Fisheries and Environment Canada
Environmental Protection Service

Pêches et Environnement Canada
Service de la protection de l'environnement

Pesticide Control in the Prairie Provinces

Economic and Technical Review
Report EPS 3-NW-78-1

Northwest Region
August, 1977

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PESTICIDE CONTROL IN THE PRAIRIE PROVINCES

by

Stanley Associates Engineering Ltd.
Edmonton, Alberta

for the

Northwest Region
Environmental Protection Service
Fisheries & Environment Canada

Report EPS-3-NW-78-1
August, 1977

REVIEW NOTICE

This report has been reviewed by the following federal and provincial government agencies and approved for publication. Approval does not necessarily reflect the views and policies of the Environmental Protection Service.

Government of Canada

Agriculture Canada	- Production and Marketing Branch - Research Branch
Fisheries and Environment Canada	- Environmental Protection Service - Canadian Wildlife Service - Canadian Forestry Service
Health and Welfare Canada	- Field Operations Directorate
Department of Regional Economic Expansion	- Prairie Farm Rehabilitation Administration

Government of Alberta

Alberta Agriculture	- Crop Protection and Pest Control Branch
Alberta Environment	- Pollution Control Division

Government of Saskatchewan

Department of Agriculture	- Plant Industry Branch
Department of the Environment	- Water Pollution Control Branch

Government of Manitoba

Department of Agriculture	- Technical Services Branch
Department of Mines, Resources and Environmental Management	- Environmental Control Branch

ABSTRACT

This report provides a documentation of legislation and regulatory procedures used by both Federal and Provincial Government agencies to control pesticide use in each of the Prairie Provinces. Information presented in this report is based on communication with Government pesticide control officials and chairmen of pesticide advisory committees.

The principal mechanism for controlling pesticide use in Canada is the Federal Pest Control Products Act. This Act requires that any pesticide (pest control product) offered for sale in Canada must first be registered in compliance with the Act and Regulations and thereafter, stored, displayed and used in accordance with the regulatory status established for the product under that authority. Both the information requirements and the registration review process are comprehensive and involve large expenditures of money and expertise from a number of Government agencies.

Provincial authorities exert the next level of control over pesticides by means of licensing commercial users and dealers, by setting standards for qualifications of users and dealers, by providing education and training, by issuing permits as required under federal or provincial authority for registered pesticides or for research on new compounds and by setting standards for conditions of storage, display and disposal of pesticides and their containers.

However, there is little control over household or non-commercial pesticide use other than through instructions on the label.

Both Federal and Provincial Government agencies provide the third level of control which is to ensure that pesticides do not contaminate foods or water or cause deleterious effects on fish, migratory birds or other non-target organisms.

Numerous pesticide advisory committees play an important role in the overall control mechanism by allowing concerns or problems to be voiced and discussed by experts. Recommendations from these committees are usually heeded by Government agencies and mitigative actions implemented.

RÉSUMÉ

Le présent rapport fait état des dispositions juridiques et réglementaires en vigueur dans les agences gouvernementales fédérales et provinciales en vue de régler l'utilisation des pesticides dans chacune des provinces des Prairies. Les renseignements transmis dans ce rapport proviennent d'échanges avec les autorités gouvernementales régissant les pesticides et avec les présidents des comités consultatifs sur ces produits.

La Loi fédérale sur les produits antiparasitaires demeure le moyen principal de régler l'utilisation des pesticides au Canada. Cette loi exige que tout produit antiparasitaire vendu au pays soit d'abord enregistré conformément à la loi et aux règlements, puis entreposé, étalé et utilisé selon les dispositions réglementaires qui le concernent. Les renseignements exigés ainsi que le mode d'examen des enregistrements sont très poussés et coûtent cher en argent et en personnel qualifié à un certain nombre d'agences gouvernementales.

L'étape suivante de surveillance se situe au niveau des autorités provinciales. Ce sont elles qui accordent les permis de vente et d'utilisation commerciale des pesticides, qui fixent les normes de qualification des marchands et usagers et qui assurent leur instruction et leur formation. Les permis sont émis conformément aux exigences fédérales et provinciales pour les produits antiparasitaires enregistrés ou pour la recherche scientifique sur les nouveaux composés. De plus, elles établissent les normes pour l'entreposage, l'étalage et la mise au rebut des pesticides et de leurs contenants.

Cependant, l'utilisation domestique et non commerciale des pesticides n'est réglée que par le mode d'emploi sur l'emballage.

La surveillance est assurée à un troisième niveau par les agences gouvernementales fédérales et provinciales. Elles doivent s'assurer que les pesticides ne contaminent ni les aliments, ni l'eau et qu'ils ne sont nuisibles ni aux poissons, ni aux oiseaux migrateurs, ni aux autres organismes non visés.

Plusieurs comités consultatifs jouent un rôle important dans le système de surveillance des produits antiparasitaires, en permettant à des experts de discuter des craintes et des problèmes que suscitent les pesticides. Les agences gouvernementales compétentes attachent habituellement beaucoup d'importance à leurs recommandations et prennent les mesures correctives indiquées.

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SUMMARY

It was found that the Government of Canada plays a significant role in the control of pesticides in the Prairie Provinces. Three Federal departments are active in pesticide control, however it should be emphasized that pesticide control mechanisms are usually a joint venture with Federal and Provincial Departments sometimes sharing or delegating responsibilities.

Agriculture Canada provides the first level of pesticide contol and regulation in Canada through the Pest Control Products Act and associated Regulations. All pesticides must be registered under this Act before they can be used in Canada except for research uses. Registered products are assigned to three classes (domestic, commercial or restricted) to ensure their confinement to channels of trade appropriate to the competence of the user. Inspections are carried out to ensure that registered pesticides are manufactured, labelled and sold according to the Regulations. The Department also carries out much of the pesticide research conducted in Canada.

Fisheries and Environment Canada, through a number of its Services, is primarily involved with the third level of pesticide control which is ensuring that contamination or deleterious effects on the environment does not occur. Contamination of water or deleterious effects on fish or migratory birds are the main areas of responsibility. The Department is jointly, with Health and Welfare Canada, responsible for the recent Environmental Contaminants Act. This Act will be used to compliment and support existing Federal legislation where pesticide contamination is a potential problem. A significant amount of monitoring is carried out by this Department to determine residual pesticide levels in water, fish, birds and other species.

Health and Welfare Canada, under the Food and Drugs Act, is responsible for ensuring that foods sold in Canada are not contaminated with anything including pesticides. This responsibility is carried out through toxicological research to determine acceptable levels in different foods and an extensive sampling, analysis and enforcement program.

The Federal Government has eighteen committees which provide advice on pesticide use and control.

In Alberta, pesticide regulation and control is a joint responsibility of the Department of Agriculture and the Department of Environment. Alberta Environment is responsible for the Agricultural Chemicals Act which provides a focal point for all pesticide control in the Province. In addition, a new Chemicals and Pesticides Act for Alberta is in the draft stage.

Regulations under the Agricultural Chemicals Act are used to restrict handling of pesticides near food, feed or water; to prescribe conditions for transport, storage and disposal; to restrict use of highly toxic pesticides; to train and license commercial pesticide applicators; to issue permits for pesticide use in or near water; and to issue permits for research with pesticides.

Alberta Agriculture administers the following two Acts which deal mainly with pesticides:

- The Agricultural Pests Act and Regulations which requires designated pests to be controlled.

- The Weed Control Act and Regulations which requires that designated noxious weeds be controlled.

The Department carries out a number of field monitoring programs through approximately 64 Agricultural Fieldmen.

In Alberta, there are twelve Government committees which deal with pesticides.

In Saskatchewan, the regulation and control of pesticides is carried out by the Department of Agriculture and the Department of the Environment. Significant control is provided by the Provincial Pest Control Products Act and Regulations which is administered by the Department of Agriculture.

This Act and Regulations control packaging, labelling, safety, use, sale or supply, storage, transportation and disposal of pesticides. Also, commercial applicators must receive training, obtain a permit and maintain records of their operations. In addition, a number of policies have been established by the Department which effect the control and use of pesticides. These policies are as follows:

- Warble Control Areas Policy
- Coyote Control Policy
- Persistent Perennial Weed Control Policy
- Insect Control Chemicals - Sale and Distribution Policy

The Saskatchewan Department of Agriculture also administers the Pest Control Act which requires control of designated pests.

The Saskatchewan Department of the Environment regulates the use of pesticides in order to protect surface water and groundwater from contamination. To achieve this protection, guidelines have been developed for use when applying pesticides to:

i) pastures;
ii) irrigation and drainage canals and ditches; and
iii) surface waters for the control of aquatic nuisances.

The Department requires that a commercial pesticide applicator obtain a permit before treating surface waters or areas near them.

Saskatchewan has six committees which deal with pesticides.

Pesticide control in Manitoba is a joint responsibility of the Department of Agriculture and the Department of Mines, Resources and Environmental Management. The Department of Agriculture is responsible for administering the new Pesticides and Fertilizers Control Act and Regulations which replaced the former Pesticides Control Act on April 1, 1977.

The new Act requires that both commercial applicators and retailers of commercial or restricted pesticides obtain a licence. The Act also provides for appointment of pesticide inspectors and the destruction of any material contaminated with pesticides.

The Manitoba Department of Agriculture also administers the following Acts:

- Noxious Weeds Act which requires control of designated weeds.

- Plant Pest and Diseases Act which requires that any person treating a tree for compensation be licensed as a tree pruner.

The Manitoba Department of Mines, Resources and Environmental Management is responsible, under the Clean Environment Act, for control of pesticide discharges to the environment. The Clean Environment Commission, responsible only to the Minister, reviews proposals and prescribes limits on use of insecticides by Government Departments or municipalities in residential or recreational areas.

The Department is also responsible for regulating fumigation and other programs for control of rodents and similar pests.

Manitoba has four committees involved with pesticides.

SECTION 1

INTRODUCTION

1.1 BACKGROUND

Pesticide use in the Prairie Provinces has become a part of the way of life. People residing in the Prairie Provinces use pesticides extensively as a means of sustaining health, comfort and prosperity. Some examples might illustrate this widespread use:

i) The prairie grain farmer halts weed growth and destroys insect pests by spraying crops with herbicides and insecticides.

ii) The homeowner uses pesticides to destroy insects which damage his trees and flowers or to control unsightly weeds growing in his lawn.

iii) The commercial and home gardener uses insecticides and fungicides to kill insects and worms or to control plant diseases which otherwise would destroy his vegetables.

iv) The city official, park superintendent or resort owner uses insecticides to control biting flies such as mosquitoes and black flies.

v) The cattle rancher uses pesticides to control livestock pests such as warbles.

vi) The agency responsible for irrigation districts uses aquatic herbicides to control weed growth in canals and ditches enabling design flow characteristics to be maintained.

vii) Commercial facilities use herbicides to control unwanted vegetation growing around buildings or along rights-of-way.

viii) Farmers and others use vertebrate poisons to control rodents and predators such as coyotes.

It is obvious that pesticides provide many economic and social benefits to society. However, there are some risks during use, of most concern is their non-specific action affecting not only a target but many other harmless or beneficial species. For example, the pesticide DDT had been used effectively for over 25 years, however, because of its stability it was found to be accumulating in the environment. Consequently DDT use has been severely restricted.

Pesticide use has come under ever increasing Government controls so that its benefits can be enjoyed while environmental effects are minimized.

In recent years there has been a growing awareness of environmental issues by Canadians. The Federal Government responded to this public concern by putting forward a major legislative program, the focal point of which was the Government Organization Act resulting in the formation of a Department of Environment in June 1971 (now Fisheries and Environment Canada). The Environmental Protection Service (EPS) was developed to cover the specific responsibility for environmental protection. The role of the EPS is one of problem identification and solution, being concerned with the control and abatement of pollution by developing a realistic program of pollution control for Canada in cooperation with Provincial authorities and industries concerned.

EPS is also responsible for establishing environmental guidelines and standards for use by Federal Facilities, Federal Activities and Crown Corporations. This responsibility of developing guidelines and standards applicable to Federal establishments is carried out by EPS so that Fisheries and Environment Canada can achieve one of its goals which is to clean up all Federal controlled or financed operations. This mandate was approved by Cabinet decision in 1972.

In addition all projects carried out on Federal land, using Federal funds or requiring Federal permitting are screened to ensure that they are environmentally acceptable. This is the Environmental Assessment and Review Process (EARP) which was approved by Cabinet decision in 1973. Propietary crown corporations and regulatory agencies are invited, rather than directed to participate in this process.

This study was initiated by the Northwest Region of EPS to provide a more thorough and accurate understanding of pesticide control in the Prairie Provinces. This information will be used to assess the effectiveness of current control mechanisms, to identify existing or potential problem areas and to determine the type of additional control, if any, that should be placed on Federal pesticide use.

1.2 SCOPE

The objectives of this study were as follows:

i) To document existing mechanisms for regulation and control of all aspects of pesticide use in each of the three Prairie Provinces, and

ii) To document all existing interdepartmental and intergovernmental committees which deal with any aspect of pesticide use or control.

For the purposes of this study, the term pesticides means all chemicals used for the control of pests.

It should be emphasized that it was not the purpose of this report to assess, evaluate or criticize pesticide control mechanisms. Rather, it was to document existing control mechanisms including the following:

" i) the acts, regulations, guidelines, etc. which are involved,

ii) the structure of departments or agencies which are responsible for administering the above including the number of professional and technical staff in directly related office and field duties,

iii) the aspects of pesticide use which are controlled and are not controlled, e.g., licensing of applicators, transportation or storage of pesticides, etc.,

iv) the standards set by the various departments or agencies,

v) the mechanisms for application for permits and who or what products require permits and who or what do not require permits,

vi) the mechanisms for licensing commercial applicators,

vii) the procedures followed in review and approval of permit applications,

viii) the extent of monitoring and supervising the chemical used and actual method of application to determine the adherence to license or permit requirements,

ix) the extent of monitoring to determine the effectiveness of pesticide kill,

x) the extent of monitoring to determine the effects on non-target organisms, and,

xi) pesticide inventory mechanisms for pesticides entering and being sold within the Province."

This report also provides detailed information on the numerous committees involved with pesticides. The information on each committee includes the following:

" i) name of committee and present chairman,

ii) terms of reference,

iii) membership and affiliation of members,

iv) brief summary of last three years of work and accomplishments,

v) frequency and location of meetings,

vi) reporting relationship,

vii) the aspects of pesticide control handled, and

viii) statutory powers."

1.3 APPROACH

This study was carried out by contacting key Government officials and committee chairmen at both the Federal and Provincial levels. Information was obtained through written communication, telephone discussions and meetings held in each of the Provincial capitals. Appendix I provides a list of these personal contacts.

Information was compiled and reviewed for completeness. The process of requesting information, compiling and reviewing was iterative in nature with the process being repeated several times to fill in the remaining information gaps.

The report has been organized so that all information on how the Province of Alberta, for example, controls pesticides can be found in one major section. This section also includes information on advisory committees established by Provincial agencies.

Documentation of each relevant Government department or branch of a department is organized similarly and discussed under the following headings:

a) Acts, Regulations, Standards and Guidelines.
b) Organization and Control Responsibilities.
c) Permit and Licensing Procedures.
d) Field Monitoring and Enforcement.
e) Inventory Mechanisms.
f) Public Information.
g) Problems and Concerns.

SECTION 2

GOVERNMENT OF CANADA

The Government of Canada plays a significant role in the control of pesticides in the three Prairie Provinces. Control by the Federal Government manifests itself through Federal Acts and Regulations and through the advisory role of Federal pesticide experts and researchers.

This Section provides detailed information on the three Federal departments involved in pesticides control and the Federal advisory committees concerned with pesticides.

Agriculture Canada provides the initial pesticide control mechanism in Canada. All pesticides must be registered under Agriculture Canada's Pest Control Products Act before they can be sold for use in Canada. The other two Federal departments, Fisheries and Environment Canada and Health and Welfare Canada are responsible for assuring that pesticides do not cause any unacceptable effects on the environment and do not contaminate foods or present a health hazard due to handling and application. The three departments all participate in the evaluation of pesticides in respect to their own regulatory and disciplinary interests.

2.1 AGRICULTURE CANADA

Agriculture Canada provides the first line of pesticide control and regulation in Canada through the Pest Control Products Act and associated Regulations. All pesticides offered for sale or imported must be registered under this Act before they may be sold or used in Canada. The Department also carries out much of the pesticide research conducted in Canada.

Agriculture Canada is organized into seven main branches, two of which will be discussed in this report:

- Production and Marketing Branch.
- Research Branch.

Figure 1 shows schematically the organization of Agriculture Canada involved in pesticide control and discussed in this Section.

2.1.1 Production and Marketing Branch

This Branch administers legislation and policies in agricultural production and marketing. Its aims are twofold: (a) to assist producers in obtaining a fair return for management, capital and labour, and (b) to ensure the supply of high-quality farm products for consumers at home and abroad.

The responsibilities of the Branch and activities related to pesticides are now discussed:

a) Acts, Regulations, Standards and Guidelines

Pesticides were first brought under Federal regulatory control in 1927 by means of an Act to Regulate the Sale and Inspection of Agricultural Economic Poisons. This law was superseded in 1939 by a Pest Control Products Act. The primary intent of the P.C.P. Act (1939) and its predecessor was to prevent misrepresentation of products sold for the control of pests and to prevent the sale of unduly harmful chemicals for these purposes. These

AGRICULTURE CANADA

PRODUCTION AND MARKETING BRANCH

Plant Products Division
- Control Products Section
  - Evaluation Unit
  - Production Compliance Unit
  - Documentation Unit
- Laboratory Services Section
  - Pesticide Laboratory

RESEARCH BRANCH

Planning and Evaluation Directorate
- Entomology Research Coordinator
- Environment and Resources Research Coordinator
- Plant Pathology Research Coordinator
- Weeds Research Coordinator

Operations Directorate
- Central Division
  - Chemistry and Biology Research Institute
  - Research Institute, London, Ontario
- Western Division
  - 9 Research Stations in the Prairie Provinces

FIGURE 1 - AGRICULTURE CANADA ORGANIZATION

laws were principally labelling authorities that determined the label requirements under which pest control products could be imported or offered for sale. It was recognized in the mid 1960's that a more sophisticated law was needed to manage what had become a highly complex and essential commodity group - modern pesticides. In 1969 a revised Pest Control Products Act was passed by Parliament and brought into force by the adoption of Regulations in 1972.

Pest Control Products Act and Regulations. The intent and philosophy of the Pest Control Products Act (PCP Act) is expressed as follows:

"No person shall manufacture, store, display, distribute or use any control product under unsafe conditions." [Section 3 (1)]

"No person shall import into or sell in Canada any control product unless such control product

(a) has been registered as prescribed;
(b) conforms to prescribed standards; and
(c) is packaged and labelled as prescribed." [Section 4 (1)]

Regulations under the PCP Act became effective in 1972 and apply to the following areas:

- exemption of certain control products
- application of the regulations
- exemption from registration
- application for registration
- registration
- duration and renewal of registration
- temporary registration
- refusal to register
- cancellation and suspension of registration
- records

- labelling
- denaturation
- storage and display
- distribution
- prohibitions respecting use
- packaging requirements
- standards
- general prohibitions
- sampling
- seizure and detention of noncomplying products
- import requirements

Punishment for violation of the Act or Regulations can be two years imprisonment if the offence is indictable otherwise the offence is punishable by summary conviction.

The applicant who wishes to have a pesticide registered is required under the Act to provide the following information:

- effectiveness and safety of the material for the proposed use(s)
- occupational exposure risks
- effect on non-target organisms and host plant, animal or article
- persistence and transport of the active ingredient and residues
- suitable methods of analysis
- detoxification measures
- suitable disposal procedures
- stability under storage conditions
- compatibility with other control products
- levels of residue likely to be found in use
- effects of storing or processing on its dissipation or degradation including its residues as those effects relate to human or animal foods

Upon registration a pesticide is classified as Domestic, Commercial or Restricted. The toxicity and risk of using each product are the prime factors in classifying a pesticide.

Further detailed information on registration requirements can be found in the "Control Products Registration Information" kit available from Agriculture Canada.

Development of the information base to meet these registration requirements is estimated by industry to take 5-7 years at a total cost of 10-12 million dollars for each pesticide. For reasons of brevity, only those pesticides exempted under the Act are discussed here:

Certain control products are exempt from the Act completely. These are control products subject to the Food and Drugs Act and used for the following purposes only:

- control of viruses, bacteria or other microorganisms on or in human or domestic animals

- control of arthropods on or in humans, livestock or domestic animals, if the product is to be administered directly

- control of microorganisms on articles associated with medical care

- control of microorganisms in premises where food is manufactured, prepared or kept

- preservation of food for humans during cooking or processing

Also exempted are certain control products other than live organisms, imported into Canada for the importers own use. However, this exemption is limited to small total quantities, i.e. less than one pound in weight and one pint in volume and having a monetary value of not more than ten dollars.

Certain control products are exempted from registration provisions provided they meet other requirements of the Act respecting safety. The following exemptions from registration are in place:

- a control product which is used only in the manufacture of a registered control product

- a control product used by a person for research purposes

  i) on premises owned or operated by that person, or

  ii) on any other premises not owned or operated by that person, if such use has been approved by the Director of the Plant Products Division, Production and Marketing Branch

- a control product that

  i) is a substance whose primary function is not as a pesticide but has the properties of a pesticide and is listed in Schedule II and meets the conditions set forth in that Schedule.

  (It is noted that the Environmental Contaminants Act can be applied to these substances)

  ii) is used as feed for cattle, or a fertilizer subject to the fertilizers Act, or seed treated with a registered control product and labelled accordingly

Regulatory Directives are issued periodically to explain and interpret the Act and Regulations in order to provide guidance to those involved in the management of pesticides. These directives fall into three memorandum categories:

- Registrant's Memorandum which may be addressed to one or more registrants as required, usually requesting comment on proposed changes in the status of an active ingredient, or on description of new procedures, evaluation criteria or standards.

  It is also used to alert registrants to procedures regarding product compliance.

- Trade Memorandum which informs industry, dealers, users, extension and regulatory officials of any regulatory aspect affecting control products.

  An important example is Trade Memorandum T-104 issued in June 1974 which covers the classification of Forest Management pesticides as "restricted" and the procedures for implementation of the conditions and limitations established in the memorandum. It is worthwhile to note that the conditions set out in the memorandum were based on advice from four of the federal committees discussed later.

- Inspection Memorandum which informs inspection staff, primarily within Agriculture Canada, on inspection, investigation and enforcement matters.

From the above information it can be seen that the Pest Control Products Act is the first level of control for use of pesticides in Canada. Legislation in the three Prairie Provinces builds upon this Act to control use in each Province.

Pesticide Residue Compensation Act. The purpose of this act is to provide compensation to a farmer who cannot sell a product because pesticide residue concentrations exceed levels set out under the Food and Drugs Act. Compensation applies to those farmers who used a registered pesticide in accordance with recommendations made by Agriculture Canada.

