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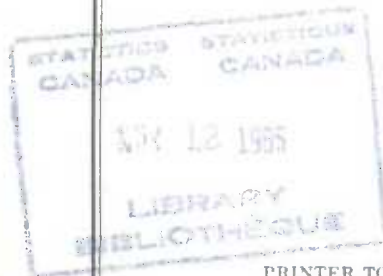
~~1933/1934~~
CANADA—DEPARTMENT OF TRADE AND COMMERCE
DOMINION BUREAU OF STATISTICS
MINING, METALLURGICAL AND CHEMICAL BRANCH

THE FERTILIZER TRADE IN CANADA

July 1, 1933—June 30, 1934

*Reprinted from the Monthly Bulletin of Agricultural Statistics
February, 1935*

Published by Authority of the Hon. R. B. Hanson, K.C., M.P.,
Minister of Trade and Commerce



OTTAWA
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1935

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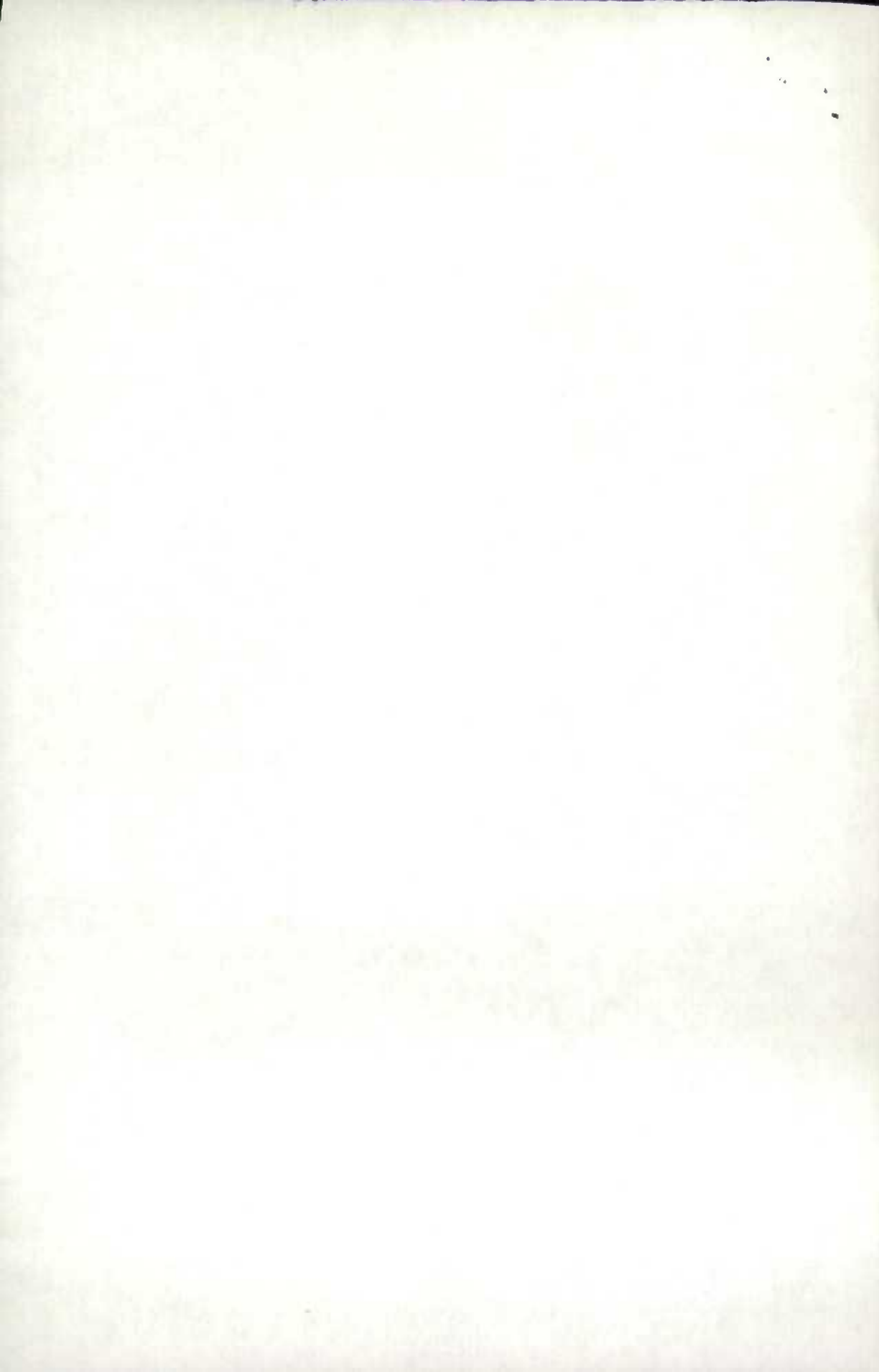
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THE FERTILIZER TRADE IN CANADA, JULY 1, 1933—JUNE 30, 1934

