over one-half of the boars home tested in British Columbia were raised by one producer. Many of these boars are shipped for sale outside of the province to the prairie provinces or the United States and other export locations.

British Columbia producers who wish to purchase boars from an R.O.P. Test Station must travel to Alberta and with the distances involved, it is unlikely that this will occur very often. However, there is no data available to indicate how many station tested boars are purchased by British Columbia producers.

Summary of Breeding Stock Availability in British Columbia

The availability of start-up and replacement gilts from breeding stock companies compares favourably with the situation for the

prairies. However, there are very few purebred breeders in British Columbia compared to Alberta. An indication of this is that in 1977, Alberta had 57 breeders on the R.O.P. Home Test Program whereas British Columbia only had seven.

Due to the relatively low pig population in British Columbia, the availability of sound breeding stock at public sales and shows is low.

As discussed previously 70 percent of British Columbia producers raise their own gilts, and if this is to be done successfully, there must be a good source and supply of boars. There is an extreme shortage of good quality boars produced in British Columbia and in addition to this, a British Columbia producer must travel to Alberta in order to purchase boars from an R.O.P. Test Station.

Although artificial insemination is a good source of new blood lines for a herd, low conception rates and inconvenience can make it too expensive for the commercial producer.

CHAPTER 4

DISCUSSION

On the basis of carcass grading information hogs produced in British Columbia would appear to be of a higher quality than those produced in other Western Canadian provinces. However, when examining these figures differences in feeding programs and growth rate of the pigs involved must be considered since they can affect the carcass quality of market hogs. Producers in British Columbia must be aware that throughout the other provinces of Canada and the United States considerable effort is being put towards breeding stock improvement and if the British Columbia industry is to remain competitive it must be in a position to take advantage of breeding stock improvement programs.

At the present time the hog industry in British Columbia is undergoing considerable expansion. In 1978 the province produced approximately 100,000 hogs that were slaughtered in government inspected plants which represented an increase of over 23 percent compared to the 1977 total. Indications are that on the basis of the number of new producers who entered or are entering the business, the 1979 total production will be considerably higher and will probably be in the 150,000 head range. On the basis of this production level assuming

15 hogs marketed per sow and a 30 percent annual cull rate the British Columbia industry will need approximately 3,000 replacement gilts per year. Using the same production levels and assuming one boar for each 30 sows and a boar head life of 2½ years, the industry will require approximately 130 replacement boars per year.

In addition to this replacement demand for breeding stock the expansion that is occuring in British Columbia and throughout Western Canada is also creating a demand for breeding stock. As discussed in the previous chapters this theoretical demand for replacements and the demand from expansion exceeds the amount of breeding stock available from purebred breeders or breeding stock companies. As a result a large number of the replacement breeding stock will need to come from within the producers own herd. If producers are to obtain optimum production efficiences they will need to have a proven breeding stock development and selection program.

The swine R.O.P. program which is jointly sponsored by the British Columbia Ministry of Agriculture and Agriculture Canada provides an excellent tool whereby producers can identify outstanding breeding stock animals and improve the performance of their herds. This program is only used to a very limited extent in British Columbia which indicates that producers in this province are generally not taking advantage of the opportunities available to improve breeding stock performance. In many instances producers, following an initial examination, disregard the program since they feel that the amount of work involved does not justify the apparent benefit. There are examples in British Columbia where producers have been persuaded to use the R.O.P. program and through careful supervision by British Columbia Ministry of Agriculture personnel have obtained results that convinced them of its benefit and they have continued to use the program.

Therefore, it is evident that "on farm" promotion is required if R.O.P. improvement programs are to be established in British Columbia.

This involves a Ministry of Agriculture person working with the producer to set up the basic record keeping, a numbering system for the hogs produced and assisting him during the initial stages. Once the producer is involved in the program and can see the benefits it is expected that the role of government personnel would be minimal.

The British Columbia Ministry of Agriculture has provided two programs to promote the use of the R.O.P. program by hog producers. As noted previously in this report the rebate on purchases of home and station tested boars has been rescinded because of a lack of producer interest. This low producer interest was apparently due to the limited amount of rebate available. As part of an expanded R.O.P. promotion program by the Ministry the use of a substantial rebate program for the purchase of home tested boars should be very worthwhile. Such a rebate program could be limited to three years to provide an incentive to hog producers to use R.O.P. boars. Once the producers become familiar with the advantages of these boars they should continue to use them. The rebate would also enable the boar producer to obtain a price for boars that would reflect the costs of operating the R.O.P. program.