The Minister of Agriculture, however, must be satisfied that the pesticide residue is not present because of any fault of the farmer, his employees or agents, or of a previous owner of land or his employees or agents.

Regulations under the Act provide procedures to be followed in claiming compensation and methods to be used in determining the amount of compensation. The Act also sets out appeal procedures for the farmer who considers his compensation was inadequate.

b) Organization and Control Responsibilities

Work of the Production and Marketing Branch is carried out by nine divisions and the Food Advisory Services. The Plant Products Division is one of these nine divisions and has responsibility for the two Acts discussed previously and is organized as shown in Figure 1 for pesticide control.

c) Permit and Licensing Procedures

In addition to pesticide Registration, the Plant Products Division issues the approvals for research uses of non-registered pesticides on lands not owned by the agency or company carrying out the research work. Approvals for these uses are based on toxicity and chemical characteristics of the chemical, proposed scale of testing and disposal of the agricultural product exposed during the test program.

d) Field Monitoring and Enforcement

Inspectors designated under the PCP Act sample pest control products regularly and where the Act or Regulations are in violation, they may seize and detain the pesticide. Agriculture Canada's Annual Report for 1975/76 indicates that 12,160 inspections were carried out, 2,200 samples were collected and 33 detentions were made in Canada.

The Plant Products Division has three District Directors in Western Canada: one for Alberta and British Columbia, one for Saskatchewan and one for Manitoba. The field inspectors indicated below, work under the Directors and are located throughout the Province:

Alberta	-	18 inspectors
Saskatchewan	-	14 inspectors
Manitoba	-	11 inspectors

It is estimated that approximately half of the field sampling and inspections are carried out at the retail level. These inspectors also periodically collect samples of feed grain and hay for residue analysis.

The Alberta and British Columbia Division Director was aware of only one successful claim under the Pesticide Residue Compensation Act for the three Prairie Provinces.

e) Inventory Mechanisms

Section 25 of the Pest Control Products Regulations requires that registrants make a record of quantities of pesticides stored, manufactured or sold. It is required that the registrants maintain the record for five years after pesticides are made. The Director of the Plant Products Division has authority to request this information but to date this authority is not routinely exercised except in special circumstances.

The Plant Products Division does maintain information on quantities and location of entry of pesticides imported into Canada. This information is provided by Statistics Canada.

f) Public Information

Information regarding the registration of pesticides and the monitoring or enforcement of pesticides regulations under the PCP Act is not normally made public. Agriculture Canada, however, maintains a sizeable Information Division for informing the public of the activities of the Department. This Division makes available many publications on pesticides and pests through the Canadex Factsheets and Pest Bulletins.

g) Problems and Concerns

No specific problems or concerns were raised regarding control of pesticides during the discussions leading to the preparation of this report.

2.1.2 Research Branch

The Research Branch is organized to solve current and anticipated agricultural problems in the different soil and climatic regions of Canada. One research

program has the objective of reducing losses caused by disease, insects and weeds. As part of this program, researchers in Ottawa and across Canada are searching for more efficient pesticides, carrying out efficacy and evaluation tests of registered pesticides and are screening candidate pesticides for Canadian usage and conditions.

a) Acts, Regulations, Standards and Guidelines

Activities of the Research Branch are carried out under the Department of Agriculture Act which outlines in general terms, the responsibilities of Agriculture Canada.

The Research Branch does not have authority for control of pesticides in Canada. Through their research, however, the Plant Products Division is able to make decisions on registration of pesticides.

b) Organization and Responsibilities

Work of the Research Branch is carried out by two Directorates: the Planning and Evaluation Directorate and the Operations Directorate.

The Planning and Evaluation Directorate is made up of fifteen research co-ordinators, each being responsible for one field of research in Canada. Four research coordinators are significantly involved with pesticides:

- Entomology Research Coordinator
- Environment and Resources Coordinator
- Plant Pathology Coordinator
- Weeds Coordinator

These coordinators plan, evaluate and give direction to the research programs of Agriculture Canada.

The Operations Directorate is responsible for the six Research Institutes and the Research Stations across Canada. This Directorate is organized into three Regional Divisions: Eastern, Central and Western. Research Institutes are controlled by the Central Division.

Two of the six Research Institutes are carrying out on-going pesticide research programs. The Chemistry and Biology Research Institute in Ottawa has a group working on environmental chemistry and another group working on agrometeorology. The Research Institute at London, Ontario is primarily concerned with herbicides and insecticides. These two institutes have approximately 35 research scientists working on pesticides.

The Western Division has nine Research Stations, at the following locations:

Manitoba
- Brandon
- Morden
- Winnipeg

Saskatchewan
- Regina (Indian Head)
- Saskatoon
- Swift Current

Alberta
- Beaverlodge (Fort Vermilion)
- Lacombe (Vegreville)
- Lethbridge

The Regina Research Station is the main centre for weed control research in Canada. The above nine research stations employ approximately 70-75 full time scientists who are carrying out pesticides research. There are also a number of visiting scientists working on pesticide research.

There are approximately 200 scientists across Canada involved in pesticide research within the Research Branch. The research effort can be summarized as follows:

- Application technology for minimizing drift problems and consequent decrease of input to the environment on non-target organisms.

- Mode of Action research for developing blueprints for the more efficient design of pesticides.

- Efficacy and evaluation of registered materials for minor uses and backup materials. New candidate materials are screened for Canadian usage and conditions.

- Development of residue methodology for pesticide residues in agriculture produce and in environmental substrates.

- Research on the fate and persistence of pesticides in the environment and the effect on non-target soil organisms.

- Monitoring of residues and transformation products in air, soil and water.

- Integrated control program aimed at reducing use of pesticides which has been particularly successful in orchards where 30% or more reduction in use has been achieved.

- Biological control programs.

The Research Branch does not have licensing, permit or enforcement responsibilities. Monitoring for effects on target and non-target organisms is carried out as it relates to the research programs. Information is not usually disseminated to the public but it is published in scientific journals.

2.2 FISHERIES AND ENVIRONMENT CANADA

This department was established in 1971 under the Government Organization Act (1971). It was created to amalgamate major federal responsibilities concerning the protection, preservation and enhancement of environmental quality and related renewable resources.

Legislation under which pesticides are monitored and controlled relate primarily to contamination of water and deleterious effects on fish and migratory birds.

Organization of the department is by Services; three of these are relevant to the study of pesticides and are shown in Figure 2.

The responsibilities and activities of these agencies with respect to pesticides relevant to the Prairie Provinces are now discussed.

2.2.1 Environmental Protection Service

The Environmental Protection Service (EPS) develops and enforces environmental protection regulations and other instruments used in implementing federal environmental laws.

It serves as an advisory body to other federal departments and is the point of contact for the public on environmental protection matters.

a) Acts, Regulations, Standards and Guidelines

Fisheries Act, Section 33. This prohibits the deposition of deleterious substances of any type in waters frequented by fish. This Act provides authority for action against violators.

No specific standards, guidelines or regulations limiting pesticide use have been developed by EPS. Thus, pesticide control would be achieved through the general provisions of the Act.

FISHERIES AND ENVIRONMENT CANADA

Environmental Protection Service

- Water Pollution Control Directorate
- Environmental Impact Control Directorate
    - Contaminants Control Branch
    - Waste Management Branch
    - Federal Activities Branch
    - Environmental Emergencies Branch
    - Air Pollution Control Directorate

Fisheries and Marine Service

- Industry Services Directorate
    - Inspection and Technology Branch
- Resource Services Directorate
    - Aquatic Environment Branch

Environmental Management Service

- Canadian Forestry Service
    - Northern Forestry Research Centre, Edmonton
    - Forest Pest Management Institute, Sault Ste. Marie
- Canadian Wildlife Service
    - Wildlife Management Branch
- Inland Waters Directorate
    - Water Quality Branch

Fisheries Act, Section 31. This section of the act was ammended in 1977 and prohibits activities which result in the alteration, disruption or destruction of fish habitat. Fish habitat means spawning grounds and nursery, rearing, food supply and migration areas on which fish depend directly or indirectly in order to carry out their life processes. As with Section 33, authority is provided for action against violators.

Environmental Contaminants Act. This recent Act is the joint responsibility of the Departments of Fisheries and Environment, and Health and Welfare. The Act provides authority to obtain information on the problem of contamination of the environment by a substance regardless of the source, use, product or media. Authority is also given to apply the appropriate controls in those cases where other legislative authority does not exist or is not used.

The Act focuses upon substances or classes of substances, is comprehensive, operates as a backup to other laws and stresses the prevention of contamination rather than dealing with problems after they have occurred.

An example of the backup role of the Act would be the control of a chemical which might be a pesticide but is used by industry for other purposes. These other uses of the chemical would not be covered under the Pest Control Products Act but could be covered by the Environmental Contaminants Act.

No regulations, standards or guidelines specific to pesticides have been implemented under this Act.

Code of Good Practice For Management of Hazardous and Toxic Wastes at Federal Establishments. This Code provides guidelines for handling and disposal of hazardous and toxic wastes, including pesticides, which are to be followed at facilities under the jurisdiction of the Federal Government. The purpose is to assist Federal Agencies in developing waste management programs, and in developing plans and specifications for the construction and operation of Federal facilities.

Detailed guidelines are provided for collection, storage, transportation and recovery or disposal of pesticides.

The Ocean Dumping Control Act. The Ocean Dumping Control Act, administered by Fisheries and Environment Canada, was designed to assist Canada in protecting its fisheries and recreational activities from pollution resulting from dumping in marine waters. The major provision of the Act is that no person shall dump except in accordance with the terms and conditions of a permit. Under the authority of this Act, disposal of certain substances (e.g. organohalogen compounds, mercury and cadimum compounds, Schedule I) is prohibited except in special circumstances.

Clean Air Act. This Act permits the establishment of national emission standards prescribing the maximum quantities and concentrations of air contaminants that may be emitted into the ambient air when the contaminant constitutes a significant danger to human health or is in violation of an international obligation pertaining to the abatement or control of air pollution. National emission guidelines indicating quantities or concentrations in which a contaminant should not be emitted into the ambient air may also be published under the authority of this Act.

To date no standards or guidelines specific to pesticide emissions (from manufacturing or actual application) have been developed under the Clean Air Act.

b) Organization and Responsibilities

The Environmental Protection Service in Ottawa is organized into three Directorates:

- Air Pollution Control Directorate
- Water Pollution Control Directorate
- Environmental Impact Control Directorate

Two of these are involved in pesticides control. In addition, there are five Regional Offices, the Northwest Region in Edmonton being responsible for the three Prairie Provinces and the Northwest Territories. The Northwest Region has District Offices in Winnipeg, Regina, Edmonton and Yellowknife.

The Water Pollution Control Directorate is responsible for the development of national baseline regulations and guidelines for the control of liquid effluents under Section 33 of the Fisheries Act. There are, however, no specific requirements under the Act for pesticide control. Therefore, the general provisions of the Fisheries Act, which prohibit the deposit of a deleterious substance such that it may affect waters frequented by fish or waters leading to waters frequented by fish, could be applied to the control of pesticides.

The Prairie Provinces have been delegated the administrative responsibilities of fish management under the Fisheries Act, and may also use the general provisions of Sections 31 and 33 as necessary. Legislative authority over the Act rests with the Government of Canada.

The Environmental Impact Control Directorate is organized into the Contaminants Control Branch, Waste Management Branch and Federal Activities Branch. The Contaminants Control Branch has a small group working on pesticide programs. To date however, there have been no guidelines, requirements or regulations for pesticides developed under this Act. It is understood that the Waste Management Branch in conjunction with the Federal Activities Branch, is becoming involved in pesticide disposal from Federal facilities as reflected in the Code of Good Practice discussed previously.

c) Permit and Licensing Procedures

EPS does not issue licenses or permits dealing with pesticides control in the three Prairie Provinces.

d) Field Monitoring and Enforcement

EPS carries out effluent and water quality monitoring programs on a continuing basis; however, none of these deal specifically with pesticides, although EPS will occasionally have water samples analyzed for pesticides.

If a pesticides problem were found, enforcement could be carried out under Section 33 of the Fisheries Act. To date there have been no enforcement actions regarding pesticides.

e) Inventory Mechanisms

The Environmental Contaminants Act provides the Minister with broad powers for information collection from those who import, manufacture or process potentially dangerous substances. These powers can be applied to pesticide substances but have not been exercised to date.

f) Public Information

There has been no public information issued by EPS regarding pesticide control in the prairie provinces.

g) Problems and Concerns

Problems and concerns indicated by EPS were as follows:

- release of pesticides during manufacturing of pesticides

- transportation of pesticides

- control of substances which may be a pesticide but used by industry for other purposes. For example, hexachlorobenzene, a fungicide, is used in industry as a feedstock for production of other chemicals

- disposal of pesticide containers

- disposal of small quantities of pesticides

- cleaning procedures applied to pesticide handling equipment

- lack of understanding the relationships between the various federal pesticide committees

- control over pesticides used by industry for such things as controlling slime growth in cooling water

2.2.2 Fisheries and Marine Service

The Fisheries and Marine Service (F&MS) is responsible for a broad range of programs related to the aquatic environment and the living resources of the ocean and inland waters.

a) Acts, Regulations, Standards and Guidelines

The F&MS is primarily responsible for the Fisheries Act; the involvement in control of pesticides is with the fish inspection program carried out to enforce the Food and Drugs Act (Health and Welfare Canada) as it relates to pesticide residues in fish flesh. The F&MS therefore, does not enforce any of its own Acts and regulations applicable to pesticide control.

b) Organization and Control Responsibilities

The Fisheries and Marine Service activities related to pesticides control fall under the Inspection and Technology Branch of the Industry Services Directorate. The Western Region Inspection Program, operating out of the Freshwater Institute in Winnipeg, carries out sampling of fish products which are for import or export. The program also includes sampling of fish for sale in Canada on behalf of Alberta and Saskatchewan but not for Manitoba. Sampling in Manitoba is carried under control of the Manitoba Committee on Pesticide Residue Testing.

Sampling in the Prairie Provinces is carried out by Primary Product Inspectors and in some cases by laboratory personnel, located as follows:

Alberta	-	2.5 man-years
Saskatchewan	-	6 man-years
Manitoba	-	7 man-years

Six people are employed at the Freshwater Institute for carrying out contaminant analysis including pesticides.

c) Permit and Licensing Procedures

The F&MS does not issue permits or licenses controlling pesticide use in the three Prairie Provinces.

d) Field Monitoring and Enforcement

A major monitoring survey was undertaken in 1974 and another in 1977. Approximately 300-400 samples will be collected and analysed for toxic contaminants including pesticides during the 1977 program. A survey is not implemented every year since pesticide levels do not warrant a continuous program. To date, there have been no problems with pesticide residues in fish for the three Prairie Provinces.

If pesticide contamination were found in a commercial fish product, the enforcement procedure would entail detaining the product to prevent exportation, importation or selling. Should the fish be for export, the receiving countries standards would be checked and if compliance was shown, the product would be released for export to that country.

Enforcement of regulations for pesticides contamination, however, has not been required to date in the three Prairie Provinces.

e) Inventory Mechanisms

None.

f) Public Information

There has been no public information issued regarding pesticide control by Fisheries and Marine Service.

g) Problems and Concerns

None reported.

2.2.3 Environmental Management Service (EMS)

The Environmental Management Service provides focus for a comprehensive approach to environmental and resource management. There are four operational units, three of which are involved in the control of pesticides in the three Prairie Provinces:

- Canadian Forestry Service (CFS)
- Canadian Wildlife Service (CWS)
- Inland Waters Directorate (IWD)

Because of their unique nature, each operational unit is discussed separately.

2.2.4 Canadian Forestry Service (CFS)

The CFS carries out research to improve forest productivity and executes studies to improve forest management. A national survey of forest insects and diseases is conducted annually. Extensive research on pesticides is undertaken to combat destructive insects and diseases.

a) Acts, Regulations, Standards and Guidelines

The CFS does not have regulatory powers for the control of pesticides.

b) Organization and Control Responsibilities

The CFS is organized into research centres, institutes and laboratories reflecting its research orientation. The following are operations of interest to this study:

- Northern Forestry Research Centre. Edmonton (sub-offices in Winnipeg and Prince Albert)

- Forest Pest Management Institute, Sault Ste. Marie, Ontario (An ammalgamation of the former Insect Pathology Research Institute in Sault Ste. Marie and the Chemical Control Research Institute in Ottawa.)

Although the CFS does not have pesticide control responsibilities, a significant amount of research is carried out on improving forest pest control products and application methods. This research also provides information for registration aspects under the Pest Control Products Act handled by Agriculture Canada.

The Northern Forestry Research Centre, specifically, has been involved with pesticide field trials on shade and shelter belt trees in Alberta for a number of years.

c) Permit and Licensing Procedures

None.

d) Field Monitoring and Enforcement

There are very few forest spray programs in the Prairie Provinces. Manitoba has small spray programs, in contrast to others in the country, while Alberta and Saskatchewan do not normally carry out forest spray programs.

CFS has been involved in pest population monitoring before and after spray programs in Manitoba but only at the request of the Province.

e) Inventory Mechanisms

None.

f) Public Information

The Northern Forestry Research Center prepares and makes available a series of Pest Leaflets, each covering a separate pest problem. The damage caused by the pest, methods of control and background on the cause of the problem are given in the leaflets. Annual reports on the shade and shelter belt field trials carried out are also published by the Northern Forestry Research Center.

It is noted that an excellent reference book was recently published by Environment Canada entitled, "Aerial Control of Forest Insects in Canada". (Catalogue No. Fo23/19/1975)

g) Problems and Concerns

The following concern was identified:

- in general there appears to be many committees involved with pesticides and it is difficult to determine their responsibilities

2.2.5 Canadian Wildlife Service (CWS)

The CWS is primarily responsible for the administration of the Migratory Birds Convention Act. The Service revises annually the Migratory Birds Regulations which govern open seasons on migratory game birds and the issue of hunting permits under the Act.

Research is conducted on wildlife in the Territories and National Parks and advice is provided on wildlife management problems.

CWS also cooperates with other agencies in dealing with national and international problems related to wildlife resources such as rare and endangered species and toxic chemicals.

a) Acts, Regulations, Guidelines and Standards

The Migratory Birds Convention Act, administered by CWS, is similar to the Fisheries Act in that the regulations prohibit the deposition of oil, oil wastes or any other substances harmful to migratory birds in any waters or in any area frequented by migratory birds.

b) Organization and Control Responsibilities

The CWS is organized in a manner similar to other Fisheries and Environment Canada services with a Headquarters office in Ottawa and five regional offices. The Western and Northern Regional Office in Edmonton is responsible for the three Prairie Provinces and the Northwest Territories. Control responsibilities for pesticides are carried out through a national on-going monitoring program described below in sub-section (d).

CWS has carried out some work on the effects of pesticides, for example by a Research Scientist in Edmonton on the perigrine falcon.

CWS has been made the lead agency in the planning and implementation of an Environmental Management Service integrated program on toxic substances, now in the preliminary stages of implementation.

c) Permit and Licensing Procedures

CWS does not issue permits or licenses to pesticides control in the three Prairie Provinces.

d) Field Monitoring and Enforcement

CWS has an on-going national monitoring program which focuses on gulls. Eggs are sampled just prior to hatching and analysis is carried out by the laboratory in Ottawa.

To date, the sampling has been primarily in Alberta but it is planned to expand to Saskatchewan and Manitoba. Three people are involved with egg collection in the Prairie Provinces.

e) Inventory Mechanisms

None.

f) Public Information

None.

g) Problems and Concerns

Concerns raised by CWS centered around the effects on non-target organisms:

- food chain effects

- indirect effects, for example, regarding rodenticides, where an animal consumes a rodent which has ingested a rodenticide

2.2.6 Inland Waters Directorate (IWD)

The IWD is responsible for national policies concerning water quality and water quantity, and national policies and functional direction for comprehensive river basin studies under the Canada Water Act. The directorate cooperates with the Provinces and the United States in developing joint programs for water resource management.

The main involvement of IWD with pesticides is in the nation-wide water quality monitoring program.

a) Acts, Regulations, Standards and Guidelines

The Canada Water Act provides the IWD with a mandate to establish national policies related to water resource management. A federal policy has been developed for inland waters and guidelines for setting objectives for water quality have been in existence since 1967. These guidelines are currently being reviewed and updated by IWD.

The IWD participates as a member in activities of the Prairie Provinces Water Board. The Board has developed Water Quality Objectives (including pesticides) for use in the three Prairie Provinces; these objectives are currently being reviewed by the Water Quality Committee under the Board.

In addition, IWD is responsible for inventories of surface water quality including pesticides in National Parks located in the Rocky Mountains.

Until recently, IWD was primarily concerned with collecting water samples, chemical analysis, data validation and data storage in NAQUADAT (National

Water Quality Data Bank). However, the Directorate is now becoming involved in data interpretation. For example, a draft interpretive report has been prepared on "Residual Biocide Concentrations in Surface Water of the Prairie Provinces" by the Regional Office in Regina.

b) Organization and Control Responsibilities

The Inland Waters Directorate does not have pesticide control responsibilities.

The IWD is organized into a Headquarters in Ottawa and five Regional Offices with the responsibility for the three Prairie Provinces being centered with the IWD Regional Office in Regina. The laboratory for the Prairie Provinces is located in Calgary and is responsible to the Water Quality Branch in Regina.

The principal function of the IWD, regarding pesticides, is monitoring of surface waters. To carry out this role, each Province has been designated as a District having one Monitoring and Survey Technician who is assisted by one or two casual employee technicians, during the summer.

c) Permit and Licensing Procedures

None.

d) Field Monitoring and Enforcement

The IWD carries out a comprehensive surface water quality monitoring program but is not involved in enforcement. There are approximately 25-30 stations in the Prairie Provinces which are routinely sampled and analyzed for pesticides. Eleven of these are on major rivers flowing across Provincial boundaries.

Analytical results are reviewed and where contentious results are found, a follow-up survey is carried out. Generally, the Provincial water quality agency and the Environmental Protection Service are involved in these follow-up surveys.

Special pesticide surveys (not follow-up surveys) have been carried out across the three Prairie Provinces in 1973, 1974 and one is underway for 1977. In 1975, a special survey was undertaken within and near Winnipeg in relation to the potential encephalitis problem and the use of the insecticide Baygon to control mosquitos.

e) Inventory Mechanisms

None.

f) Public Information

None.

g) Problems and Concerns

High concentrations of a few pesticides have been found by the IWD during low flow or drought conditions in the Red River and North Saskatchewan River.

2.3 HEALTH AND WELFARE CANADA

Health and Welfare Canada is responsible, under the Food and Drugs Act, for ensuring that food sold to the public is not contaminated with pesticides or other toxic materials. This responsibility is carried out by the Health Protection Branch through two of the six activity-oriented Directorates: the Food Directorate and the Field Operations Directorate.