By W. H. LOSEE, B.Sc., Chief of the Mining, Metallurgical and Chemical Branch

This report on the fertilizer trade of Canada is compiled annually by the Mining, Metallurgical and Chemical Branch of the Bureau in co-operation with the Fertilizer Division of the Department of Agriculture, in order to assist manufacturers and importers in gauging the market for future requirements. Every effort has been made to avoid duplication in the returns. Each reporting firm was sent a list of vendors and was asked to omit sales to those listed. As a result, the sales of fertilizers and fertilizer materials should closely represent the actual consumption in Canada for the period under review.

It is encouraging to note the marked improvement in the fertilizer trade in Canada during the fertilizer year ended June 30, 1934, when compared with the preceding twelve months. Not only was there an increase in production but imports and exports were considerably in excess of those during the previous year.

Production, Imports and Exports.—According to reports received, 24 plants made mixed fertilizers and 15 made fertilizer materials; 8 firms made both materials and mixtures. Reports were received from 11 people who operated as dealers only. Importers totalled 29 and 22 firms reported exports of fertilizers. Production of fertilizers in 1934 totalled 344,953 short tons, of which 119,795 tons or 34.7 per cent were mixed fertilizers; the total tonnage produced was 29.5 per cent higher than in the previous year.

The production of sulphate of ammonia increased to 80,753 tons from 69,229 tons in 1933, cyanamide rose to 82,755 tons from 53,934 tons, superphosphate to 45,179 tons from 34,640 tons and ammonium phosphate production increased to 10,765 tons from 4,837 tons; these were the principal materials produced. Tankage, bone meal, dried blood and fish meal were also made in larger quantities than during the previous fertilizer year.

Imports of fertilizers increased 23.79 per cent to 145,955 tons from 117,904 tons. Principal import items were—superphosphate 70,165 tons; muriate of potash 26,677 tons; natural phosphate rock 13,426 tons; nitrate of soda 8,892 tons; sulphate of ammonia 7,395 tons; potash manure salts and kainite 7,038 tons.

Exports totalled 166,045 tons compared with 137,342 tons last year, an increase of 20.9 per cent. Of this tonnage 71,802 tons were cyanamide, 71,442 tons sulphate of ammonia, 4,859 tons ammonium phosphate and 13,228 tons mixed fertilizers.

Sales.—Sales of fertilizer materials and mixed fertilizers, including exports and excluding the fertilizers sold in Canada for the production of mixed fertilizers, totalled 361,096 tons as compared with 303,749 tons in the preceding twelve months, an increase of 15.6 per cent. Sales in Canada amounted to 194,851 tons as against 166,407 tons during the year ended June 30, 1933, an increase of 17 per cent. Of the total sales in the Dominion, Ontario purchases accounted for 33 per cent; Quebec 21 per cent; New Brunswick 15 per cent; Nova Scotia 13 per cent; Prince Edward Island 9 per cent; British Columbia 6 per cent, and the Prairie Provinces the remainder.

Among the mixed fertilizers, the one having the largest sale contained 2 per cent nitrogen, 12 per cent phosphoric acid, and 6 per cent potash. This mixture was sold in Ontario and Quebec only, Ontario taking much the larger proportion. A 4-8-10 mixture represented more than half the total sales in Prince Edward Island. The favoured mixtures in Nova Scotia were: 4-8-4; 4-8-7; 2-10-4; 5-10-5 and 9-5-7. Of the total New Brunswick sales, 34 per cent were on a 4-8-13 basis, and considerable quantities of the mixtures 4-6-10, 5-8-12 and 5-9-8 were also

sold. Sales in Quebec and Ontario consisted of many different mixtures, depending upon the requirements of the crops and soils. British Columbia consumers showed a marked preference for a 3-10-8 mixture, a grade not sold in any other province, except for one ton recorded as being sold for consumption in one of the Prairie Provinces.