For an R.O.P. program to be successful it is apparent that additional personnel are required within the British Columbia Ministry of Agriculture principally in the person of a swine specialist. This swine specialist would be responsible for various aspects of swine production in British Columbia and would be in charge of promotion of livestock improvement programs. An important part of this promotion would be the preparation of information on the economic advantages of the R.O.P. program in terms of improved efficiency of production. The farm economic branch would be useful participants in the preparation of this information which should then be circulated to producers. From a brief survey of British Columbia Ministry of Agriculture regional offices it was evident that the District Agriculturists are not presently in the position whereby they can promote

these types of programs. Once the programs are well established it would be expected that regional personnel would be in a position to assist new producers or to provide continuity for existing producers.

The R.O.P. program would also be of benefit to the breeding stock companies in the province by providing a uniform method of comparing the quality of their respective breeding stock. At the present time there is no real basis for comparison since only one of the major breeding stock suppliers is actively involved in the R.O.P. program. This supplier operates a test facility similar to the R.O.P. test station in Alberta for boar performance testing.

With the current trend towards larger, higher capitalized operations the demand for replacement breeding stock will increase as producers concentrate on production and rely on outside sources for replacements. This has been an observed trend in other hog production regions and it is expected to occur in British Columbia. The establishment of an R.O.P. program would help to meet this demand since it would serve as a basis for the expansion of the breeding stock industry through the entry of new producers. Such an expansion should improve the supply and competitiveness of the breeding stock industry. However, it must be recognized that the establishment of a breeding stock farm involves higher capital and operating costs than a hog production unit. During periods of high market prices and/or expansion within the industry demand for breeding stock is high and the breeding stock farm is able to sell all of its suitable stock at premium prices. At other times the breeding stock farm is faced with having to sell breeding stock at premiums that do not reflect costs or to send a portion of the suitable breeding stock to slaughter.

There is a need within the British Columbia hog industry for the establishment of a swine herd health program similar to the one outlined in this report that is in effect in Alberta. The lack of an organized swine herd health program in British Columbia provides

a deterent to those persons who wish to place pigs in the R.O.P. Test Station in Alberta. The lack of a program is also a constraint to the commercial producers because there is no basis for comparison of the health standards of breeding stock farms by prospective buyers. Therefore, herd health program similar to that used in Alberta would be of benefit to breeding stock producers and commercial producers as well.

Another aspect of the breeding stock industry examined during the preparation of this report was the opportunity for export sales. As noted, British Columbia breeding stock companies have made some export sales on the basis of their own initiative. These export shipments can be expanded but the following constraints or limitations would have to be overcome if British Columbia is to become fully competitive:

- the current domestic demand is utilizing all of the present supply and this demand will have to be satisfied before export sales are actively sought after by the breeding stock companies,

- an active R.O.P. program would have to be in effect so that prospective buyers could identify the quality of breeding stock available,

- a swine herd health program that would be recognized by foreign governments, agencies and producers must be in place,

- a coordinated promotion program on the part of the Provincial and Federal governments would have to be initiated to acquaint prospective buyers with the breeding stock available. The British Columbia Ministry of Economic Development have provided some marketing assistance to breeding stock companies in the province. However, an overall program of promotion is required if an impact is to be made.

The trade prospects that may result due to the recent changes in the attitude of the Peoples Republic of China are very interesting and could provide a large market for British Columbia breeding stock companies. However, the constraints and limitations noted previously would have to be overcome before these prospects could become sales opportunities. A working committee representing the applicable departments within the Ministry of Agriculture, the Ministry of Development and the British Columbia Swine Breeders Association should be established to initiate an export development and enhancement program.

CHAPTER 5

RECOMMENDATIONS

The following are the recommendations of the study team based on the information gathered during the study.

1. The British Columbia Ministry of Agriculture should actively promote the use of the R.O.P. swine breeding stock improvement program for producers who wish to raise their own replacements and breeding stock companies.

2. The British Columbia Ministry of Agriculture should appoint a swine specialist who would have as one responsibility the promotion at the farm level of the R.O.P. swine breeding stock improvement programs.

3. That the British Columbia Ministry of Agriculture reinstate and increase the levels of rebates available under the former boar purchase program. The exact level of these rebates should be recommended by the Provincial R.O.P. Committee and should be substantial enough to provide a proper incentive to producers to purchase performance tested boars. This

program could be short term in nature (up to three years) on the basis that once producers become familar with the value of performance tested boars the program will no longer be required.

4. That the British Columbia Ministry of Agriculture through the Veterinary Branch initiate a swine herd health program for producers in British Columbia.

5. That the British Columbia Ministry of Agriculture establish a working committee comprising of members of the British Columbia Swine Breeders Association and representatives of the appropriate departments within the Ministries of Agriculture and Economic Development to initiate an export development and enhancement program for swine breeding stock produced in British Columbia.