The activities of these two Directorates are now discussed in more detail. An outline of the departmental organization relevant to pesticides control is given in Figure 3.

2.3.1 Foods Directorate

The Foods Directorate of the Health Protection Branch is responsible for the research and evaluation of pesticide residues in order to establish acceptable residue levels.

a) Acts, Regulations, Standards and Guidelines

Under the Food and Drugs Act, Health and Welfare Canada is empowered to establish regulations pertaining to the adulteration of food. The Foods Directorate carries out research and evaluations which lead to the establishment of acceptable residue levels. These levels are prescribed in the Regulations.

Division 15 of Part B (Foods) of the Food and Drugs Regulations sets out the maximum acceptable residue levels of agricultural chemicals and other contaminants in a number of foods. For example, the November 1976 Regulations applied to 100 different agricultural chemicals; these regulations are continually being updated, expanded or rescinded, as appropriate.

HEALTH PROTECTION BRANCH

FOODS DIRECTORATE

Bureau of Chemical Safety
- Food Research Division
  - Pesticides Section
- Toxicological Evaluation Division
  - Pesticides Section
- Additives and Pesticides Division
  - Agricultural Chemicals Section

FIELD OPERATIONS DIRECTORATE

- Bureau of Field Operations
- Central Region (Manitoba, Saskatchewan)
- Western Region (Alberta, British Columbia)
- Educational Services

FIGURE 3 - HEALTH AND WELFARE CANADA ORGANIZATION

b) Organization and Control Responsibilities

The Foods Directorate is made up of three Bureaus, the Bureau of Chemical Safety being responsible for pesticides research and evaluation. Three of the four Divisions within the Bureau of Chemical Safety are actively engaged in pesticide research and evaluation (see Figure 3). Within these three Divisions, there are approximately 15 scientists who are working on pesticides.

The Food Research Division, Pesticides Section, carries out research on food chemistry, the fate of chemicals through studies of metabolism and research on chemical analysis of residues.

The Toxicological Evaluation Division, Pesticides Section, reviews the toxicology of residues and estimates hazards to man through long-term feeding studies on laboratory animals such as rats and dogs.

The Additives and Pesticides Division, Agricultural Chemicals Section, evaluates new pesticides or new uses of pesticides to determine acceptable residue levels. This Section works very closely with the Control Products Section of Agriculture Canada.

c) Permit and Licensing Responsibilities

None.

d) Field Monitoring and Enforcement

This work is carried out by the Field Operations Directorate.

e) Inventory Mechanisms

None.

f) Public Information

None available.

g) Problems and Concerns

No problems or concerns were identified by the Foods Directorate.

2.3.2 Field Operations Directorate

The Field Operations Directorate is responsible for monitoring foods to determine the presence of any pesticide residues and for investigating and taking appropriate enforcement action when residue problems are identified.

a) Acts, Regulations, Standards and Guidelines

The field monitoring and enforcement responsibilities are carried out under the Food and Drugs Act and Regulations.

b) Organization and Control Responsibilities

The Field Operations Directorate has a Headquarters Office in Ottawa and five Regional Offices. The Central Region covers Manitoba, Saskatchewan and part of the Northwest Territories, while the Western Region includes Alberta, British Columbia, Yukon Territory and part of the Northwest Territories. Each regional office is equipped with a pesticide residue laboratory.

District Offices are established in major cities in each Region. The number of Food and Drug Inspectors in each Province is as follows:

Alberta		5
Saskatchewan		4
Manitoba		6
	TOTAL	15

The prime responsibility of the Directorate is to carry out inspections, investigations, sampling and laboratory analysis of foods, drugs, cosmetics, medical and radiation emitting devices in an attempt to ensure their safety to the general public.

c) Permits and Licensing Responsibilities

None.

d) Monitoring and Enforcement

The Market Basket Survey, which began in 1967, is used by Health and Welfare Canada to monitor the residue levels of certain pesticides and trace metals which may be present in the average daily diet of Canadians.

Inspectors purchase food specimens, comprising a representative diet, from supermarkets. These samples are shipped to the laboratory and prior to analysis are prepared by a method similar to that used in a household.

The sampling schedule is developed in Ottawa each year for a national integrated and comprehensive program.

In addition to the Market Basket Survey, Inspectors sample foods at the producer, retailer and import level to ensure that foods being sold to wholesalers are in compliance with the regulations.

Residue levels are compared with the regulations to determine compliance. In those instances where the food is not covered in the regulations, the Department compares results with previously established guideline levels.

The presence of unacceptable residue levels will result in an investigation being carried out to determine the cause of the problem. The degree of enforcement depends on the residue concentration found. Over the past several years, there has been only one case in the Prairie Provinces where contamination was at such a level that sale of the product was stopped.

e) Inventory Mechanisms

None.

f) Public Information

Education Services, within the Field Operations Directorate, explains Health Protection Branch activities and policies to the public and acts as the liaison between consumers and the Health Protection Branch.

The publication "Protection" is issued four to six times per year. It includes information of inspection and enforcement activities of the Health Protection Branch. This replaced the publication "Rx Bulletin".

g) Problems and Concerns

The Field Operations Directorate indicated that agricultural chemicals are not a significant concern, based on their food monitoring results.

2.4 ADVISORY COMMITTEES

Information is provided in this section on the pesticide advisory committees which have been established by the Federal Government.

Most of the committees are intergovernmental, meaning that members represent both the Federal and Provincial Governments and in some cases also represent universities and the private sector. A few of the committees are interdepartmental, meaning that members represent only Federal departments or agencies.

One of the committees does not fall into the two above classifications because it is within a single department. Another group, although not a committee, is also discussed because of its importance as an advisory body.

2.4.1 Intergovernmental Committees

a) Canadian Agricultural Services Coordinating Committee (CASCC)

This is the most powerful and influential agricultural committee in Canada, CASCC is not responsible to any outside authorities but is responsible only to itself. Each member, responsible to his own superior, is enabled to make decisions and recommendations in light of the collective judgement of CASCC. The primary objective is to coordinate the total national effort toward economic and social development of the agricultural industry and to promote optimum utilization of manpower and financial resources within and between the various operational agencies.

The Deputy Minister, Agriculture Canada, is Chairman of CASCC and uses Department resources as required to fulfill secretariat functions. The Assistant Deputy Minister (Research) is delegated the immediate responsibility for day-to-day activities.

As of April, 1977 the membership included the following:

Provincial Deputy Ministers	10
Deans, Colleges of Agriculture (including National Science Advisory Council)	8
Deans, Colleges of Veterinary Medicine	3
Executive Director, Education, Research and Special Services Division, Ontario	1
Chairman, Council of Research and Agricultural Services (Quebec)	1
Agricultural Institute of Canada	1
National Research Council	1
Statistics Canada, Agriculture Division	1
Agriculture Canada	9
Agricultural Economics Research Council	1
TOTAL	36

CASCC sets up Canada Committees as required, in particular areas to recognize and address problems and recommend activities which should contribute to their solution. Membership on the Canada Committees generally includes an expert from each of the seven agricultural regions plus experts from the Federal Government and industry. The specific committees are as follows:

1. Canada Committee on Forage Crops Breeding
2. Canada Committee on Soil Survey
3. Canada Committee on Soil Fertility
* 4. Canada Committee on Agrometeorology
* 5. Canada Committee on Pesticide Use in Agriculture
* 6. Canada Weed Committee
7. Canada Committee on Plant Gene Resources
8. Canada Committee on Grain Breeding
* 9. Canada Committee on Grain Diseases
10. Canada Committee on Grain Quality
11. Canada Committee on Animal Nutrition
12. Canada Committee on Meat
13. Canada Animal Health Committee
14. Canada Committee on Agricultural Engineering

*15. Canada Committee on Biting Flies
16. Canada Farm Management Committee
17. Cooperative Committee on Agricultural Communications

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* These committees are discussed in detail later in this report.

CASCC coordinates the following three major groups, in addition to the Canada Committees:

1. Provincial or Regional Agricultural Services Coordinating Committees (ASCC's).

2. Canadian Agricultural Research Council (CARC).

3. General Services Section.

CASCC considers the recommendations of the Provincial or regional ASCC's, the Canada Committees, the Canada Agricultural Research Council, and, where appropriate, recommends action by one or more of the agencies represented by its members. Assignments to the Canada Committees and to the Canada Agricultural Research Council arise out of its deliberations.

Work and accomplishments of CASCC related to pesticides are discussed in this report under the five committees identified previously.

b) Canada Weed Committee (CWC)

The CWC was formed by and reports to CASCC. Its purpose is outlined in the following terms of reference:

- To coordinate activities of Agriculture Canada, universities, industry and provincial departments of agriculture that pertains to research on weeds and weed control. This includes work on surfactants, desiccants and top-killers where they concern weed control.

- To encourage agreement of outlook on regulations covering herbicide usage, residues, pollution, weed seeds and control of noxious weeds among Food and Drug, regulatory, industry and extension and research personnel to minimize conflict of aims.

- To publish annually abstracts of current research, minutes and proceedings of minutes to make current information available to workers.

- To review annually results of current work and suggest up-to-date control measures for consideration of provincial extension workers, of provincial and federal regulatory workers and of industry. This is to encourage uniformity in recommendations available to the public across the country.

- To establish preferred terminology for weeds and herbicides and encourage use of uniform units of measurement in scientific and extension literature on weed control. Arrange for publication of adopted names where desirable. These activities should minimize chances of confusion and errors by workers and by the public.

- To encourage liaison with weed scientists and weed societies outside of Canada to benefit from knowledge available from these sources.

- To encourage safe use of herbicides and prevention of pollution of air, soil and water by herbicides through extension and public relations activities. This is to ensure that benefits from weed control and hazards of herbicides are placed before the public in their proper perspective.

- To make recommendations to CASCC on

  a) weed problems in Canada
  b) weed research in Canada
  c) regulations governing weeds, weed control and herbicides

The Canada Weed Committee is organized as follows:

- National Executive which meets annually, alternating between the east and west. Membership is given below.

- Western and Eastern Sections which meet annually in each Province on a rotating basis and are made up of anyone working in the weed control field, approximately 250 persons are in each section. Each section has an executive and sub-committees.

The National Executive of the CWC is made up of the following members (1977):

Atlantic Provinces	1
Quebec	1
Ontario	1
Manitoba	1
Saskatchewan	1
Alberta	1
British Columbia	1
Agriculture Canada	4
CWC Sub-committees	3
Health and Welfare Canada	1
Fisheries and Environment Canada	1
Canadian Agricultural Chemicals Association	1
TOTAL	17

Both the Eastern and Western Sections of the Canada Weed Committee issue the following major publications each year:

Research Report - consists of summaries and abstracts of weed control research conducted in Western or Eastern Canada.

Report of the Research Appraisal and Research Planning Committee - this report reviews all current treatments and updates these and places herbicides into either Category A (one more year of testing needed) or Category B (more than one year of testing needed).

The CWC has also published a Position Statement on Herbicide Use which discusses the benefits and problems associated with herbicide use.

A sub-committee has been appointed to oversee publication of a series of papers on Biology of Canadian Weeds appearing in the Canadian Journal of Plant Science. Another sub-committee is revising the publication "Common and Botanical Names of Weeds in Canada".

c) Canada Committee on Biting Flies (CCBF)

This committee, responsible to CASCC, was formed in 1973 and is chaired by the Entomology Research Coordinator, Research Branch, Agriculture Canada, Ottawa.

The CCBF is responsible for analyzing the problem of biting flies in Canada and recommending activities which will contribute to a solution of the problem. One vehicle devised by the Committee for carrying out this responsibility is the Canada Biting Flies Newsletter. The Newsletter was originally planned to be issued once or twice each year, however only two have been produced since 1973; one in July 1974 and the latest in February 1976.

Membership of the CCBF for 1976-77 is as follows:

Agriculture Canada	4
Health and Welfare Canada	1
Indian and Northern Affairs	1
Fisheries and Environment Canada	1
Defence Research	1

National Research Council	1
Alberta Environment	1
Saskatchewan Agriculture	1
Manitoba Agriculture	1
British Columbia Agriculture	1
Universities	4
Biosystematics Research Institute	1
Health of Animals, Sackville	1
TOTAL	19

The Canada Committee on Biting Flies has carried out the following work since 1974:

- preparation and distribution of preliminary list of Biting Fly workers and interested persons

- formation of a Canadian Centre for Biting Flies Studies has been strongly recommended

- application of radar techniques to biting flies dispersal has been recommended

- grant applications have been referred to CCBF for evaluation

Meetings are held once or twice a year, with the locations rotated across Canada and approximately every second meeting held in Ottawa.

The CCBF has no regulatory or statutory powers, its power is through compilation of guidelines and recommended controls and through recommendations to CASCC.

d) Canada Committee on Agrometeorology

This committee reports to CASCC but does not normally become involved with pesticides. However, the committee prepared a report entitled "Meteorological Aspects of Pollution in Relation to Agricultural Pesticides", January 1971.

The report consists of seven papers which deal with the various phases of pesticide transport in the atmospheric cycle. This report is available from the Agrometeorology Section, Research Branch, Agriculture Canada in Ottawa.

e) Canada Committee on Grain Diseases (CCGD)

Sub-Committee on Chemical Control. The Canada Committee on Grain Diseases is one of the 16 national committees under the authority of CASCC. The Sub-Committee on Chemical Control (formerly Fungicides and Smuts) is one of three sub-committees. Terms of reference of the CCGD are as follows:

- To promote exchange of information and cooperation between individuals and agencies engaged in research on diseases of grains, including cereals and oil seed crops.

- To obtain information, through sub-committees, on the occurrence, cause and control of grain diseases, research progress and on new and noteworthy problems requiring investigations and increased support.

- To meet annually to review the above information and to promote and coordinate investigations that will help to achieve maximum efficiency in the understanding and control of grain diseases.

- To advise other appropriate national committees of the disease reaction of lines and varieties of cereals and oil seed crops under test.

- To report annually to CASCC and when desirable to make recommendations for action on current problems.

The CCGD is chaired by the Coordinator of Plant Pathology, Research Branch, Agriculture Canada. Membership is as follows:

Agriculture Canada		10
Alberta Agriculture		1
British Columbia Agriculture		1
Universities		4
	TOTAL	16

The sub-committee on Chemical Control has recently developed standardized procedures for inocculating cereal seed with smut and applying seed dressings for national evaluation trials. A national research program on root and leaf diseases of barley was established by the sub-committee.

The sub-committee was also instrumental in developing for the three Prairies Provinces uniform seed treatment recommendations which are issued annually.

The aspects of fungicides handled relate to biological effectiveness, registration and use.

The CCGD meets annually on a rotating basis at Edmonton, Saskatoon and Winnipeg and has no statutory powers.

f) Canada Committee on Pesticide Use in Agriculture (CCPUA)

The Canada Committee on Pesticide Use in Agriculture was known as the National Committee on Pesticide Use in Agriculture prior to 1969. It was formed in 1961 by its parent body, the National Coordinating Committee on Agricultural Services (now called CASCC).

The CCPUA is chaired by the Research Coordinator for Environment and Resources, Research Branch, Agriculture Canada, Ottawa. It is a permanent committee which meets annually in Ottawa and reports to CASCC. The 1977 membership is as follows:

Agriculture Canada	9
Fisheries and Environment Canada	1
Health and Welfare Canada	1
Alberta Agriculture	1
Manitoba Department of Agriculture	1
Quebec Department of Agriculture	1
Canadian Agricultural Chemicals Association	1
University of Saskatchewan	1
University of Guelph	1
TOTAL	17

The CCPUA is advisory in nature and action can only result from recommendations to CASCC.

The terms of reference of the CCPUA are as follows:

- To define problems in crop and animal protection and stimulate research by all the Canadian agencies who have an interest in the field of livestock, fruit, vegetables, cereal, and forage protection through the use of pesticides.

- To summarize, interpret and make available current information on crop and animal protection materials, methods and domestic and foreign regulations that have a bearing on their use.

- To promote agreement on a set of uniform principles and criteria to be employed in drafting local recommendations for pesticide use.

It should be pointed out that the CCPUA activities exclude herbicides which are dealt with by the Canada Weed Committee.

The CCPUA receives reports from and provides a central forum for coordination and information exchange between three major committees which serve the Western Provinces. These three Committees are listed below and discussed in detail later in this section:

1. Western Committee on Livestock Pests (WCLP).
2. Western Committee on Crop Pests (WCCP).
3. Western Committee on Plant Disease Control (WCPDC).

In addition, progress reports are received from many other pesticide committees since members of the CCPUA are also members of other committees, such as the Canadian Association of Pesticide Control Officials (CAPCO), the Codex Committee on Pesticide Residues and the NRC Sub-committee on Pesticides and Related Compounds.

An important contribution of the CCPUA is the compilation and publication of the annual Pesticide Research Report. This report contains a compilation and summary of research reports and pertinent data on crop and animal protection involving pesticides. The report may be obtained from the Pesticide Information Liaison Section, Research Branch, Agriculture Canada, Ottawa. The 1976 Report, 451 pages long, covered 259 research reports and provided a bibliography of some current publications.

A summary of the major work and accomplishments over the last three years is as follows:

- the establishment of a National Pesticide Check Sample Program under the Federal Interdepartmental Committee on Pesticides (FICP) via a recommendation to CASCC and through the authorization of CASCC to set up the program

- the coordination of a program to obtain residue data required for pesticide registrations for use on minor crops

- initiated action on obtaining better information on statistics of pesticide use in Canada

- initiated action on the establishment of a central data bank for pesticide evaluation and residue data obtained from supervised field trials

The CCPUA also holds annual Western and Eastern Forums which are regional meetings chaired by the CCPUA chairman. Business of the CCPUA is discussed and recommendations are put forward to the CCPUA. The Western Forum meeting provides an opportunity for representatives of the WCCP, WCLP, and WCPDC to present reports and concerns. These are also discussed and recommendations made to the CCPUA. The Western Forum meetings are held at different Agriculture Canada Research Stations throughout the four Western Provinces.

The reporting relationships of the CCPUA are shown in Figure 4.

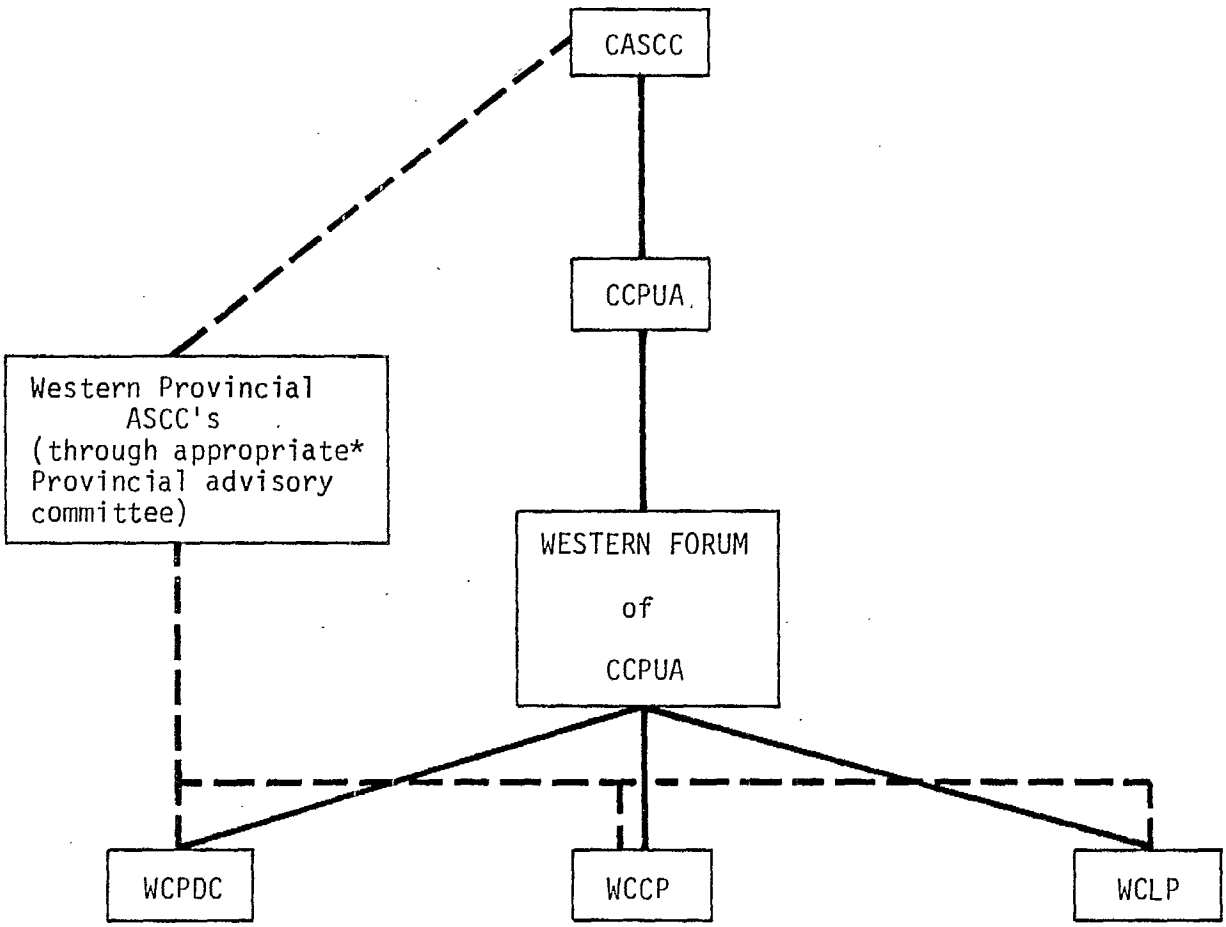
g) Western Committee on Livestock Pests (WCLP)

The WCLP was established as the Western Regional Committee on Recommendations for Pesticides on Livestock in 1960. The WCLP preceded the formation of the CCPUA, but subsequently affiliated with the CCPUA in 1967.

The WCLP, WCCP and the WCPDC all meet annually, under the aegis of the CCPUA, at the Western Forum.

The WCLP is currently chaired by a Research Scientist from the Lethbridge Research Station, Agriculture Canada. It has a maximum of 15 permanent members but currently has 14 members, as follows:

Agriculture Canada	5
British Columbia Agriculture	1
Alberta Agriculture	1
Alberta Environment	1
Saskatchewan Agriculture	1
Manitoba Agriculture	2
Animal Diseases Research Institute (western)	1
University of Saskatchewan	1
Canadian Agricultural Chemicals Association	1
TOTAL	14



*For example, in Alberta, the regional committees can communicate with the ASCC through the Pest Control Advisory Committee.
CASCC - Canadian Agricultural Coordinating Committee.
CCPUA - Canada Committee on Pesticide Use in Agriculture.
ASCC's - Agricultural Services Coordinating Committees.
WCPDC - Western Committee on Plant Disease Control.
WCCP - Western Committee on Crop Pests.
WCLP - Western Committee on Livestock Pests.

FIGURE 4 - CANADA COMMITTEE ON PESTICIDE USE IN AGRICULTURE REPORTING RELATIONSHIPS

Many others also attend the meeting; for example, 37 non-voting members attended the 1975 meeting.

The terms of reference of the WCLP are as follows:

- To reappraise annually and, if necessary, revise livestock pest control recommendations in accordance with current or recently available information.

- To be responsible for reviewing existing recommendations and compiling and editing a revised list of recommendations.

- To provide a scientific completeness and basis for pesticide recommendations.

- To evaluate the economy of treatments to the livestock grower but as a matter of policy should not state preferences for materials.

- To take responsibility for making recommendations to the Pesticide Information Liaison Section for consideration under the Pesticide Control Products Act when products, labels, or methods of application are considered inadequate, unsuitable or unsafe in the Prairie regions.

- To make recommendations available to agricultural extension services in the Prairie regions.

- On the basis of Prairie conditions, to take responsibility for recommendations on revisions to the PCP Act in the mutual interest of livestock growers and pesticide manufacturers concerning changing requirements for pesticides.

The Western Committee on Livestock Pests meets the majority of the above responsibilities by producing annually the "Guide for Recommendations in the Control of Livestock Insects in Western Provinces". This Guide is for Agriculture Departments and not for general circulation or publication.

Most of the committee's recommendations are for application of pesticides directly to livestock. However, in recent years attention has shifted to livestock pests whose control requires treatment of the environment; examples are, black flies, mosquitoes and ticks. Sub-committees have investigated the feasibility of making these recommendations and reports have been presented at WCLP meetings on this type of control.

The WCLP has recommended an economics study of livestock pests as a basis for reasoned use of pesticides; this study is underway.

Similar to other committees, the WCLP does not have regulatory or statutory powers.

h) Western Committee on Crop Pests (WCCP)

The WCCP was established in 1963 as a regional committee under the CCPUA by Agriculture Canada. Its terms of reference are as follows:

- To provide a scientific basis for pesticide recommendations for crop pests.

- To review research and define research which is required.

- To stimulate regional cooperation and coordination.

- To provide a guide on insecticide recommendations for crop pests that can be used to develop Provincial recommendations.

The WCCP chairmanship changes annually depending on the site of the meeting. The membership is taken from the following:

Agriculture Canada
Fisheries and Environment Canada
Health and Welfare Canada
Manitoba Agriculture
Saskatchewan Agriculture
Alberta Agriculture
British Columbia Agriculture
Universities
Canadian Agricultural Chemical Association

There are seven sub-committees which issue recommendations for the following:

- insect and related pests of crops
- home gardens
- shelter belts
- ornamental trees and shrubs
- households
- warehouses
- farm-stored grain

An important achievement of this Committee is the Annual Report of the Western Committee on Crop Pests which is distributed to the members. Each report supersedes the previous one. Recommendations are provided for control of pests by applicable insecticides, their application rates and use restrictions.

The WCCP has also set up a contingency residue program for establishing residue levels in major crops. Furthermore, the Annual Report includes an Appendix on Hazards to Bees which provides recommendations to reduce bee poisoning.

The WCCP meets annually during the three-day Western Forum meeting and presents its report to the Western Forum, CCPUA meeting which is held on the last day.

The Western Committee on Crop Pests does not have any regulatory powers but provides advice and recommendations to Provincial and Federal departments, the CCPUA and through the CCPUA to CASCC.

i) Western Committee on Plant Disease Control (WCPDC)

The Western Committee on Plant Disease Control is a new committee, having been formally organized in February 1976. It is currently chaired by a Research Scientist from the Lethbridge Research Station. The WCPDC is an advisory body whose objective is to promote the development and adoption of sound control measures for plant diseases of regional concern in the four Western Provinces.

Terms of reference for the WCPDC are as follows:

- To compile a set of well-documented measures for the control of regionally important plant diseases as a basis for Provincial recommendations.

- To provide a means for regularly reviewing control measures so that information on new disease control products, resistant varieties, regulatory proposals, or other control measures can be evaluated and recommended, where appropriate.

- To identify disease problems where further investigation is necessary and indicate what studies are required and where they should be undertaken.

- To alert plant pathologists and regulatory personnel within the region to new disease problems that are of general concern so that coordinated control measures can be adopted.

- To increase the effectiveness of those solving plant disease control problems by sharing the expertise and experience of personnel within the region.

Membership in the WCPDC is open to Provincial, Federal and university personnel concerned with plant disease control in the four Western Provinces, and other invited persons. The Executive Committee is currently made up of the following:

British Columbia Agriculture	2
Alberta Agriculture	1
Saskatchewan Agriculture	2
Manitoba Agriculture	2
Fisheries and Environment Canada (CFS)	1
Agriculture Canada	7
TOTAL	15

In addition, there are personnel advisory to the Executive Committee who represent the following:

Agriculture Canada
Fisheries and Environment Canada (EPS)
Health and Welfare Canada
Alberta Environment
Canadian Agricultural Chemicals Association

The WCPDC has held one meeting (Part of the 1976 Western Forum meeting), since its inception. There are 11 commodity sub-committees which are compiling a set of measures for the control of regionally important diseases.

j) NRC Associate Committee on Agricultural and Forestry Aviation (ACAFA)

This National Research Council (NRC) Associate Committee is concerned principally with the use of aircraft for application of pesticides and with the safety aspects of aerial application, that is, the protection from poisoning of personnel preparing and loading spray mixtures. The Committee is interested in the methods, techniques and equipment used to apply pesticides from the air.

The terms of reference for ACAFA are as follows:

- To act for the national benefit.

- To review, promote and advise on research and development programs in the following areas:

  i) the design and performance of equipment for the dispersal of materials from aircraft

  ii) the design and performance of aircraft as prime movers of this equipment

  iii) the assessment and prediction of the performance of aircraft/equipment combinations

  iv) the improvement of operational techniques, including ground control systems

  v) the problems of chemical safety and flight safety.

- To analyze and synthesize pertinent scientific information and to promote the availability and application of the resultant data.

- To liaise and cooperate with other national, Provincial and international organizations.

- To be concerned with problems of public health relating to aerial applications.

Memberships of the Executive Committee is as follows:

NRC	2
Fisheries and Environment Canada	1
Agriculture Canada	1
National Defence	1
Health and Welfare Canada	1
Transport Canada	1
Private Representative of Aerial Sprayers	1
TOTAL	8

There are also a number of other members representing both the government and private sectors.

The ACAFA usually meets twice per year in Ottawa and reports to the President of the National Research Council.

Since 1965, ACAFA has been responsible for publication of sixteen reports and technical notes. Recently, the Associate Committee sponsored a Symposium on Operational Safety and Environmental Safety. The Symposium concentrated on the three main areas of engineering, chemical and environmental safety.

The Committee has become less involved in the publication of Technical Notes and Safety Handbooks and more orientated to research needs of the aerial application industry. The thrust is now towards identification of basic problems and advising appropriate agencies of the need to carry out the necessary research.

k) NRC Associate Committee on Scientific Criteria for Environmental Quality - Sub-committee on Pesticides and Related Compounds

This Associate Committee was established by the NRC in response to a Federal mandate to develop scientific guidelines for defining the quality of the environment. The concern of the Associate Committee is strictly with scientific criteria. The evaluation of information on the probability of effects of contaminants on receptors together with the related fundamental principles and scientific knowledge are included.

Members serve voluntarily and are selected for their competence and relevant experience with due consideration for a balance among all sectors in Canada.

The Sub-committee on Pesticides and Related Compounds is made up of the following:

Canadian Agricultural Chemicals Association	1
NRC	1
Health and Welfare Canada	2
York University	1
Agriculture Canada	2
Fisheries and Environment Canada	2
TOTAL	9

Reports have been published on effects of the following pesticides:

- Picloram
- Chlordane
- Endosulfan
- Methoxychlor
- Fenitrothion
- Bacillus thuringiensis

Current panel topics are the following:

- PCB's
- chlorpyrifos
- phenoxy herbicides
- baygon
- carbofuran

Panelists normally are not sub-committee members but are selected specifically for one panel.

The sub-committee also recently sponsored an International Symposium on the Long Term Effects of Fenitrothion.

1) PFRA Herbicide Committee

The Prairie Farm Rehabilitation Administration (PFRA), Department of Regional Economic Expansion (DREE) Herbicide Committee was established in 1965 to provide PFRA officers an opportunity to discuss herbicide use and weed control problems with fellow officers, operational officers of other agencies, researchers and weed control extension specialists. The Committee was organized initially because of vegetation problems in irrigation projects; however, it now encompasses all herbicide uses and weed problems.

The Committee is chaired by a PFRA official from Regina and the membership is as follows:

PFRA	7
Saskatchewan Agriculture	5
Saskatchewan Environment	1
Agriculture Canada	3
Fisheries and Environment Canada	2
TOTAL	18

The Committee meets once a year, usually in Regina.

The Committee has been of particular value to the PFRA as a vehicle for reporting details of herbicide programs and proposal programs to the Federal Interdepartmental Committee on Pesticides (FICP). The annual report of the PFRA Herbicide Committee is used as the submission to the FICP.

The PFRA uses herbicides in the following four activities:

- flood control dykes along the Assiniboine River between Portage la Prairie and Winnipeg (total of approximately 60 miles)

- 95 community pastures in the Prairie Provinces totalling nearly 2.5 million acres

- Tree Nursery at Indian Head, Saskatchewan and associated demonstration plots

- Southwest Saskatchewan irrigation projects and the irrigation Demonstration Farm at Outlook, Saskatchewan (the farm occupies 160 acres)

This wide variety of activities indicates the need for this coordinating committee.

A number of research projects and technical observation studies have been initiated or stimulated to solve operational problems. Researchers and extension specialists benefit from the opportunity to observe large scale herbicide applications and obtain feedback on recommended practices.

The Committee has no statutory powers but is responsible to DREE Headquarters for ensuring that the extensive PFRA herbicide programs are being handled in an acceptable and scientific manner.

2.4.2 Interdepartmental Committees

a) Federal Interdepartmental Committee on Pesticides (FICP)

This committee is always chaired by the Assistant Deputy Minister (Research) Agriculture Canada. Federal departments with membership on the Committee are as follows:

Agriculture Canada
Consumer and Corporate Affairs
National Defence
Fisheries and Environment Canada
Indian Affairs and Northern Development
Health and Welfare Canada
National Research Council

The regular membership is essentially a technical group appointed by the respective Ministers. The FICP was, initially in 1962, an ad hoc committee but in July 1964, the Federal Cabinet approved its formation acting upon a recommendation from the House of Commons Special Committee on Food and Drugs. The terms of reference recommended by that Special Committee relate mainly to keeping the total pesticide problem under review and advising the Government accordingly.

It is empowered to concern itself with the entire pesticide situation in Canada, including the following:

- Federal, Provincial, municipal and industrial sectors
- civil and military implications
- interests in agriculture, fisheries, forestry, wildlife, water, health, transportation and recreation
- regulatory, research, educational, extension and public relations aspects

The FICP is required to take the initiative in advising the Federal Government on regional, national and international pesticide problems and is the main source of information and guidance on all such matters.

The term "pesticides" is interpreted broadly by the FICP to include all types of formulation. It includes not only the common pest control products but also plant top killers, crop thinners and sprout inhibitors; and the term embraces compounds used in fertilizers, animal feeds, houses and other buildings (as fumigants), for mothproofing of garments and furniture and for wood preservation.

The FICP is purely advisory and consultative, having no executive or operational role or mandatory powers. Therefore the Committee must influence by factual presentation, weight of opinion and ministerial status.

Deliberations are confidential and it reports to the Minister of Agriculture with copies of proceedings sent to other Ministers whose departments have committee representation.

The Committee is required under its original terms of reference to meet at least twice per year. A spring and fall meeting, both in Ottawa, are normally held with the Chairman having the option of calling a special meeting at any time. Federal Departments and Agencies are invited to present annual proposed pesticide programs to the FICP spring meeting for consideration and approval. The extent of compliance with this is unknown.

Information on the Committee's last three years of work and accomplishments was not obtainable due to confidentiality. However, one major responsibility is the annual review and approval of Federal Government pesticide programs.

Information which was made available indicated that the FICP has encouraged development and revisions in pesticide legislation such as the Pest Control Products Act. In addition, it has formed many ad hoc sub-committees to study issues such as the use of mercury and restriction of the use of DDT. A recent ad hoc sub-committee explored methods of strengthening and saving the Check Sample Program on Pesticide Residue Analysis. Results of this investigation led to the formation of the FICP Check Sample Coordinating Committee which is discussed below.

b) FICP Check Sample Coordinating Committee

This coordinating committee is a very active committee responsible for ensuring that pesticide standards, check samples and analytical procedures are available to interested groups. The committee is attempting to continuously improve pesticide residue testing methodology in Canada.

The FICP Check Sample Coordinating Committee resulted from the CCPUA Check Sample Program which was initiated in 1967. Problems arising from this original program were referred to the FICP for solution. In 1975 the FICP established an ad hoc sub-committee which developed a "ways and means" report for implementation of an improved check sample program. This implementation report was adopted and included the following recommendations:

- the program must include all sample substrates as require, e.g., animal feeds, food, soil, environmental sample (fish, wildlife, etc.) and water

- the program must include all pesticide residues and polychlorinated biphenyls

- a central pesticide reference standards laboratory and repository must be established to service all residue laboratories in Canada

- the program must be run by experts and the FICP must take leadership in the efforts to convince management that the program is a priority duty of these scientists

Members are appointed by seven lead agencies for coordination of the seven sub-programs as follows:

Feeds	-	Agriculture Canada
Soils	-	Agriculture Canada
Foods	-	Health and Welfare Canada
Aquatic Substrates (water)	-	Fisheries and Environment Canada
Aquatic Substrates (biotic)	-	Fisheries and Environment Canada
Forest Substrates	-	Fisheries and Environment Canada
Wildlife Substrates	-	Fisheries and Environment Canada

The committee currently is coordinated by the Pesticide Laboratory Head, Control Products Section, Agriculture Canada. It meets as required, approximately once per year.

Participant laboratories in the Prairie Provinces and for Canada are as follows:

	Provincial	Federal	University	Other	Total
Alberta	2	-	-	-	2
Manitoba	2	3	1	-	6
Saskatchewan	2	3	-	-	5
Canada	12	33	3	1	49

Since its formation the FICP Check Sample Program has carried out two major studies:

- Detector linearity and sensitivity (June-August, 1976)
- Analysis of standard solutions (January-April, 1977)

These studies were carried out in addition to the routine distribution of sub-program substrates which occur 2 to 4 times per year depending upon the sub-program.

The committee reports only to the FICP parent body and has no statutory powers.

c) Interdepartmental Codex Committee on Pesticide Residues (CCPR)

This is a Federal committee which meets monthly in Ottawa and has representatives from the following departments:

- Agriculture Canada
- Health and Welfare Canada
- Industry, Trade and Commerce

It is chaired by the Research Coordinator for Environment and Resources, Research Branch, Agriculture Canada.

The terms of reference are to review material received from the parent committees, the Interdepartmental Committee on Codex Alimentarius, and the FAO/WHO Codex Alimentarius Commission in order to prepare a Canadian position and comments for the annual meeting of the parent international committee.

The role of the CCPR is to establish agreed international tolerances of pesticide residues in specific foods.

It is impossible to summarize briefly the last three years work due to the volume of material handled. Canada has been active in preparing the "Good Agricultural Practice" report and in Working Groups on Analytical Methodology, Priorities and Sampling. Large quantities of data have been submitted to the FAO/WHO Expert Committee on Pesticide Residues which meets yearly to evaluate data.

The CCPR reports to the Interdepartmental Committee on Codex Alimentarius.

2.4.3 Departmental Committees

a) Department of Fisheries and Environment (DFE) Regional Contaminants Committee

This committee was organized in 1977. It was authorized by and receives functional direction from the Western and Northern Regional Board of DFE. The present membership is as follows:

Environmental Protection Service (chairman)	1
Fisheries and Marine Service	1
Atmospheric Environment Service	1
Environmental Management Service	1
TOTAL	4

Terms of reference for the committee include:

- to serve as an information exchange between the DFE regional services and to coordinate research and regulatory activities with respect to environmental contaminants, through defining and priorizing regional problems which should be addressed.

- to provide a focus of attention and a source of information on environmental contaminants in the broadest sense, including organic chemicals, heavy metals, nutrients, other inorganic chemicals, pesticides and radionuclides.

- to conduct assignments for the Regional Steering and Coordination Committee (RSCC) at the request of the chairman of the RSCC and to keep the RSCC Secretariat informed concerning all activities which relate to new developments having potential environmental impacts.

The powers of the committee are only advisory, it has no regulatory authority.

2.4.4 Other Advisory Bodies

a) Canadian Association of Pesticide Control Officials (CAPCO)

CAPCO is an independent organization composed of members of Federal and Provincial pesticide regulatory agencies. Members report on the deliberations and recommendations to their own agencies.

The concept of CAPCO originated in 1970 at the annual meeting of the Agricultural Pesticides Society. The founding meeting was in 1973 and the terms of reference and constitution were approved in 1975.

The Association is dedicated to the sound management of pest control products to assure effective use while assuring the protection of public health and of environmental quality. The objects of the Association are briefly stated below:

- To provide for the exchange of technical and regulatory information among Federal and Provincial agencies, taking into account the various disciplinary and other regulatory interests relating to safety and utility of pesticides.

- To provide for the cooperative study of regulatory problems in respect to pest control products and to make recommendations for their resolution.

- To identify information deficiencies which require research and investigatory programs on pest control products and their effects.

- To make recommendations on standards and guidelines to facilitate the regulation of pest control products in a manner that is consistent among agencies.

- To make recommendations in respect to new or revised regulations when required in order to cope with changing conditions in the marketing and use of pest control products.

The President and Vice-President hold offices usually for one year. Members are official representatives of agencies charged by Federal or Provincial law to control the manufacture, importation, distribution, storage, display, use or residues of pest control products in Canada.

Membership is allocated on the basis of two members each from the Federal Departments of Agriculture, Health and Welfare, Fisheries and Environment, and two from each of the Provinces and Territories that comprise Canada. Representation from the pesticide industry is provided in the form of official observers. In addition, there are a number of Regulatory Associates and Management Associates who attend the committee meetings, as required.

Meetings are usually held twice per year during April and November. Location of these meetings in the past has been rotated once in Ottawa and once in a Provincial city, but beginning in 1977 rotation is east to west.

CAPCO has established a Regulatory Procedures Committee which is charged to develop and recommend Guidelines on Regulatory Procedures in the Investigation of Pesticide Problems. The guidelines will suggest how to proceed with investigations and liaison procedures among regulatory agencies. They will set out channels of communication that recognize interested and responsible agencies, regarding food residues or environmental problems.

CAPCO also has committees which deal with classification of pest control products, with education, training and licensing and with pesticide disposal procedures.

b) Annual Forest Pest Control Forum (AFPCF)

The Annual Forest Pest Control Forum (formerly the long-standing Interdepartmental Committee on Forest Spraying Operations) is held under the aegis of the Canadian Forestry Service (CFS) of Fisheries and Environment Canada. It is a meeting to provide representatives of Provincial and Federal Governments and private agencies an opportunity to review and discuss forest pest control operations in Canada. Related research and forest pest conditions that might require control action in the upcoming year are also discussed.

The annual meeting is called by the Director General of Forestry and is held in Ottawa. There are no members but there are representatives from the following organizations (based on the 1975 attendance record):

Fisheries and Environment Canada:		
	CFS	24
	F&MS	6
	CWS	3
	EPS	3
	IWD	1
	EMS	1
Health and Welfare Canada		1
Indian and Northern Affairs		2
Agriculture Canada		2
Newfoundland		1
Prince Edward Island		1
Nova Scotia		1
New Brunswick		1
Quebec		4
Ontario		1
British Columbia		1
Private		5
Maine Department of Conservation		1
United States Forest Service		1
	TOTAL	60

The major agenda item for these meetings is usually the spruce budworm and reports for each Province on control of this forest pest are presented on the following topics:

- operations
- technical services and assessments
- environmental monitoring
- prospects and plans for the next year

Reports are also presented on research and control operations on other pests.

Copies of the minutes of the meeting are sent to the FICP for their information.

From the attendance list, it can be seen that no one from the Prairie Provinces provincial governments usually attends. It is understood however, that the Alberta Forestry Service was represented at the November 1976 Forum.

This lack of attendance can be expected since Saskatchewan and Alberta have no forest spray programs while Manitoba has only a small program.

SECTION 3

ALBERTA

Pesticide regulation and control in Alberta is essentially a joint responsibility of the Department of Agriculture and the Department of Environment. A number of other Acts administered by the Department of Social Services and Community Health, the Alberta Pharmaceutical Association, the Department of Municipal Affairs, the Environment Conservation Authority, and the Department of Recreation, Parks and Wildlife also have some bearing on the control of pests and regulation of pesticides. These other Acts are discussed in Section 3.3.

The Agricultural Chemicals Act, administered by Alberta Environment, deals directly with the handling and use of pesticides. Other Acts administered by the various agencies mentioned above control the application of pesticides, regulate the sale of some chemicals, and prohibit the contamination of a number of food products and natural resources.

3.1 ALBERTA ENVIRONMENT

Alberta Environment, established in 1971, was made responsible for the administration of the Agricultural Chemicals Act, previously administered by Alberta Agriculture. This Act provides a focal point for all pesticide control in the Province.

The Clean Air Act and the Clean Water Act administered by Alberta Environment, provide additional but less direct control. Provision is made for the establishment of regulations specifying permissible amounts of deleterious substance which can be discharged into the air or into or near watercourses. A deleterious substance is defined in the Acts as one that is or is likely to be detrimental to life or health or to adversely affect property.

3.1.1 Pollution Control Division

a) Acts, Regulations, Standards and Guidelines

The Pollution Control Division of Alberta Environment is responsible for administering the Agricultural Chemicals Act. It is administered on a local level by municipal governments.

It prescribes the proper use of pesticides in accordance with the Federal Pest Control Products Act.

The Act deals with the safe use, application, handling, storage, keeping, transport and disposal of pesticides. Food, feed or other matter contaminated by a pesticide may be restricted or destroyed by order of the Minister without compensation. Use and application may be suspended or terminated by order of the Minister or an inspector.

A regulations section in the Act permits regulations to be passed by Order in Council on any matters pertaining to pesticides.

The following two regulations are applicable:

Alberta Regulation 89/70 - Regulations Respecting The Use and Handling of Agricultural Chemicals. This regulation provides restrictions for handling pesticides near food, feed or water and prescribes conditions for transport, storage and disposal. Certain chlorinated hydrocarbons have restricted use and other highly toxic pesticides are prohibited for use except under permit or in accordance with the Agricultural Pests Act.

Revision is underway to include the classification of pesticides, training, licensing and requirements of dealers and the regulation of fumigation procedures.

Alberta Regulation 90/70 - Regulations Respecting the Use and Application of Pesticides. This regulation provides for the qualifications, training and licensing of pesticide applicators and the retaining and submission of records of pesticides used.

Currently, a new Chemicals and Pesticides Act for Alberta is in the draft stage; this Act will be more comprehensive than the existing Agricultural Chemicals Act. It is anticipated that the new Act will be brought before the Provincial Legislative in the fall of 1977.

b) Organization and Control Responsibilities

The Pesticide Chemicals Branch of the Pollution Control Division is responsible for administration and enforcement of the Agriculture Chemicals Act and Regulations. The organization of the Branch is shown in Figure 5.

The Enforcement and Licensing Section reviews applications and issues licenses and permits required under the Act. An Enforcement Officer and a Provincial Inspector within the Section are also responsible for enforcing compliance with the Act and Regulations.

ALBERTA ENVIRONMENT

POLLUTION CONTROL DIVISION

Pesticide Chemicals Branch

- Enforcing and Licensing Section
- Aquatic Plant Control Section
- Mosquito Control Section
    - Biological Laboratories (2)

FIGURE 5 - ALBERTA ENVIRONMENT ORGANIZATION

The Aquatic Plant Control Section is concerned with the use of pesticides in or near water; it reviews applications and issues permits to apply chemicals in, on or near water.

The Mosquito Control Section reviews applications by municipalities for financial assistance with their mosquito control programs. Alberta Environment makes available approximately one million dollars for this purpose. It is the responsibility of the Section to ensure an equitable distribution of grants and funding to municipalities receiving assistance.

c) Permit and Licensing Procedures

Commercial Application Licensing. Regulation 90/70 requires that all commercial pesticide applicators be trained and licensed. There are eight classes of pesticide applicator's licenses as listed below:

1. Class A - application of pesticides primarily in agricultural or rural areas;

2. Class B - application of pesticides by a person employed by a government or public agency;

3. Class C - specifically to use or apply seed treatment compounds;

4. Class D - specifically to use or apply pesticides to control or prevent the growth of vegetation on land or in water;

5. Class E - specifically to use or apply pesticides from an airborne machine;

6. Class F - application of pesticides primarily in urban or non-agricultural areas;

7. Class G - application of pesticides primarily in urban or non-agricultural areas specifically for landscaping and garden purposes in cities, towns, villages, parks and recreation areas;

8. Class H - specifically to use or apply pesticides for a special purpose such as the treatment of cattle for members of a co-operative association or any other situation not covered by Classes A to G in this section.

In order to qualify for a license to apply pesticides, the applicant must meet the following four requirements:

i) academic training in the handling and application of pesticides;

ii) experience requirements of the Agricultural Chemicals Advisory Committee;

iii) a medical certificate of health;

iv) evidence that he is covered for public liability and property damage for himself and his employees by a bond or insurance of not less than $100,000 for bodily injury or death and not less than $25,000 for property damage for any one claim.

Training courses for each of the above classes of licenses are offered every three years by Alberta Environment, in conjunction with Alberta Agriculture, Alberta Advanced Education and Alberta Labour.

If the applicant is lacking either training or experience, he may apply for an interim license. If the applicant has no experience and no training, he cannot apply for a license. While holding an interim license, the applicator must fulfill the requirement which he lacks before being issued a pesticide applicator's license.

Federal Government facilities are not bound by the Agricultural Chemicals Act and Regulations, although it is understood that there is a working agreement between the Federal and Provincial Governments. These persons applying chemicals to Federal Government property within Alberta such as personnel with Parks Canada, C.N.R., and at D.N.D. bases have been taking the training courses and obtaining the necessary licenses required of Provincial Government pesticide applicators.

Permit to Apply Chemicals On, In or Near Water. Regulation 89/70 prohibits the application of pesticides near or on any open body of water without a permit. The Pesticide Chemical Branch of Alberta Environment reviews applications and issues these permits.

Permit to Field Test Chemical Pest Control Products. Regulation 89/70 requires that anyone applying unregistered chemicals or using a registered chemical for an application other than that for which it was registered requires a permit. This regulation applies to those persons other than qualified persons employed by universities or other institutions of research and learning or by agencies of Federal or Provincial Governments. The Pesticide Chemicals Branch reviews applications for these permits according to the intended use, location, rate of application and toxicity.

d) Field Monitoring and Enforcement

There are approximately 500 Agricultural Chemical Inspectors in Alberta. The Agricultural Chemicals Act requires every municipality to appoint a sufficient number of inspectors to administer and enforce the Act and Regulations within the municipality. In most cases, these inspectors are the local Agricultural Fieldmen or Public Health Inspectors. In addition, there are approximately 80 Provincial Government Inspectors and five Inspectors within the Pesticide Chemicals Branch of Alberta Environment, designated as Agricultural Chemical Inspectors.

An inspector has the power to suspend or terminate use of an agricultural chemical when in his opinion, its use or method of application may be dangerous to the health of persons or animals. Suspension or termination may be authorized if the agricultural chemical is considered harmful to crops or plant life other than for which it was intended.

The Pesticide Chemicals Branch has three laboratory facilities at its disposal. These include two biological laboratories located in Calgary and Edmonton, which fall directly under control of the Pesticide Chemicals

Branch. These laboratories are used for bioassay testing and species identification, conducted as part of special programs, such as the biting fly program currently in progress. In addition the Pollution Control Laboratory of the Pollution Control Division analyzes for pesticide residues in water samples both on a routine and special investigative basis. If residue testing in plant or animal tissue is required, the Branch relies on the Food Laboratory of Alberta Agriculture.

Although there is no specific program established to examine the effects of pesticides on non-target organisms, this work is carried out indirectly through a number of other programs. For example, Alberta Environment is currently monitoring the effects on non-target organisms of a black fly control program in the Athabasca River.

The Pesticide Chemicals Branch indicated that the effects on non-target organisms are monitored wherever approval is given to apply a new product or where a relatively toxic chemical is applied to a relatively sensitive area.

e) Inventory Mechanisms

All licensed pesticide applicators must submit a record of the amount, type, and location of all pesticides applied in the past year with the application for renewal of their license. Thus, Alberta Environment is able to maintain an inventory of pesticides used by commercial applicators within the Province.

At present however, there is no mechanism for maintaining an inventory of pesticide use by individuals on their own property. It is anticipated that the new Chemicals and Pesticides Control Act will require the licensing of pesticide retailers who will be required to maintain records of all pesticide sales. Thus a much more comprehensive inventory will result. In addition, pesticide chemicals will be classified or scheduled according to toxicity, persistence, volatility and environmental hazard. It is anticipated that purchase of the most toxic classes of chemicals will require the signature of the purchaser and details of the intended application.

Inventory information on the importation of pesticide chemicals into the Province is supplied to Alberta Environment by the Plant Products Division of Agriculture Canada. This information concerns only those chemicals arriving in Alberta from other countries. It does not include the movement of chemicals across Provincial borders.

There are apparently no data available on the quantities of pesticide chemicals produced in the Province.

f) Public Information

Alberta Environment offers courses at technical colleges in Vermilion and Olds to train pesticide applicators. The course at Vermillion is taught by members of the Department of Advanced Education while the course at Olds is coordinated by Alberta Environment and taught by members of various provincial and Federal agencies as well as industry.

In addition, a number of courses are offered throughout the year in district and regional centres for training Agriculture Chemical Inspectors.

g) Problems and Concerns

One of the major problems identified by Alberta Environment was a lack of jurisdiction over the majority of Agricultural Chemical Inspectors. In most cases, the local Agricultural Fieldmen are also the municipalities' Agricultural Chemical Inspectors. Since half the salary is paid by the municipality and half is in the form of a grant from Alberta Agriculture, Alberta Environment has only limited influence regarding the attendance at training courses and the degree of enforcement by these inspectors. A number of inspectors have less training than the applicators in the handling and use of pesticides as they are not required to attend a training course prior to their appointment.

The other area of concern was the lack of sufficient staff (particularly inspectors) and funding to carry out effectively field monitoring programs, enforcement procedures, courses and training programs, extension services to all applicators and a general public information program.

3.2 ALBERTA AGRICULTURE

Alberta Agriculture, prior to the formation of Alberta Environment in 1971, was responsible for administration of the Agricultural Chemicals Act. The Plant Industry Division of Alberta Agriculture is now responsible for administering the Agricultural Pests Act and the Weed Control Act.

The Animal Industry Division administers the Livestock and Livestock Products Act and the Livestock Diseases Act. These Acts deal with pesticide control in only a peripheral manner and are briefly discussed below:

The Livestock and Livestock Products Act. This Act makes provisions for regulations concerning the inspection, analysis, grading, packing and marking of livestock products. Provisions for the detention by inspectors of livestock and livestock products is also included.

The Livestock Diseases Act. This Act specifies authority and procedures for control of livestock diseases. The Act also regulates the sale of medicines but exempts those products registered under the Pest Control Products Act, and the Proprietary or Patent Medicine Act. The requirements for keeping stock pens free of insects, disease-causing bacteria, virus or parasites are given in regulations.

The organization of Alberta Agriculture as it relates to control of pesticides is given in Figure 6.

3.2.1 Plant Industry Division

a) Acts, Regulations, Standards and Guidelines

The two Acts and associated regulations dealing with pesticides and administered by the Plant Industry Division are discussed below.

ALBERTA AGRICULTURE

PLANT INDUSTRY DIVISION

Pest Control Branch

- Plant Industry Laboratory
- Entomology Section
- Plant Pathology Section
- Animal Pests Section

Weed Control Branch

- Weed Control and Herbicides Section
- Weed Research and Development Section
- Special Projects and Communications Section
- Urban and Industrial Vegetation Management Section

FIGURE 6 - ALBERTA AGRICULTURE ORGANIZATION

The Agricultural Pests Act. This Act is administered by Alberta Agriculture provincially and by municipalities locally. It states that every person must take active measures to control certain insects, animals, plants or diseases declared as pests. Provision is made to allow the control of certain insects, animals, plants or diseases declared as nuisances.

The Minister may supply or approve certain pesticides and devices to be used as outlined by the Act and Regulations for the control of specific pests or nuisances. Methods and procedures are prescribed by the Act or the following eight regulations:

i) Alberta Regulation 71/75 - Devices for Coyote Control Regulations
ii) Alberta Regulation 72/75 - Magpie Control Regulations
iii) Alberta Regulation 73/75 - Pest and Nuisance Regulations
iv) Alberta Regulation 74/75 - Rat Control Regulations
v) Alberta Regulation 75/75 - Bacterial Ring Rot Control Regulations
vi) Alberta Regulation 76/75 - Skunk Control Regulations
vii) Alberta Regulation 77/75 - Sodium Fluoroacetate for Coyote Control Regulations
viii) Alberta Regulation 78/75 - Warble Fly Control Regulations

The Weed Control Act. This Act is also administered by Alberta Agriculture provincially and by municipalities locally. This Act, through regulations, names the weeds which are noxious and declares that every person having an interest in land must take active measures to prevent growth of weeds and must destroy them if they are growing.

The Act gives provincial and municipal officials the authority to outline control programs including the use of herbicides, with specific requirements provided by the following Regulations:

i) Alberta Regulation 147/73 - Regulations Designating Plants as Noxious Weeds
ii) Alberta Regulation 148/73 - Regulations Prescribing Forms
iii) Alberta Regulation 74/74 - The Seed Cleaning Plant Regulations

b) Organization and Control Responsibilities

The Pest Control Branch and the Weed Control Branch within the Plant Industry Division deal directly with control of agricultural pests and pesticides.

The Pest Control Branch is charged with the responsibility of administering the Agricultural Pests Act and enforcing the regulations under the Act. The Branch is responsible for ensuring that all persons take active measures on their own land to destroy all animals, birds, insects, plants and diseases declared as pests under the Act, and to ensure that this destruction is carried out in accordance with the following requirements:

1. The Agricultural Pests Act and Regulations

2. The Agricultural Chemicals Act and Regulations

3. The Wildlife Act and Regulations

The Pest Control Branch is subdivided into three sections, Entomology, Plant Pathology, and Animal Pests. Each section has a supervisor and one or more Agricultural Officers as designated by the Agricultural Pests Act, responsible for specific pests. The Branch also operates the Plant Industry Laboratory.

The Weed Control Branch administers the Weed Control Act and Regulations. It is required that all landowners take active measures to destroy all plants on their property declared as noxious weeds under the Act. Other responsibilities include making recommendations on the use of registered herbicides (these are based to a large extent on the annual report of the Canada Weed Committee) and ensuring that restrictions are placed on these herbicides not recommended for Alberta, under the authority of the Agricultural Chemicals Act.

c) Permit and Licensing Procedure

The only licensing carried out by the Plant Industry Division is the annual licensing of seed cleaning plants. Regulation 74/74 under the Weed Control Act requires that a licensing inspector conduct an annual inspection of every seed cleaning plant within his municipality. He must also classify the plant according to the Seed Cleaning Plant Classification Standards set out in the Regulations, and issue a license to the plant in accordance with the Classification Standards.

d) Field Monitoring and Enforcement

The Plant Industry Division conducts a number of field monitoring programs in conjunction with other Divisions within Alberta Agriculture and with Alberta Environment.

The Safe Food Committee, an interdepartmental committee of Alberta Agriculture and Alberta Environment, establishes annual quotas for sampling and analysis of various food commodities for pesticide residues. Foods included are milk, eggs, meat and vegetables produced within Alberta.

Inspectors from each Branch and from Alberta Environment collect samples of these commodities and submit them to the Dairy and Food Products Laboratory (under the direction of the Marketing Section). The Soil and Feed Testing Laboratory within the Soils Branch is also capable of carrying out pesticide residue analysis. Except for the routine monitoring program described above, most pesticide monitoring by Alberta Agriculture is carried out as a result of complaints of crop damage or the appearance of unacceptable residues in food commodities.

If an agricultural producer contacts his local District Agriculturalist or Agricultural Fieldman to report suspected chemical damage to his crop, the Department of Agriculture follows an investigative procedure to diagnose

the cause of the injury. Either the District Agriculturalist or the Agricultural Fieldman then arranges a site visit to inspect the damage completes a case history and takes representative samples of the crop for analysis by the Plant Industry Laboratory. The Laboratory reports its conclusions to the investigator and to the client.

Enforcement of the Agricultural Pests Act and the Weed Control Act and their associated regulations is carried out by individuals designated as inspectors or officers under these Acts. These individuals must be appointed by the municipality and are generally the local Agricultural Fieldmen, who are appointed in accordance with the Agricultural Service Board Act. The municipality pays the Fieldman's salary, although one half of this amount is paid back to the municipality by Alberta Agriculture in the form of a grant. The Agricultural Fieldman is usually the local Agricultural Chemical Inspector, as appointed under the Agricultural Chemicals Act. As a result, he is responsible for ensuring that (a) noxious weeds and other pests are controlled within his municipality, and (b) this control is in accordance with the Agricultural Chemicals Act and Regulations.

e) Inventory Mechanisms

Alberta Agriculture stocks a number of pesticides at strategic points within the Province for rapid transfer to areas reporting an outbreak of pests (e.g., grasshoppers). These chemicals are stored by municipalities and distributed to farmers at prices and conditions established by the Department. Records are maintained of the quantities of various chemicals stored at each of the centres, but complete data on pesticide use are not available.

The agricultural chemical companies supply data on the major herbicides used in the Prairie Provinces to the Planning Secretariat, Manitoba Department of Agriculture. In this unique manner, some inventory data on herbicides used in Alberta is available to Alberta Agriculture.

f) Public Information

The field staff of the Alberta Agriculture Extension Division (District Agriculturalists) at 63 district locations throughout the Province provide technical information and professional consultation to farmers and homeowners on pesticide use and safety. This information is provided in the form of public meetings, training courses, seminars and publications.

The Plant Industry Division publishes a monthly newsletter entitled "News" which makes recommendations to the public on vegetation management. The Division also provides a publication every two weeks from the Alberta Horticulture Research Centre entitled "Crop Protection Newsletter" which deals with plant pathology, entomology and weed control.

Other publications, issued by the Communications Branch of Alberta Agriculture, include "Agri-News", "Garden-Fax" and "Agri-Fax" which occasionally deal with various aspects of pest control and pesticides.

g) Problems and Concerns

No specific areas of concern with respect to pesticide control in the Province were identified. The Department was considered to have sufficient staff and funding to administer effectively the Acts for which they are responsible.

3.3 OTHER ACTS

Those Acts administered by Departments other than Agriculture and Environment are briefly described below:

The Public Health Act. This Act, administered by Alberta Social Services and Community Health provides authority to regulate production and handling of any article to be sold for food for the public. The Act also provides authority for the prescribing of maximum permissible concentrations of contaminants in water and in the atmosphere as may be necessary for the protection of health.

Under the Act, Alberta Regulation 266/58 prescribes methods and procedures for using hydrocyanic acid gas in any form whatever for the disinfestation of buildings. A permit issued by the Provincial Board of Health is required for each disinfestation.

It is expected this regulation will be transferred to Alberta Environment for inclusion in regulations currently being revised under the Agricultural Chemicals Act.

The Alberta Pharmaceutical Association Act. This Act is administered by Alberta Pharmaceutical Association. Within the terms of this Act, only registered pharmaceutical chemists may sell drugs or poisons as defined in the Schedules, except for products defined by the Proprietary or Patent Medicine Act, and certain pest control products registered under the Pest Control Products Act. Provision is made for the use of poison labels and poison registers.

Revision is currently underway to revise the Act and Schedules to incorporate changes in Federal and Provincial legislation concerning classification and sale of pesticides and other chemicals.

The Wildlife Act. This Act is administered by Alberta Recreation, Parks and Wildlife and provides for the protection of wildlife. Under the Act, regulations for the use and distribution of any poison or drug can be made; however, no regulations have been established to date.

3.4 ADVISORY COMMITTEES

3.4.1 Intergovernmental Committees

a) Alberta Interdepartmental Committee on Pesticides (AICP)

This committee was established by the Minister of Agriculture in 1966 with cooperation of the Ministers of Health, and Lands and Forests (Environment added in 1971). The terms of reference are as follows:

- To continually review the field of pesticides, development application, new products, danger to health, etc.

- To recommend to Government, controls at Federal and Provincial levels to regulate the use of pesticides.

- To study inter-departmental relationships and responsibilities in such areas as licensing of operators, health standards, training and education of personnel and public.

- To advise on general terms of controls, and specific regulations on chemicals.

- To coordinate the activities of various monitoring programs.

The membership is as follows:

Alberta Agriculture	4
Alberta Environment	2
Alberta Social Services and Community Health	1
Alberta Labor	1
Alberta Recreation, Parks and Wildlife	1
University of Alberta	3

Fisheries and Environment Canada		2
Agriculture Canada		2
Health and Welfare Canada		1
	TOTAL	17

The committee meets annually or at the call of the Chairman. The committee reports directly to the Minister and Assistant Deputy Minister of Agriculture and through the Minister's office to the Ministers of Environment; Parks, Recreation and Wildlife; Social Services and Community Health; and Labor.

Activities of the committee are of an on-going nature and currently there are no special programs. However, special programs are initiated as problems arise such as the mercury seed treating problem which occurred in the early 1970's.

b) Alberta Agricultural Coordinating Committee (AACC)

This committee was established by the Alberta Minister of Agriculture as a sub-committee of the Canadian Agricultural Services Coordinating Committee (CASCC). The terms of reference of the AACC are as follows:

- To provide a forum for discussion of policy and program areas of interest to Alberta agriculture.

- To advise the Alberta Minister of Agriculture on matters related to agriculture program and policies, and where necessary, through him advise the Federal Minister of Agriculture, Presidents of Universities and other agencies.

- To keep under regular review the broad aspects of agricultural research, extension and education in Alberta with the object of:

  i) facilitating inter-group communication and coordination management levels,

ii) assessing immediate and future needs and developing proposals to meet them,

iii) advising on joint uses of available facilities and personnel,

iv) contributing information and ideas bearing on regional and national policies affecting agriculture,

v) carry out special assignments on behalf of CASCC appropriate to the above objectives,

- To coordinate the activities of fifteen Advisory Committees.

Membership is as follows:

Deputy Minister, Alberta Agriculture (Chairman)	1
University of Alberta, Edmonton (including the Dean from the Faculty of Agriculture and Forestry)	2
Directors from Agriculture Canada Research Stations - Lethbridge, Lacombe and Beaverlodge	3
Assistant Deputy Ministers, Alberta Agriculture - Production, Marketing and Development	3
TOTAL	9

The AACC holds an annual meeting where reports and resolutions from the Advisory Committees are received. Following this, at least one additional meeting is held to review the Advisory Committees' reports and to make recommendations on priorities and action to the Minister of Alberta Agriculture and to CASCC.

c) Pest Control Advisory Committee (PCAC)

This is an advisory committee to the Alberta Agricultural Coordinating Committee. Prior to 1966 it was advisory to the Crop Production Board. Terms of reference of the PCAC are as follows:

- To review and examine research on insect pests, plant diseases and destructive animals as related to agriculture.

- To advise the Department of Agriculture on developments as they may affect department policies and farm practices.

- To revise and update information and recommendations on pest control techniques including the use of pesticides.

Membership is as follows:

Alberta Agriculture	5
Alberta Environment	1
Alberta Social Services and Community Health	1
Alberta Recreation, Parks and Wildlife	1
University of Alberta	2
Agriculture Canada	10
Fisheries and Environment Canada	3
Health and Welfare Canada	1
TOTAL	24

The committee meets once a year and submits an annual report of its activities and recommendations to the Alberta Agricultural Coordinating Committee.

d) Alberta Weed Advisory Committee (AWAC)

This is an advisory committee to the Alberta Agricultural Coordinating Committee.

The primary objective of the Alberta Weed Advisory Committee is to advise and recommend to the Alberta Agricultural Coordinating Committee on matters relating to weeds and weed control in Alberta, and in particular to coordinate and guide insofar as feasible. The terms of reference are as follows:

- To carry out weed control experimentation and testing of herbicides in Alberta.

- To examine experimental data from the testing of herbicides and make recommendations for their use in Alberta.

- To review, advise and aid the Department of Agriculture on weed control policies and programs.

- To review and revise from time to time, publications on weed control.

Membership is as follows:

Alberta Agriculture		6
Alberta Environment		1
Agriculture Canada		3
Canadian Forestry Service		1
University of Alberta, Faculty of Agriculture		2
Fieldman representing Municipal Governments		1
Canadian Agricultural Chemical Association		2
	TOTAL	16

The committee meets once a year, and the executive meets again shortly after the general meeting to prepare the annual report and recommendations to the Alberta Agricultural Coordinating Committee. Issues which are of concern to the Canada Weed Committee are brought to the attention of AACC through this committee.

Recent recommendations of the Alberta Weed Advisory Committee are as follows:

- Publications on weeds and weed control should preferably be in a Factsheet format. This is being carried out by Alberta Agriculture.

- Committee accepted in principle the recommendations for weed control as formulated and submitted by the Canada Weed Committee (Western Section). Result: The Weed Branch used CWC recommendations as the basis for making Provincial recommendations.

- The committee asked for better progress in the registration of herbicides or mixtures of herbicides for small acreage crops.

- The committee recommended that the application of any herbicide applied near or in water be done so by licensed applicators who have obtained a permit from Alberta Environment.

- The committee reviewed and accepted proposals by the Pest Control Products Section (Ottawa) on 2,4-D in principle.

- Recommended that the Weed Act be amended particularly with sections dealing with weed categories.

- The committee recommended that PCP Regulations be modified so that mixtures of herbicides could be used rather than a series of individual treatments. This course should be followed only after sufficient evidence has been presented that mixtures are safe and effective.

e) Aquatic Plant Management Committee (APMC)

This committee was established in 1968 as the Ministerial Committee on Aquatic Plant Control reporting to the Minister of Health. It has since been renamed the Aquatic Plant Management Committee and now reports to the Minister of Environment. The terms of reference are as follows:

- To serve as an advisory committee acting in a technical and administrative capacity on aquatic vegetation management problems.

- To approve and administer aquatic vegetation management programs under the direction of the Ministers of Agriculture, Environment, Recreation, Parks and Wildlife; including members of the three departments, University of Alberta, Agriculture Canada and the Canadian Agricultural Chemicals Association.

- To name the herbicides and their respective concentrations which may be applied to water.

- To advise the various departments and agencies and the Canadian Agricultural Chemicals Association and other related industries regarding amendments to existing legislation and the need for new legislation in the field of aquatic vegetation management.

- To advise on the legislation and regulations relating to the application of herbicides to shores, banks and semi-aquatic areas.

- To maintain liaison with the Canada Weed Committee with regard to the efficacy of various chemicals for aquatic vegetation management and any other committee which has direct or indirect interest in vegetation management and water quality such as the Alberta Interdepartmental Committee on Pesticides and the Agricultural Chemicals Advisory Committee.

- To review and advise on the various fields of research and special investigations that may be required and direct implementation to appropriate agency.

- To provide relevant information to the general public.

- To advise on the legislation and regulations relating to the application of herbicides to shores, banks and semi-aquatic areas.

Membership is as follows:

Alberta Environment	1
Alberta Agriculture	1
Agriculture Canada	1
Alberta Lands and Forests	1
Alberta Agriculture	1
University of Alberta	1
Canadian Agricultural Chemicals Association	1
TOTAL	7

The committee meets once or twice a year, with minutes of the meetings being submitted to the Deputy Ministers of Environment, Agriculture, Social Services and Community Health, and Parks, Recreation and Wildlife.

The committee publishes a bulletin entitled "Aquatic Plant Management" which conveys the committee's recommendations to the public. In recent years, the committee has been involved in projects of aquatic weed control in Chestermere Lake, Calgary; Lake Wabamun, and in canals, rivers and streams in the southern irrigation districts.

f) Alberta Black Fly Coordinating Committee (ABFCC)

This committee was formed with approval of the Department of Agriculture. Various ad hoc committees have met since 1964, and the present committee was established in 1973. The terms of reference are:

- To reduce the effect of black flies on livestock production and recreational activities in the Athabasca region and northern areas through coordinated inter-agency research.

- To survey and investigate black fly and other biting fly breeding areas and populations and assess the feasibility of formulating biological and chemical controls for this pest.

This committee is chaired by the Head of the Pesticide Chemicals Branch, Alberta Environment.

Membership on this intergovernmental committee is as follows:

Alberta Environment	2
Alberta Agriculture	4
Alberta Parks, Recreation and Wildlife	1
Alberta Research Council	1
University of Alberta	1
County of Athabasca	2
MLA for Athabasca	1
Agriculture Canada	2
Fisheries and Environment Canada	2
TOTAL	16

The general committee meets annually, with task forces meeting as necessary in the development of black fly research programs.

For the past three years, the committee has been exclusively involved in setting up and coordinating research into black fly control in the Athabasca region. This has included studying the efficacy of a variety of insecticides, the persistence of residue and the movement in surface waters and, effects on non-target organisms.

The research program will be completed in 1977 and the committee will then submit a final report to the Minister of Environment.

g) Warble Fly Control Committee (WFCC)

The WFCC was established in 1972 by Alberta Agriculture.

The purpose of this committee is to review and advise on the development of Warble Control Programs instituted under the Agricultural Pests Act and to assess and make recommendations regarding the progress of these programs.

This committee is chaired by a representative of the Animal Industry Division, Alberta Agriculture. Membership is as follows:

Alberta Agriculture	7
Alberta Environment	1
Energy and Natural Resources	2
Agricultural Service Board Fieldmen	2
Agriculture Canada	1
TOTAL	13

The committee meets two or three times a year at the call of the Chairman and reports its recommendations to the Minister of Agriculture by way of the Plant Industry and Animal Industry Division Directors.

The committee's major area of involvement is extension services. Recommendations on warble fly control are communicated to the farming public by means of letters, bulletins and slide shows. These recommendations refer to the most effective chemicals and fly control. In 1974, the committee instituted a program of inspecting for infested animals at auction markets. In 1976 the committee instituted a program of treating infested animals at auction markets, which were not bound for slaughter.

3.4.2 Interdepartmental Committees

a) Agricultural Chemicals Advisory Committee (ACAC)

This committee was established under the Agricultural Chemicals Act in 1970. It was later transferred from Alberta Agriculture to Alberta Environment. Its terms of reference are:

- To serve as an advisory body on all aspects relating to the Agricultural Chemicals Act and its regulations.

- To advise the Minister on the Act and make recommendations on appeals.

Chairmanship of the committee varies and membership is as follows:

Alberta Agriculture		2
Alberta Environment		2
Alberta Parks, Recreation and Wildlife		1
Alberta Labor		1
County Reeve		1
Chemical Industry		1
University of Alberta		1
	TOTAL	9

The committee meets three or four times per year and reports directly to the Minister of Environment. The report to the Minister consists only of minutes of the committee's meetings. No annual report is issued by the committee.

b) Safe Food Committee

The purpose of this committee is to establish and administer a program of monitoring agricultural products produced in Alberta for pesticide residues and other contaminants.

This is a small committee with three members from Alberta Agriculture and one from Alberta Environment. It is chaired by Alberta Agriculture.

The committee meets annually to establish quotas for the sampling and analysis of meat, poultry, vegetable and dairy products for pesticide residues by the Dairy and Food Products Laboratory. Approximately 1,000 samples are collected annually by Alberta Agriculture and Alberta Environment staff. If unsatisfactory residues are found in any sample tested, then the committee in conjunction with the Departments of Agriculture and Environment institutes an investigative procedure to identify and remove the source of contamination.

The committee submits the minutes of all meetings, an annual report of its activities and a summary of the monitoring program results to the Deputy Minister of Agriculture.

c) Advisory Committee for a Position Paper on Pesticides

The purpose of this committee is to develop the philosophy and provide a position paper recommending a stance for Alberta Environment regarding the use of pesticides and related chemicals. This committee has been established to support the new Chemicals and Pesticides Control Act currently being drafted by Alberta Environment.

Membership is as follows, but is currently under revision:

Alberta Environment	6
Alberta Recreation, Parks and Wildlife	1
Alberta Agriculture	2
Alberta Labour	1
Alberta Government Telephones	1
Alberta Transportation	1
Alberta Energy and Natural Resources	1
Alberta Government Services	1
TOTAL	14

Advisors

Environment Canada	1
Agriculture Canada	2
University of Alberta	2

The committee was established in April 1977 and will meet frequently until October, 1977 at which time it plans to submit the position paper to the Minister of Environment.

d) Problem Wildlife Committee

This is an action or operational committee which was established in 1974 by agreement of the Ministers of Agriculture and Lands and Forests.

Terms of reference are as follows:

To consider current problems in vertebrate wildlife management and provide a team approach in planning and action.

- To review the management of problem wildlife with the object of assessing adequacy of programs, identifying needs, demands and conflicts of interest, and developing solutions. Advising on joint programs and efficient use of personnel and resources. Interagency exchange of information to the public.

- To provide a public forum on policies and programs.

- To form working parties or sub-committees as required to study or handle special problems.

The committee is chaired by the Chief Wildlife Biologist, Fish and Wildlife Division, Alberta Parks, Recreation and Wildlife and membership is as follows:

Alberta Parks, Recreation and Wildlife	5
Alberta Agriculture	5
TOTAL	10

The committee meets at least once a year and reports its recommendations to the Ministers of Agriculture and Parks, Recreation and Wildlife.

Since its formation, the committee has concentrated on development of a Problem Wildlife Manual on Provincial policies for control of vertebrate pests which is provided to Government agencies and public interest groups. The committee has attempted to develop policies which are in harmony with the objectives of the two Departments, namely the control of agricultural pests and the protection of wildlife.

3.4.3 Other Advisory Bodies

a) Environment Conservation Authority

The Environment Conservation Authority (ECA) is a Crown Corporation responsible directly to the Alberta Minister of Environment. It is responsible

for examining the environmental implications of policies and programs of the Alberta Government and its agencies.

In 1972 the Alberta legislature requested that the ECA give consideration to holding public hearings to determine public reaction with respect to the use of herbicides on non-agricultural lands.

The ECA chose to consider all biocides being used in Alberta, and called upon one of its advisory committees, the Science Advisory Committee to gather data on biocide use in Alberta prior to the public hearings. The Science Advisory Committee struck an ad hoc Biocide Committee early in 1972, consisting of four University of Alberta professors, to gather this data.

Prior to holding the public hearings, technical sessions were held at the University of Alberta in 1973 to assess the available data and prepare a preliminary report. As a result of these technical sessions, the ECA published a series of bulletins on the use of fungicides, herbicides, insecticides and vertebrate poisons in Alberta.

Public hearings were held in the fall of 1974 at which individuals and groups presented briefs.

Based on the data presented at the technical sessions and the proceedings of the public hearings, the ECA published its final report and recommendations to the Minister of Environment in February 1976. At this time the Biocide Committee was disbanded, although the Chairman, Dr. D.A. Boag, has been retained as an ex-member of the Science Advisory Committee to follow through on the ECA's recommendations to the Minister.

SECTION 4

SASKATCHEWAN

The regulation and control of pesticides in Saskatchewan is conducted under legislative powers of the Provincial Government, mainly through joint participation of the Department of Agriculture and the Department of the Environment.

The Department of Agriculture, through the Animal Industry Branch and Plant Industry Branch administers the most significant control of pesticides which is derived from the Pest Control Products (Saskatchewan) Act and Regulations. In some cases, Saskatchewan Agriculture maintains a monopoly on pesticide supply and application, consequently, the Province has excellent knowledge in the use of some pesticides.

Within the Department of the Environment, pesticide control is administered through the Water Pollution Control Branch under the Water Resources Management Act and Regulations, which deals specifically with the use of pesticides near or on surface waters.

The Saskatchewan Departments of Agriculture and Environment provide a functioning basis for several committees. These intergovernmental and interdepartmental committees provide information and recommendations to Government agencies.

4.1 SASKATCHEWAN AGRICULTURE

The Saskatchewan Department of Agriculture has major control over the use of pesticides. Within Saskatchewan Agriculture, the Plant Industry and Animal Industry Branches carry out the Department's control responsibilities.

In general, Saskatchewan Agriculture provides technical assistance, education and research with respect to pesticides to assist the agricultural community in achieving higher crop and livestock yields as well as maintaining safe use of pesticides and minimizing the impact on the environment.

To establish control on pesticide use, a number of Acts and Regulations were promulgated which lead to the formation of various committees and policies as methods of communications with the agricultural community.

4.1.1 Animal Industry Branch, Production and Marketing Division

a) Acts, Regulations, Standards and Guidelines

The Pest Control Act. The Pest Control Act provides for the control and destruction of certain pests which are designated by the Minister of Agriculture. To date there are three declared pests:

i) the brown (Norway) rat,
ii) the grasshopper, and
iii) the warble fly.

However, the Minister of Agriculture may declare any animal, insect or disease to be a pest that he deems likely to be destructive or dangerous to any crops, grain, livestock or other property.

The Pest Control Act deals with the following issues:

i) Destruction and control of pests which may involve the destruction of certain crops in order to prevent the spread of pests.

ii) Pest control on Crown lands is the responsibility of the Crown.

iii) The Act provides for appointment of Officers for the purpose of enforcing the Act.

b) Organization and Control Responsibilities

In addition to the above the Animal Industry Branch, shown in Figure 7, administers the Warble Control Areas Policy and the Coyote Control Policy. Both Policies have been established for the period from April 1, 1977 to March 31, 1978. Normally these policies are issued annually after an annual review.

The Coyote Control Policy provides assistance so that livestock producers may develop a sound program for control of the Coyote where this species exists in substantial numbers and is known to cause losses of domestic livestock, particulary sheep. The conditions of the Policy provide for the use of "1080" poison balls.

The Warble Control Areas Policy. The Policy facilitates the eradication of Warble grubs from cattle in Saskatchewan through the use of pesticides and technical assistance.

c) Field Monitoring and Enforcement

The Department of Agriculture currently employs five or six field inspectors. Additional inspectors are appointed as serious problems arise. Each District Agricultural Representative also carries out field monitoring in normal situations and, if warranted, receives assistance from inspectors.

Field monitoring may include all livestock producers who are interested in establishing warble control areas in Saskatchewan. The program involves a mandatory warble inspection of market cattle sold at public or other auction markets within the designated area.

SASKATCHEWAN AGRICULTURE

PRODUCTION AND MARKETING DIVISION

- Animal Industry Branch
  - Head of Animal Industry Branch
  - Problem Wildlife Specialist
- Plant Industry Branch
  - Head of Plant Industry Branch
  - Head of Regulatory Service
  - Plant Pathology Specialist
  - Pest Control Specialist
  - Weed Control Specialist

FARM RESOURCES DEVELOPMENT DIVISION

- Lands Branch

FIGURE 7 - SASKATCHEWAN AGRICULTURE ORGANIZATION

Field assistance and monitoring may also be provided under the Coyote Control Policy, to rural municipalities or livestock producers. However, with respect to the use of "1080", the application for assistance in setting out poison for coyote control must be made to the Department of Tourism and Renewable Resources. An officer of the Department of Tourism and Renewable Resources conducts the preparation of the coyote bait.

Technical and professional assistance may be requested under the Coyote Control Policy, from specialists in the Animal Industry Branch for the following:

i) The use of an aversive conditioning agent (lithium chloride).

ii) The location of coyote dens and destruction of pups.

iii) The elimination of coyotes causing the predation.

iv) Livestock management to minimize predation.

The Province does not monitor for the effects of pesticide on non-target organisms.

Enforcement of the Pest Control Act is the duty of the officers within the Department of Agriculture.

d) Inventory Mechanisms

The Department of Agriculture in Saskatchewan maintains an inventory on pesticides which they have in storage. Under the Pest Control Products (Saskatchewan) Act, (see section 4.1.2.), the Department of Agriculture may purchase sufficient quantities of pesticides and maintain a reserve supply.

The Department does not have knowledge of the amount of pesticides entering the Province.

e) Public Information

Information from the Animal Industry Branch is disseminated to the public by the Regional Extension Services Branch within the Department of Agriculture. News letters and pamphlets are published and distributed to the public through the District Agricultural Representatives. One of which is a report on Livestock Insects published by Saskatoon Agriculture recommending various chemical controls of livestock insects.

f) Problems and Concerns

Information from the Animal Industry Branch indicated that major problems existing with pesticide control are at the household level. Their experience suggested extreme difficulty in controlling the misuse of pesticides assigned for household use.

The other concern was that under the Warble Policy where livestock producers are not legally forced to comply. Participation in this Policy is voluntary.

4.1.2. Plant Industry Branch, Production and Marketing Division

The Plant Industry Branch, similar to the Animal Industry Branch is within the Production and Marketing Division.

a) Acts, Regulations, Standards and Guidelines

The Plant Industry Branch derives its statutory powers from the Pest Control Products (Saskatchewan) Act and Regulations.

The Pest Control Products (Saskatchewan) Act and Regulations. This Act and Regulations provide the most significant control of pesticides in Saskatchewan and the powers are as follows:

i) The Packaging Labelling, Efficacy, Safety in Handling, Use, Sale or Supply - No person is allowed to sell a pesticide that does not comply with standards outlined under the Act.

ii) Use - It is prohibited to use a pesticide for purposes other than for which it is represented.

iii) Application of pesticide to open water requires a permit under the Water Resources Management Act and Regulations.

iv) Storage - Any person selling pesticides must provide adequately safe storage to prevent accidents, contamination and health hazard.

v) Transportation of a Pesticide or Mixture of a Material and Pesticide - Such materials shall be transported separate from food and drink from humans, animals and plants and the containers must be labelled.

vi) Treated Grains - Must be transported in sealed containers and labelled as such.

vii) Disposal of Pesticides and/or Containers - It is prohibited to clean pesticide apparatus in open water. No person shall dispose of any pesticide or bury, decontaminate, burn or otherwise dispose of any container that has been used to hold a pesticide except at a site described by the Regulations.

viii) Person Needing a Permit - All commercial pesticide applicators require a permit. All applicants for new or renewed permits shall meet the qualifications and conditions of training and experience established by the Minister.

The responsibilities of permitted applicators are supervision of operators, safe use of pesticides including handling and transportation.

All permitted applicators must maintain reports and records of their operations.

ix) Inspectors - Inspectors are appointed under the Public Service Act to enforce the Acts and Regulations.

b) Organization and Control Responsibilities

The Plant Industry Branch has parallel status with the Animal Industry Branch within the Production and Marketing Division as shown in Figure 7.

The Plant Industry Branch also administers control of the following policies which involve the use of pesticides.

Persistent Perennial Weed Control Policy. This policy was established for the period of April 1, 1977 to March 31, 1978, by the Plant Industry Branch to assist farmers in the eradication of perennial weeds. The assistance is mainly financial and only becomes approved when application for assistance is made prior to the commencement of the weed control project. The Policy is issued and reviewed annually.

Insect Control Chemicals - Sale and Distribution Policy. This policy was established for the period from April 1, 1977 to March 31, 1978. The purpose of the Policy is to ensure that adequate supplies of chemicals (pesticides) are available to farmers for the control of grasshoppers and cutworms. In addition, it allows Municipal Councils and Local Improvement Districts to choose the distribution system for pesticides which are most suitable to the municipality or Local Improvement District. The Policy is issued and reviewed annually.

The authorized outlet, whether municipality or Local Improvement District, acquires its pesticide supply from the Department of Agriculture, Plant Industry Branch. The outlet is responsible for the transportation, handling, merchandising and storage of the pesticides.

c) Permit and Licensing Procedures

All commercial applicators require an Applicators Permit under the Pest Control Products (Saskatchewan) Act. The Applicator must comply with the regulations and qualifications as outlined under the Pest Control

Products Regulations. The application form is submitted to the Regulation Services Supervisor, Plant Industry Branch.

There are three classes of permit which can be issued:

i) Class A - for application of pesticides primarily in agriculture, rural or forested areas.

ii) Class B - for application of pesticides in urban or non-agricultural industrial, or recreation areas.

iii) Class C - for application of a pesticide or pesticides for a specific area and for a specific use as stated on the permit.

However, no person shall apply a pesticide to any open body of water, or the banks thereof, unless he holds a permit to do so issued or approved by the Minister of the Department of the Environment, under the Water Resources Management Act.

All applicants for new or renewed permits must meet the qualifications and conditions of training and experience established by the Minister and shall include but not be limited to, knowledge concerning the proper and safe use, application, handling, disposal and hazards of pesticides employed. The applicant must first pass a course and work one year on an interim permit after which a review is conducted and a three year permit may be issued.

A permitted applicator has the following responsibilities:

i) At every operation involving the use or application of a pesticide by a person who is required to be a holder of a permit, the permitted applicator must:

a) Supervise the activities of assistants.

b) Bear the responsibilities for the activities and actions of

assistants in the safe handling, storage, and transportation of the pesticides.

c) Provide assistants with approved information on procedures for applying, handling, storing, and transporting of pesticides in a safe manner.

ii) All permitted applicators must keep records of each operation involving pesticide use or application on forms approved by the Department which shall include the following:

a) The name of the person for whom the pesticide was applied.

b) The location and size of the area where the pesticide was applied.

c) The year, month, day and time at which the pesticide was applied.

d) The purpose for which the pesticide was applied.

e) The chemical or trade name and the registration number assigned under the Federal Pest Control Products Act.

f) The method of application.

g) The total quantity, or the rate of application of the pesticide applied.

Such records shall be held for a period of not less than three years from the date of the application and shall be available to any inspector appoined pursuant to the Act.

A farmer requiring a pesticide for use on his own land does not require a permit. Depending on the classification of the pesticide compound, a farmer may require a written authorization from the District Agricultural Representative before the compound can be purchased.

The above Regulations apply to the Persistent Perennial Weed Control Policy and the Insect Control Chemical - Sale and Distribution Policy. The farmer or the commercial applicator must use the pesticide in accordance with the Pest Control Products Act, in addition, the commercial applicator requires an Applicators Permit. If "picloram" pesticide is used, the contractor assumes the responsibility of completing the "Record of Application Form" according to the Persistent Perennial Weed Control Policy.

d) Field Monitoring and Enforcement

General monitoring and enforcement activities are discussed under section 4.1.1 (d). In addition, under the Pest Control Products (Saskatchewan) Act, an Inspector may order the use or application of a pesticide to cease if the inspector considers the use of the pesticide to be dangerous to the health of people, animals or crops. An Inspector also has the power to inspect and take samples of any substance in question.

e) Inventory Mechanisms

As stated previously, the Department of Agriculture maintains an inventory of pesticides for their needs. Under the regulations of the Insect Control Chemical - Sale and Distribution Policy the authorized outlets must provide the Plant Industry Branch with up-to-date inventory reports if required. Generally, inventory statements are kept but not forwarded to the Branch. However, the Branch requests the records periodically and especially during a pest breakout.

f) Public Information

Most of the public information on pesticides is conveyed to the agricultural community through joint efforts of the Regional Extension Services Branch and the Plant Industry Branch by the use of published material, radio and television.

The Saskatchewan Weed Action Committee which is discussed under Section 4.3 organizes weed control seminars throughout the Province.

g) Problems and Concerns

The problems and concerns are similar to those expressed by representatives of the Animal Industry Branch. There exists a difficulty in controlling the misuse of pesticides which are designed for household use. The problems are those of unsafe use and use on nonrecommended organisms. For instance, "Endrin" is commonly misused by the public on organisms for which it is not recommended.

4.1.3 Land Branch, Farm Resources Development Division

The Lands Branch has limited involvement with pesticide use and control in the Province. The involvement is mainly in joint efforts with the Animal Industry Branch and Plant Industry Branch.

The Lands Branch administers two Policies:

i) Grasshopper and Persistent Perennial Weed Control Policy.

ii) Provincial Community Pastures - Conditions of Management for Cattle and Fee Schedule Policy.

a) Acts, Regulations, Standards and Guidelines

The Control of pesticides use by the Lands Branch is conducted through the Plant Industry Branch and the Animal Industry Branch. The Lands Branch maintains only a limited direct involvement with pesticide application beyond providing financial assistance for pest control programs under the direction the the Policies stated above.

b) Organization and Control Responsibilities

Within Saskatchewan Agriculture, the Lands Branch is part of the Farm Resources Development Division as shown in Figure 7.

The Lands Branch through the Grasshopper and Persistent Perennial Weed Control Policy for the period April 1, 1977 to March 31, 1978 provides a measure of control where serious grasshopper or persistent perennial weed infestations occur on vacant Provincial lands administered by the Lands Branch, Department of Agriculture. The Policy is reviewed and issued annually.

The municipalities and Local Improvement Districts must conduct a control operation as authorized by the Lands Branch; and only pesticides recommended by the Plant Industry Branch will be authorized. Upon completion of the pest control operation, an application for financial assistance is submitted to the Lands Branch.

The Provincial Community Pastures - Conditions of Management for Cattle and Fee Schedules Policy is in effect for the period of April 1, 1977 to March 31, 1978. The policy is reviewed and issued annually.

The only aspect of this policy dealing with pesticides is that warble infested cattle will be refused entry from community pastures. The Department of Agriculture recommends that the cattle be treated at home with systemic pesticide according to the recommendations of the supplier.

4.2 SASKATCHEWAN DEPARTMENT OF THE ENVIRONMENT

4.2.1 Water Pollution Control Branch

Control of pesticides by Environment Saskatchewan is conducted through the Water Pollution Control Branch by the authority derived from the Water Resources Management Act, Section 27 and the Regulations under the Water Resources Commission Act, Section 29.

Environment Saskatchewan regulates the use of pesticides in order to protect surface water and groundwater systems from pollution. In order to achieve this protection, guidelines have been prepared by the Water Pollution Control Branch for use when applying pesticides on pastures, along ditches and canals, and on surface waters. Permit systems are also used for pesticide applicators and for projects involving pesticide uses on or near surface waters.

a) Acts, Regulations, Standards and Guidelines

Details on the Acts and Regulations administered by the Water Pollution Control Branch are given below:

Water Resources Management Act, Section 27, states that "no person shall discharge, deposit, drain or release any substance capable of changing the quality of water or causing water pollution".

Water Resources Commission Act Regulations under Section 29, states that:

" i) No person shall, unless authorized by the commission to do so, place or permit or cause to be placed any substance or material in surface water or along the banks of surface water for the purpose of poisoning, killing or eliminating weeds, algae or other aquatic nuisances."

This, however, does not apply where the surface water is wholly within the boundaries of land owned by the person and the surface water does not discharge by any means, other than by percolation, into surface water outside the boundaries of such land.

Under the authority of the Act and Regulations, Environment Saskatchewan has recently prepared guidelines for the application of biocides (which include pesticides) to:

i) pastures;
ii) irrigation and drainage canals and ditches; and
iii) surface waters for the control of aquatic nuisances.

Details describing each area of application are briefly given below:

Guidelines for Pasture Spraying:

- Use chemicals which are non-persistent and have a low toxicity to aquatic life.

- In environmentally-sensitive areas, e.g. close to water bodies and unique wildlife habitats, control of brush should be achieved mechanically rather than through the use of chemicals.

- Minimum use should be made of "2,4,5-T" and only in areas well removed from water, human habitation and wildlife habitats.

- Timing of chemical application should be coordinated with forecast dry weather conditions.

- Ensure that commercial applicators are licensed under the Pest Control Products Act (Saskatchewan) and Regulations.

- Minimize drift by applying chemicals when the wind speed is less than 10 kilometres per hour, air temperature less than 32°C, by using a course spray and a formulation that vaporizes slowly.

- Do not spray chemicals within 25 meters or use aerial sprays within 50 meters of a stream or other body of water, including intermittent streams.

Guidelines for the Use of Biocides On or Near Irrigation and Drainage Ditches and Canals

- Commercial Applicators must obtain an Applicators Permit.

- Approval should be obtained if a biocide is to be applied in, or within 25 meters of the high water level of surface water, not wholly within the boundaries of land owned by the person by whom or on whose behalf the biocide is added, in an area, canal or ditch, whether temporary or permanent, natural or artificial, which could drain into a surface water body or canals and ditches which conduct water into a domestic water supply.

- Guidelines are provided for specific biocides.

Guidelines for the Control of Aquatic Nuisances

In accordance with Section 29 of the Water Pollution Control Regulations, an application for authorization for chemical control of algae and other aquatic nuisances must be acquired unless the individual qualifies under the exemption within the Regulations.

b) Organization and Control Responsibilities

Within the Department of the Environment, the Water Quality Division and the Biological Section of the Water Pollution Control Branch are specifically responsible for pesticide control, see Figure 8.

ENVIRONMENT SASKATCHEWAN

ENVIRONMENTAL PROTECTION SERVICE

- Water Pollution Control Branch
  - Water Quality Division
  - Biological Section

FIGURE 8 - ENVIRONMENT SASKATCHEWAN ORGANIZATION

The main objective of the Department of the Environment with respect to control of pesticide use is to ensure minimum environmental effect from the use of agricultural chemicals. The Guidelines were established to facilitate the proper use of pesticides and protect environmental quality, including wildlife and fisheries habitat, outdoor recreation, aesthetics, water quality and hydrology.

c) Permit and Licensing Procedures

Generally, Environment Saskatchewan requires that a pesticide applicator obtain authorization before treating either surface water or areas near them.

As previously discussed under Saskatchewan Agriculture, Environment Saskatchewan also requires that commercial applicators be licensed under the Pest Control Products Act (Saskatchewan) and comply with the subsequent regulations.

Authorization must be granted by Environment Saskatchewan to anyone intending to implement chemical control of algae and other aquatic nuisances on surface waters. However, there are exemptions under the Regulations as indicated previously under subsection 4.2.1 (a).

Most Federal Crown Corporations and agencies such as Eldorado Nuclear, PFRA and Parks Canada make application to Environment Saskatchewan for authority to conduct a pesticide spraying operation on or near surface waters. Of all the Federal agencies PFRA is the most significant user of pesticides. Environment Saskatchewan provides the agency with guidelines and recommendations to ensure a safe spraying operation. CNR was identified as an exception to the above procedure because it does not obtain permits.

d) Field Monitoring and Equipment

Environment Saskatchewan does not support any regular pesticide field monitoring programs, unless a special problem is anticipated. However, large scale spraying operations or the application of pesticides near or in surface waters usually result in inspection by the Department.

e) Inventory Mechanisms

Environment Saskatchewan is not involved in the handling, storing or the actual use of pesticides. Consequently, the Department does not maintain any records or inventories of pesticide use in the Province.

f) Public Information

The Water Pollution Control Branch provides public information in the form of newspaper advertisements, seminars and written guidelines. A brochure on aquatic nuisance control has been recently published.

4.3 ADVISORY COMMITTEES

This section provides information on the pesticide advisory committees which have been established by the Government of Saskatchewan. All the committees are intergovernmental, meaning that members represent both the Federal and Provincial Governments.

4.3.1 Intergovernmental Committees

a) Saskatchewan Agriculture Services Coordinating Committee (SASCC)

The Federal Minister of Agriculture, following the formation of the Canadian Agricultural Services Coordinating Committee (CASCC), requested that the Province of Saskatchewan also establish a coordinating committee to service the Provincial agricultural requirements. As a result, the Saskatchewan Agricultural Services Coordinating Committee was formed.

The objectives of SASCC are to disseminate agricultural information to intergovernmental and interdepartmental committees and to facilitate sharing of information associated with the activities of its various sub-committees. SASCC also encourages coordination between agricultural extension services and research activities.

Fifteen committees with members from Federal, Provincial and university departments are under the coordination of SASCC. Of these fifteen, the Saskatchewan Advisory Weed Council and the Saskatchewan Advisory Council on Insect Control deal specifically with pesticides.

The SASCC membership is as follows:

Deputy Minister, Saskatchewan Agriculture (Chairman)	1
Directors from Agriculture Canada Research Stations	2
Director from Department of Regional Economic Expansion	1
Executive Director from Extension and Rural Development Division, Saskatchewan Agriculture	1
University of Saskatchewan, including a Specialist and a Director from Extension Division and Deans from College of Veterinary Medicine and College of Agriculture	4
TOTAL	9

SASCC meets twice annually in Saskatoon and holds one workshop yearly.

Proceedings of SASCC activities are reported through the office of the Deputy Minister of Agriculture to the Minister of Agriculture. Recommendations within the reports are presented to the Minister. Any activities or recommendation having Federal implications originating from SASCC are directed to CASCC by the Minister of Agriculture. The committee holds no statutory powers.

b) Saskatchewan Advisory Weed Council

Formal establishment of the Saskatchewan Advisory Weed Council was approved in 1969, although it has been in existence since the mid 1940's.

The terms of reference are as follows:

- To draft recommendations on weed control practices for farmers based on the most reliable and applicable information available.

- To approve, arrange for, or produce new weed publications, determine their nature (technical vs. farmer-applied) and arrange to update existing publications.

- To review, encourage and coordinate weed control research programs.

- To review, encourage and coordinate weed control extension programs.

- To make recommendations to appropriate agencies, including the Saskatchewan Agricultural Services Coordinating Committee regarding research and experimental programs, extension programs and policies for weed control.

The Council has twenty members representing the following agencies:

Saskatchewan Department of Agriculture	3
Agriculture Canada, Research Stations (Chairman)	7
Crop Science Department, University of Saskatchewan	2
Department of Horticulture, University of Saskatchewan	1
Crop Development Centre, University of Saskatchewan	1
Prairie Agricultural Machinery Institute	1
P.F.R.A.	1
Department of Agricultural Engineering, University of Saskatchewan	1
Saskatchewan Branch, Canadian Agricultural Chemical Association	2
Farm Service Division, Saskatchewan Wheat Pool	1
TOTAL	20

The Council meets at the call of the Chairman, usually once a year in mid-December. The meetings are held in Regina.

Activities and recommendations of the Council are reported to the Saskatchewan Agricultural Services Coordinating Committee.

The Council has no regulatory powers.

c) Saskatchewan Advisory Council on Insect Control (SACIC)

The Saskatchewan Advisory Council on Insect Control was established in 1965. The terms of reference of the Council are as follows:

- To review and examine research on crop insect pests.

- To advise the Saskatchewan Department of Agriculture on developments as they bear on policies of the Department and affect agricultural practices.

- To foster the exchange of information between agencies involved in control of crop insect pests.

The Council comprises twenty-three members representing the following eleven agencies:

Saskatchewan Department of Agriculture	7
Agriculture Canada, Research Stations	5
Plant Products Division, Agriculture Canada	1
Occupational Health, Saskatchewan Department of Labour	1
Saskatchewan Department of Tourism and Renewable Resources	1
Fisheries and Environment Canada (CFS)	2
University of Saskatchewan	1
University of Regina	1
Saskatchewan Department of the Environment	1
Canadian Agricultural Chemical Association	1
Saskatchewan Association of Rural Municipalities	1
Saskatchewan Beekeepers Association	1
TOTAL	23

The Council meets once a year, normally in Regina.

The Council reports to the Saskatchewan Agricultural Services Coordinating Committee.

The Council has no statutory powers.

d) Saskatchewan Committee on Problem Vertebrate Wildlife

The Saskatchewan Committee on Problem Vertebrate Wildlife was formed in 1975 and held its first meeting in 1976.

The establishing of this Committee was proposed by the Saskatchewan Advisory Council on Insect Control (SACIC) to deal specifically with vertebrate wildlife problems.

The terms of reference are as follows:

- To document yearly and extend the scrutiny of vertebrate pest damage (already underway on a national scale) to agricultural enterprises.

- To identify population shifts of any native wild, exotic or feral vertebrates before the animal in question becomes a problem.

- To identify significant changes in any interactions which occur at the wildlife-domestic animal interface.

- To identify research needs in relation to problem vertebrate wildlife in such areas as population dynamics, natural history and basic control patterns.

- To maintain a watching brief on control legislation and control pesticides to assure that only reasonable and necessary alteration of native wild vertebrate populations takes place in control actions and that the introduction of exotics and man's manipulation of numbers of wildlife (native or exotic) does not bring about the total removal of any wild species from all of its normal range.

The Committee is made up of eight members representing six agencies as follows:

Saskatchewan Department of Agriculture (Chairman)	3
Saskatchewan Department of Tourism and Renewable Resources	1
Saskatchewan Department of the Environment	1
University of Saskatchewan	1
University of Regina	1
Health and Welfare Canada	1
TOTAL	8

At the first meeting of the Committee, it was suggested that the Committee meet twice annually.

The Committee functions as a sub-committee of SASIC to whom it reports.

e) The Weed Action Committee

The Weed Action Committee was first established in 1973 to provide an extension service function by organizing seminars and information on weed control for farmers. The Committee functions jointly with the Regional Extension Services Branch of Saskatchewan Department of Agriculture.

Members of the Committee represent the following Government agencies and private sectors:

Saskatchewan Department of Agriculture (Chairman)	3
University of Saskatchewan	3
Agriculture Canada	1
Agricultural Chemical Association	3
Farmers	2
Equipment Manufacturers and Suppliers	1
Saskatchewan Pest Applicators Association	1
Prairie Agricultural Machinery Institute	1
TOTAL	15

The Committee meets three times annually, usually in spring, fall and winter. Activities are initiated in the fall and carried out during the winter. Meetings are held alternately between Saskatoon and Regina.

As a group, the Committee does not report to any agency, however, each member of the Committee reports to their respective departments.

In 1976 the Committee organized six weed control seminars throughout the Province.

f) Advisory Council on Pest Control Products Act

The Advisory Council on Pest Control Products Act was established to provide support during development of the Pest Control Products Regulations under the Pest Control Products Act (Saskatchewan).

Since forming the Regulations, the Council has been disbanded. However, if necessary, the Council may become active again.

SECTION 5

MANITOBA

The responsibility for pesticide control in Manitoba rests jointly with the Department of Agriculture and the Department of Mines, Resources and Environmental Management. The Department of Agriculture exercises most of its control through the new Pesticides and Fertilizers Control Act and Regulations. Retailers and commercial applicators of pesticides classified as commercial or restricted under the Federal Pest Control Products Act are regulated by this Act and Regulations.

The Department of Mines, Resources and Environmental Management, through the Clean Environment Act and Regulations, exercises control over persons applying pesticides. Government Departments and municipalities applying insecticides to recreational and residential areas are also controlled by the same authority. This department also administers the Public Health Act, under which a regulation applies to the activities of fumigators.

5.1 MANITOBA DEPARTMENT OF AGRICULTURE

Pesticide control is handled within the Marketing and Production Division of the Manitoba Department of Agriculture. Most of this control rests with the Entomology Section of the Technical Services Branch, which is responsible for administering the new Pesticides and Fertilizers Control Act and Regulations.

The Soils and Crops Branch is responsible for administering the Noxious Weeds Act through the Weed Control Section and the Plant Pests and Plant Diseases Act through the Horticulture Section.

In addition, the Planning Secretariat, Marketing and Production Division, gathers some inventory data on major herbicides used in the Prairie Provinces.

Figure 9 shows the organization of the Manitoba Department of Agriculture which is responsible for pesticides control.

5.1.1 Entomology Section, Technical Services Branch

a) Acts, Regulations, Standards and Guidelines

The Entomology Section administers the new Pesticides and Fertilizer Control Act. The Act was proclaimed on April 1, 1977 and replaced the former Pesticides Control Act which regulated only agricultural insecticides.

The Act provides for the licensing of pesticide distributors and commercial applicators, the appointment of pesticide inspectors and the destruction of any material found to be contaminated with pesticides. It also provides for the appointment of a Ministerial committee known as the Pesticides and Fertilizers Advisory Committee and permits the issuance of regulations relating to the use of pesticides.

MANITOBA DEPARTMENT OF AGRICULTURE

MARKETING AND PRODUCTION DIVISION

Technical Services Branch
- Entomology Section

Soils and Crops Branch
- Weed Control Section
- Horticulture Section

Planning Secretariat

FIGURE 9 - MANITOBA DEPARTMENT OF AGRICULTURE ORGANIZATION

Regulation 105/77 under the Pesticides and Fertilizers Control Act came into force on July 1, 1977. It specifies the qualifications required to obtain a retailer or commercial applicator's licence and sets out the conditions and restrictions associated with these licences. It also requires pesticide sales and use records to be submitted by the licencee.

The regulations do not apply to pesticide products classified as "Domestic" under the Federal Pest Control Products Act.

b) Organization and Control Responsibilities

The organization of the Marketing and Production Division is illustrated in Figure 9. The Entomology Section of the Technical Services Branch is responsible for pesticide control through its administration and enforcement of Pesticides and Fertilizers Control Act, extension services, and insecticide distribution. It currently employs three entomologists who share these responsibilities.

c) Permit and Licensing Procedures

Regulation 105/77 under the Pesticides and Fertilizers Control Act requires that retailers of commercial or restricted pesticides obtain a Class I dealer's licence from the Department of Agriculture. The regulation specifies that the applicant may be required to attend a course on the use and control of pesticides. At the time of preparing this report, a course had not yet been established, although such a course is intended.

The Regulation also requires that commercial applicators of commercial or restricted pesticides obtain a class II applicator's licence. There are four classes of applicator's licences as follows:

(a) agricultural pest abatement
(b) non-agricultural pest abatement
(c) structural pest abatement and product fumigation
(d) landscape and garden pest abatement

The qualifications for an applicator's licence as specified by the regulations are as follows:

i) the possible requirement of attendance at a course approved by the Minister on the use and control of pesticides

ii) satisfaction by the Minister that he is qualified in the use and control of pesticides

iii) proof of public liability and property damage insurance for not less than $250,000

iv) in the case of aerial application, a valid Aerial Application and Distribution (AAD 7) licence or a Flying Farmer Exemption from the Federal Air Transport Committee

The Entomology Section, in conjunction with the Weed Control and Horticulture Sections of the Soils and Crops Branch, is currently establishing training courses which will be specific for each of the four classes of applicator's licences. It is anticipated that these courses will be operating during 1978.

Section 5 of the Pesticides and Fertilizers Control Act requires permits be issued to unlicensed or uncertified individuals before they provide services involving the use or application of pesticides or the application of pesticides for test purposes. These are temporary permits and would apply in special cases such as the use of out-of-Province applicators, not licensed in Manitoba, for the control of a pest outbreak.

d) Field Monitoring and Enforcement

Personnel within the Technical Services Branch, Entomology Section, administer and enforce the Pesticides and Fertilizers Control Act and Regulations. The Branch intends to rely heavily on education rather than enforcement techniques in applying the Act and Regulations.

At the time of preparation of this report, inspectors had not been appointed under the Act. It is anticipated that only those people within the Department of Agriculture directly responsible for administrating of the Act will be appointed.

The Department of Agriculture in coordination with the Manitoba Department of Mines, Resources and Environmental Management, and the Federal Health Protection Branch monitors insecticide residues in dairy, meat, poultry and vegetable products. Herbicides and other pesticides are not monitored. The Manitoba Committee on Pesticide Residue Testing has representation from these Departments and establishes annual quotas for the various food products to be tested. All milk production in the Province is tested twice annually, with most other commodities being monitored at least once per year.

Each department assists in collection of the food samples and residue analysis which is conducted in the Pesticide Residue Laboratory operated jointly by the three Departments. The Animal Industry Branch of the Marketing and Production Division provides staff for the laboratory. The Department of Mines, Resources and Environmental Management provides laboratory equipment and the Federal Health Protection Branch supervises the laboratory facility.

The Department of Agriculture does not routinely monitor the effects of pesticides on non-target organisms. However, the Entomology Section occasionally becomes involved in special projects of a research nature in which the effects on non-target organisms are assessed.

e) Inventory Mechanisms

The Pesticides and Fertilizers Control Act has the following requirements:

i) all licensed retailers must submit an annual record of all sales of commercial and restricted pesticides

ii) every person purchasing a restricted pesticide from a licensed dealer must complete and sign a declaration stating the intended use and location of application of the pesticide

iii) every licensed applicator must submit a copy of the following information for each application job:

- customer's name
- mailing address of customer
- date and time of spraying or treatment
- legal description of property treated
- type of crop or property treated
- stage of crop growth
- weeds, pests or other purpose of treatment
- total area treated
- wind direction and velocity at time of treatment
- air temperature at time of treatment
- name, formulation and concentration of pesticide used
- total amount of pesticide applied
- Pest Control Products Act (Canada) registration number of pesticide used
- carrier used (water, fuel oil or other) and amount per unit area
- remarks

This new Act provides the Department of Agriculture with a very comprehensive inventory of commercial and restricted pesticides being used in the Province. The Act is not concerned with domestic pesticides and therefore inventory data will not be gathered on their sales or use.

f) Public Information

The Entomology Section in conjunction with personnel from the Weed Control and Horticulture Sections of the Soils and Crops Branch, and resource personnel from University of Manitoba, Agriculture Canada and the Canadian Agricultural Chemicals Association, plan to

offer training courses to pesticide retailers and commercial applicators during 1978.

Information regarding pesticide use and handling has been passed on to the public in the past by means of public meetings, pamphlets, bulletins, and the media. The Department of Agriculture's 45 Agricultural Representatives located in the five Regional Divisions throughout the Province are the main vehicle for the dissemination of information.

The Entomology Section publishes the "Manitoba Insect Report" on a weekly basis; it is distributed to the agricultural representatives, dealers, applicators, and other interested persons. It deals with various aspects of pest control and insecticide use.

The Communications Branch is responsible for publication of news releases and bulletins which outline Department of Agriculture recommendations for control of grasshoppers, weeds, and other pests.

g) Problems and Concerns

No problems or concerns were expressed by Department of Agriculture personnel on pesticide control in Manitoba. It was considered that sufficient funding and manpower were available to administer effectively the Act and enforce the Regulations. It was indicated that the new Act would provide sufficient control over the use of these chemicals.

5.1.2 Soils and Crops Branch

a) Acts, Regulations, Standards and Guidelines

The Soils and Crops Branch has two Sections which deal with pesticide control in Manitoba. The Weed Control Section is responsible for administration of the Noxious Weeds Act.

This Act defines a number of noxious weeds and requires that every owner or occupant of land take the necessary measures to eradicate the weeds. It requires the appointment of noxious weeds inspectors by every municipality in the Province and empowers these inspectors to prevent the spread of weed seeds. It also provides for the establishment of Weed Control Boards by municipalities. The municipality can then delegate authority under the Act to the Weed Control Board. There are no regulations under the Act.

The Horticulture Section of the Soils and Crops Branch is responsible for administration of the Plant Pests and Plant Diseases Act and Regulations. This Act provides that Provincial inspectors may order diseased or infected plants or seeds to be destroyed or treated by fumigation or spraying. Regulation P90-R1 under the Act provides for the qualification, examining and licensing of tree pruners in the Province.

b) Organization and Control Responsibilities

The Weed Control Section is composed of a Chief and two Weed Specialists who liaise with (a) District Agricultural Representatives through a Weeds Coordinator of the Regional Extension staff, and (b) the municipalities and their weed inspectors through the Weed Supervisors of the District Weed Control Boards.

Responsibilities of the Sections include administration of the Noxious Weeds Act, recommendation regarding uses of herbicides and provision of education and information on herbicide use, and safety.

The Horticulture Section employs a plant pathologist who administers the Plant Pests and Diseases Act, diagnoses diseased crops and makes recommendations regarding the use of pesticides.

c) Permit and Licensing Procedures

The Plant Pests and Diseases Act requires that any person treating a tree in any manner for compensation be licensed as a tree pruner by the Department of Agriculture. Qualifications for licensing include the following:

i) sucessful completion of a program of studies in tree maintenance and protection

ii) evidence of liability insurance coverage

The license must be renewed annually.

d) Field Monitoring and Enforcement

Enforcement of the Noxious Weeds Act is carried out by the Weed Control Section at the Provincial level and by local weed inspectors at the municipal level. This enforcement is concerned with ensuring that weeds are controlled, rather than the nature in which pesticides are used to maintain this control.

e) Inventory Mechanisms

The Planning Secretariat of the Marketing and Production Division receives data on the major selective herbicides used in Western Canada from agricultural chemical distributors.

The Soils and Crops Branch does not gather inventory information on pesticide use.

f) Public Information

The Weed Control and Horticultural Sections of the Soils and Crops Branch are assisting in the preparation of training courses for pesticide retailers and commercial applicators, as required under the new Pesticides and Fertilizers Control Act.

The Branch also supports public herbicide education programs on application techniques and safety.

g) Problems and Concerns

No problems associated with pesticide control in Manitoba were identified by the Soils and Crops Branch.

5.2 MANITOBA DEPARTMENT OF MINES, RESOURCES AND ENVIRONMENTAL MANAGEMENT

The Manitoba Department of Mines, Resources and Environmental Management, through the Environmental Control Branch is responsible for control of pesticide discharges to the environment in Manitoba.

The Clean Environment Commission, responsible only to the Minister, reviews proposals and prescribes limits on use of insecticides by Government Departments, Crown Corporations and Municipalities in residential or recreational areas.

Figure 10 illustrates the organization of the Department relevant to pesticides control.

a) Acts, Regulations and Guidelines

The Clean Environment Act provides for the establishment of regulations specifying quantities of contaminants that may be discharged into the air, water and soil. A contaminant is defined as any substance that affects the natural, physical, chemical or biological quality of the environment.

Section 14 of the Act requires that anyone who plans to undertake a process that will or may result in the discharge of any contaminant into the environment must file a proposal of his intentions with the Department.

Regulation 156/74, under the Act, requires that persons who intend to apply pesticides must submit a proposal of their intentions as specified in Section 14 of the Act. Exceptions are as follows:

i) agricultural producers or householders applying pesticides to their own property

MINES, RESOURCES AND ENVIRONMENTAL MANAGEMENT

CLEAN ENVIRONMENT COMMISSION

MANITOBA ENVIRONMENTAL COUNCIL

ENVIRONMENTAL MANAGEMENT DIVISION

Environmental Control Branch
- Water Pollution Control Section
- Food Protection Section

FIGURE 10 - MANITOBA DEPARTMENT OF MINES, RESOURCES AND ENVIRONMENTAL MANAGEMENT ORGANIZATION

ii) municipalities or Provincial Government agencies applying herbicides to conform with the Noxious Weeds Act

iii) municipalities or Provincial Government agencies applying insecticides to areas not designated as residential or recreational

The Department interprets an agricultural producer or householder to mean not only the owner of the land but also a commercial pesticide applicator hired by the owner to apply pesticides to his land. As a result, commercial pesticide applicators are exempted from Section 14 of the Act, unless they are applying insecticides on behalf of a Government Department, Crown Corporation, or Municipality, in a residential or recreational area.

The regulation also requires that Government departments and municipalities register annually with the Department of Mines, Resources and Environmental Management prior to applying any pesticide. In addition, persons applying pesticides to a body of water not wholly contained within their own property must register with the Department. Registration involves supplying the Department with the following information:

i) the location of the pesticide application

ii) the purpose of the pesticide application

iii) the projected commencement and completion dates of the pesticide application

iv) the pesticides to be used and the rates of application

v) the total area to be treated

vi) the method of pesticide application

The Department of Mines, Resources and Environmental Management is also responsible for administration of the Public Health Act and Regulations.

The Act permits the Minister to make regulations respecting the destruction of rodent pests, insect pests, and vermin of all kinds, and the methods and chemicals used in destroying or controlling them. Regulations P210-R3 under the Act regulates fumigation programs and those conducting them. Every person using hydrocyanic acid, methyl bromide, or sodium fluoro-acetate for pest control must acquire a permit from the Department. In addition, the applicant must carry between $25,000 and $55,000 liability insurance depending on the size of operation. The Act also specifies the methods, techniques, and safety precautions which must be followed when conducting a fumigation program.

b) Organization and Control Responsibilities

The structure of the Department of Mines, Resources and Environmental Management relevant to pesticide control is illustrated in the organization chart shown in Figure 10. The Clean Environment Commission, established under Section 2 of the Clean Environment Act, and the Manitoba Environmental Council report directly to the Minister and have responsibilities related to pesticide control.

The Clean Environment Commission is responsible under Section 14 of the Act for reviewing and approving or rejecting proposals submitted by Government departments and municipalities intending to apply insecticides in residential or recreational areas. The Commission is made up of one permanent chairman and five members with various affiliations, all appointed by the Minister.

The Commission meets weekly to review proposals, hold public hearings, and issue orders. These orders approving pesticide use prescribe the type of pesticide which may be applied, the rate of application and other conditions relating to its use.

The Manitoba Environmental Council is an advisory body to the Minister. It is composed of approximately 100 members appointed by the Minister and has a seven member sub-committee concerned with pesticide use. The committee examines and evaluates proposals submitted to the Clean Environment Commission, prepares guidelines for pesticide usage and recommends necessary changes to control legislation. The Council is strictly advisory in nature and has no statutory powers.

The Environmental Control Programs Branch, within the Environmental Management Division, is responsible for enforcing Regulation 156/74 on pesticides, under the Clean Environment Act, and for ensuring compliance with the conditions of orders issued by the Clean Environment Commission. The Water Pollution Control Section within the Branch, is responsible for control of pesticide application to water, while the Food Protection Section handles most pesticide monitoring and enforcement in the Province.

c) Permit and Licensing Procedures

Regulation 156/74 requires that all Government departments, Crown Corporations, Municipal Corporations or any agent acting on their behalf, register with the Department of Mines, Resources and Environmental Management prior to applying any pesticide. Registration involves providing information regarding the location, purpose, method, and duration of the pesticide application as well as the chemicals to be used, the rates of application, and the total area to be treated.

The regulation is interpreted to mean only Provincial Government departments and Crown Corporations, thereby exempting Federal Facilities. However, it was indicated that Manitoba currently has a working relationship with the District Office of the Environmental Protection Service, Fisheries and Environment Canada, whereby it is agreed that all persons applying pesticides to Federal Government property, such as National Parks, DND bases and CNR right-of-ways will comply with at least the minimum Provincial requirements.

Any person intending to apply pesticides to a body of water not wholly contained within their own property must also register with the Department.

A municipality wishing to institute an insecticide application program, within a residential or recreational area, such as spraying for mosquito control, must follow one of the two routes described below:

i) in accordance with Section 14 (1) of the Clean Environment Act, the municipality may submit a proposal to the Clean Environment Commission outlining its proposed pesticide application program. The Commission reviews the application and advertises the municipality's intentions in local newspapers. If any opposition to the program is expressed, the Commission holds a public hearing. Following this hearing, the Commission decides to accept or reject the proposal; if accepted, an order specifying the conditions which must be complied with in conducting the pesticide application program is issued

ii) Section 14.1 (1) of the Clean Environment Act states that a municipality may carry out a pesticide application program without obtaining Clean Environment Commission approval, as required by Section 14 (1), if it can demonstrate that the program will not have a significant impact on the environment beyond the municipality. An environmental impact statement must be filed with the Department, describing the program and assessing its possible effect on the environment within and beyond the municipality

To date, only the City of Winnipeg has taken advantage of this latter method under Section 14.1 (1). A relatively high cost is associated with preparing an acceptable environmental impact statement. Thus smaller communities are not prepared to follow this route.

Regulation P210-R3 under the Public Health Act prohibits any person from fumigating any building unless he holds a permit issued by the Department of Mines, Resources and Environmental Management. In order to qualify for a permit, a fumigator must pass an examination set by the Department

based on the regulations and safety precautions associated with the handling and use of fumigation chemicals.

d) Field Monitoring and Enforcement

A single individual within the Food Protection Section is largely responsible for enforcing Regulation 156/74 and ensuring compliance with the conditions of Clean Environment Commission orders. This responsibility is accomplished by regularly making unannounced site inspections at locations where pesticide application programs are being carried out.

The Water Pollution Control Section conducts a routine monitoring program for pesticides in surface waters. All major water courses in the Province are examined between one and four times per year. Laboratory analyses for pesticide residues are carried out by the Technical Services Branch. Although no significant pesticide residues have been discovered to date in any surface water samples, the Department plans to begin collecting and analyzing sediment samples from water courses in the near future.

e) Inventory Mechanisms

The Department of Mines, Resources and Environmental Management has comprehensive inventory data on pesticide use by Government departments, Crown Corporations, and Municipal Corporations and on pesticide use in water bodies. This information arises out of the requirement to register this information with the Department prior to application.

However, these data are not currently compiled into any type of summary inventory report.

f) Public Information

The Environmental Management Division publishes a brochure as a guide to mosquito abatement programs in Manitoba. The Division also provides basic information to fumigators regarding regulations respecting and safety in the use of various fumigants.

g) Problems and Concerns

The Environmental Management Division has recently prepared a position paper on pesticides. The major concerns expressed in this paper were as follows:

i) the need for more co-ordination between the Federal Government and the Provinces on legislation concerning the use of pesticides, regulations, control monitoring, enforcement, research, registration procedures and dissemination of information.

ii) the proliferation of thousands of pesticide formulations to control relatively few pests in the absence of an identified need.

iii) the potential effects of long term exposure of a population to low doses of toxic substances.

iv) the use of aerial spraying as a method of pesticide application, where the objective is to blanket an area in order to hit a target. This application method offers little control of spray drift and private properties are experiencing injurious effects with no provision for recompense except through costly litigation processes.

5.3 OTHER ACTS

A number of other Acts administered by various Government departments and bodies also deal with pesticides, although in a very peripheral manner. These are briefly discussed below:

The Dairy Act. Administered by the Department of Agriculture, requires that substances capable of contaminating any dairy product shall not be stored within the dairy manufacturing plant or near the finished product.

The Groundwater and Water Well Act. Administered by the Department of Mines, Resources and Environmental Management, provides for the purity and conservation of well waters and groundwaters, stipulating that no one shall dig wells without certain precautions and that no one shall deposit any material in or near a well which might impair the purity of the water.

The Predator Control Act. Administered by the Department of Renewable Resources and Transportation Services, requires that no person shall kill a predator by use of poison baits without written permission of the Minister appointed for the administration of the Act.

The Wildlife Act. Administered by the Department of Renewable Resources and Transportation Services, makes it an offence to take, kill or capture a wild animal using poison.

The Forest Act. Administered by the Department of Renewable Resources and Transportation Services. Under Section 43, the Minister may make arrangements with Federal, Provincial or municipal authorities or the owner or licensee of a forest, for the protection of forest resources, including protection from insects and disease.

The City of Winnipeg Act. Permits the City of Winnipeg to carry out such work as deemed necessary for the suppression of mosquitoes, flies and other insects within fifteen miles of the City boundary. This Act does not exempt the City from the requirements of the Clean Environment Act.

The Pharmaceutical Act. Provides for the regulation of the sale of poisons by licensed people and that the sale of certain poisons shall be recorded. However, products registered under the Pest Control Products Act (Canada) are exempt.

5.4 ADVISORY COMMITTEES

5.4.1 Intergovernmental Committees

a) Manitoba Agricultural Services Co-Ordinating Committee

The Manitoba Agricultural Services Co-Ordinating Committee was at the formation stage at the time this report was prepared; neither the membership nor terms of reference for the committee have been established.

The Committee will be chaired by the Deputy Minister of Agriculture, it is anticipated that its role will be similar to that of the Agricultural Services Co-ordinating Committees in the other Prairie Provinces.

5.4.2 Interdepartmental Committees

a) Manitoba Committee on Pesticide Residue Testing

The Manitoba Committee on Pesticide Residue Testing is an interdepartmental committee established in 1962.

The terms of reference are as follows:

- To regularly review pesticide residue problems in the Province with the object of:

  i) Eliminating or alleviating local, area, or regional pesticide problems

  ii) Monitoring agricultural and other food products for the presence of pesticides

  iii) Investigating chronic pesticide residue problems.

- To establish effective liaison with appropriate Provincial, Federal and University authorities involved with pesticides.

- To submit regular reports and make recommendations to the Deputy Minister of Agriculture on the pesticide residue situation in Manitoba.

Membership is as follows:

Manitoba Department of Agriculture	2
Manitoba Department of Mines, Resources and Environmental Management	1
TOTAL	3

Advisors:
- Agriculture Canada
- Health and Welfare Canada

The committee meets annually to establish quotas for sampling food commodities produced in the Province for insecticide residue analysis. Its activities are ongoing; approximately 500 samples of milk, meat and poultry products are collected and analyzed each year. All milk production is tested twice annually, with most other commodities tested at least once annually. If actionable levels of insecticide residues are found in a sample, it is the responsibility of the committee to identify and remove the source of contamination.

The committee reports its findings to the Deputy Minister, Manitoba Department of Agriculture, with copies of all analytical results sent to Agriculture Canada and the Health Protection Branch.

b) Manitoba Pesticides Advisory Committee

The Manitoba Pesticides Advisory Committee is currently being established pursuant to Section 6 of the new Pesticides and Fertilizers Control Act.

The committee will be composed of two representatives from the Manitoba Department of Agriculture, one from the Manitoba Department of Mines, Resources and Environmental Management, one from the Canadian Agricultural Chemicals Association and one from the Union of Manitoba Municipalities.

Terms of reference had not been established for the Committee at the preparation of this report.

5.4.3 Other Advisory Bodies

a) Environmental Chemicals Committee

The Environmental Chemicals Committee is a sub-committee of the Manitoba Environmental Council, Manitoba Department of Mines, Resources and Environmental Management.

The terms of reference are as follows:

- To evaluate ways in which chemicals are used in or inadvertently discharged to the environment.

- To recommend appropriate changes and safeguards in registration, control legislation and procedures.

The Manitoba Environmental Council is composed of up to 100 members appointed by the Minister of Mines, Resources and Environmental Management. Approximately 40 organizations are represented on the Council, in addition to other individuals representation. The Council serves as an advisory body to the Minister, it has no statutory powers.

The sub-committee on Environmental Chemicals is currently made up of seven members, with three advisors from outside the Council. Four members of the Committee represent themselves with the remaining three representing the Zoological Society of Manitoba, the Manitoba Medical Association, and the Entomological Society of Manitoba. The advisors are from the University of Manitoba, Entomology Department and two from Fisheries and Environment Canada.

Any and all interested members of the Manitoba Environmental Council may sit on the Environmental Chemicals Committee.

In recent years, the Committee's activities have centered largely around the preparation and presentation of briefs at Clean Environment Commission public hearings examining residential and recreational pesticide application proposals by municipalities and Government departments. It has also prepared resolutions and recommendations for the Minister of Mines, Resources and Environmental Management respecting pesticide monitoring and control programs, training programs for Government personnel involved with mosquito abatement programs, and the preparation of information brochures regarding pesticide use.

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Agriculture Canada
Fisheries and Environment Canada
Health and Welfare Canada
Alberta Agriculture
Alberta Environment
Saskatchewan Department of Agriculture
Saskatchewan Department of the Environment
Manitoba Department of Agriculture
Manitoba Department of Mines, Resources and Environmental Management

APPENDIX I

PERSONAL CONTACTS

GOVERNMENT OF CANADA

Agriculture Canada

Mr. C. H. Jefferson
Director, Plant Products Division
Ottawa

Mr. E. R. Houghton
Chief, Control Products Section
Plant Products Division
Ottawa

Mr. W. Ormrod
Head, Product Compliance Unit
Control Products Section
Plant Products Division
Ottawa

Mr. J. B. Russell
District Director
Plant Products Division
Edmonton

Dr. H. V. Morley
Research Coordinator Environment and Resources
Research Branch
Ottawa

Dr. C. D. McKeen
Research Coordinator Plant Pathology
Research Branch
Ottawa

Mr. R. M. Prentice
Research Coordinator Entomology
Research Branch
Ottawa

Dr. W. P. Cochrane
Head, Pesticide Laboratory
Laboratory Services Section
Plant Products Division
Ottawa

Dr. N. J. Bostanian
Pesticides Information Liaison Section
Research Program Service
Research Branch
Ottawa

Dr. J. R. Hay
Director, Research Station
Regina Research Station

Dr. T. G. Atkinson
Research Scientist
Lethbridge Research Station

Mr. J. Weintraub
Research Scientist
Lethbridge Research Station

Fisheries and Environment Canada

Dr. H. S. Thompson
Pesticides Review
Contaminants Control Branch
Environmental Impact Control Directorate
Environmental Protection Service
Ottawa

Dr. R. W. Reid
Northern Forest Research Centre
Canadian Forestry Service
Edmonton

Dr. A. G. Davidson
Forest Insect and Disease Specialist
Forest Protection Branch
Canadian Forestry Service
Ottawa

Dr. H. F. Cerezke
Northern Forest Research Centre
Canadian Forestry Service
Edmonton

Mr. G. A. Webster
Head, Water Pollution Control Section
Northwest Region
Environmental Protection Service
Edmonton

Dr. R. Edwards
Ecological Protection Biologist
Ecological Protection Section
Northwest Region
Environmental Protection Service
Edmonton

Mr. R. Frith
Head, Federal Activities Section
Northwest Region
Environmental Protection Service
Edmonton

Mr. R. W. Prach
Head, Avian Problems Section
Migratory Birds Division
Western and Northern Region
Canadian Wildlife Service
Edmonton

Dr. E. D. Lane
Head, Cooperative Research Section
Wildlife Research and Interpretation Division
Western and Northern Region
Canadian Wildlife Service
Edmonton

Mr. W. Begg
Regional Manager, Inspection Program
Industry Services Branch
Fisheries and Marine Service
Freshwater Institute
Winnipeg

Mr. N. Simpkins
Regional Lab
Inland Waters Directorate
Calgary

Mr. W. Gummer
Monitoring and Survey Division
Water Quality Branch
Inland Waters Directorate
Regina

Health and Welfare Canada

Mr. P. R. Bennett
Head, Agricultural Chemicals Section
Additives and Pesticides Division
Bureau of Chemical Safety
Foods Directorate
Health Protection Branch
Ottawa

Mr. J. F. Riou
Chief, Field Investigations
Bureau of Field Operations
Field Operations Directorate
Health Protection Branch
Ottawa

Mr. W. D. Charles
Supervisor, Health Protection Branch
Edmonton District Office

Mr. L. L. Wheeler
Food and Drug Inspector
Health Protection Branch
Edmonton District Office

National Research Council

Dr. J. R. Roberts
Secretary, Pesticides Subcommittee
Environment Secretariate
Associates Committee on Scientific Criteria
for Environmental Quality
Ottawa

Mr. C. R. Doucet
Secretary for Associates Committees
National Research Council
Ottawa

Department of Regional Economic Expansion

Mr. W. R. Pope
Prairie Farm Rehabilitation Administration (PFRA)
Regina

GOVERNMENT OF ALBERTA

Alberta Agriculture

Mr. J. B. Gurba
Head, Crop Protection and Pest Control Branch
Plant Industry Division

Mr. Wm. Lobay
Head, Weed Control Branch
Plant Industry Division

Mr. J. Calpas
Director, Extension Division

Mr. R. Gould
Animal Industry Division

Dr. M. J. Dorrance
Head, Zoology Section
Plant Industry Laboratory

Mr. M. Dolinsky
Entomologist, Crop Protection and
Pest Control Branch

Dr. H. B. Jeffery
Planning and Research Secretariat

Dr. H. N. Vance
Director, Veterinary Services Division

Alberta Environment

Mr. L. K. Peterson
Head, Pesticide Chemicals Branch
Pollution Control Division

Mr. B. Taylor
Pesticide Chemicals Branch

Dr. R. Leech
Environmental Research Secretariat

University of Alberta

Dr. Wm. Vandenborn
Plant Science Department

Dr. Wm. Skorpad
Plant Science Department

Dr. D. A. Boag
Department of Zoology

GOVERNMENT OF SASKATCHEWAN

Department of Agriculture

Mr. C. E. Lynn
Head, Regulatory Service
Plant Industry Branch

Mr. C. C. Peters
Pest Control Specialist
Plant Industry Branch

Dr. J. R. Jowsey
Problem Wildlife Specialist
Animal Industry Branch

Mr. R. Helm
Weed Control Specialist
Plant Industry Branch

Mr. L. Duczek
Plant Pathology Specialist
Plant Industry Branch

Mr. P. E. Polischuk
Executive Director of Farm Resources Development Division

Saskatchewan Department of the Environment

Mr. R. A. McDonald
Director
Water Pollution Control Branch

Mr. D. A. Fast
Head, Water Quality Division
Water Pollution Control Branch

Dr. D. T. Waite
Supervisor, Biological Section
Water Pollution Control Branch

University of Saskatchewan

Mr. K. G. Shipley
Extension Specialist
Extension Division

GOVERNMENT OF MANITOBA

Mr. E. P. Hudek
Assistant Deputy Minister
Marketing and Production Division
Manitoba Department of Agriculture

Mr. D. L. Smith
Senior Entomologist
Entomology Section
Technical Services Branch
Manitoba Department of Agriculture

Mr. J. O. Forbes
Chief, Weed Control Section
Soils and Crops Branch
Manitoba Department of Agriculture

Mr. C. B. Orcutt
Chief, Environmental Control Programs
Environmental Control Branch
Manitoba Department of Mines, Resources and Environmental Management