I.—Total Sales of Fertilizer Materials and Mixed Fertilizers for the Fertilizer Years ended June 30, 1933 and 1934

(Short tons)

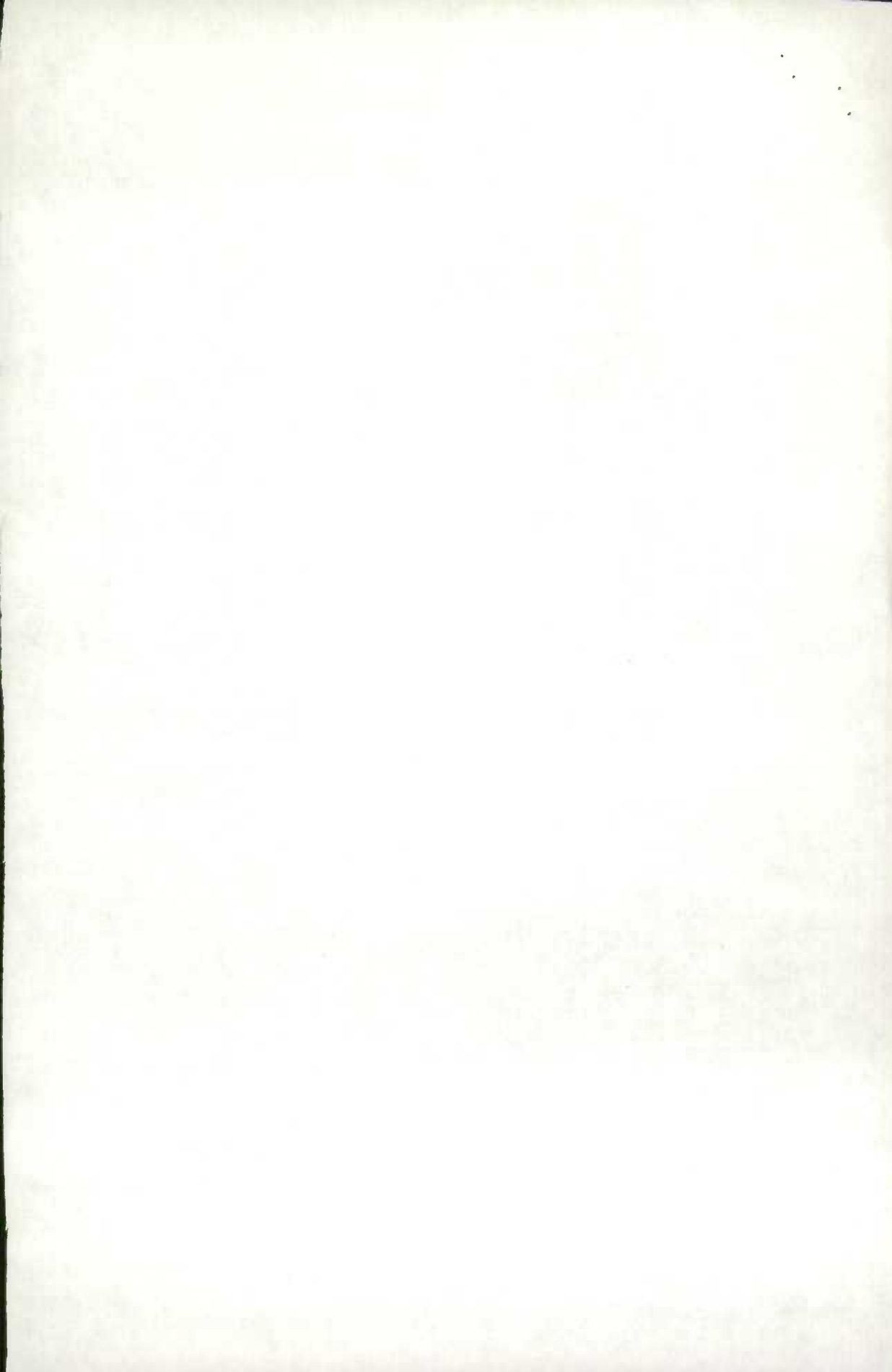
Provinces	Fertilizer materials			Mixed fertilizers		
	1933	1934	Percentage increase + decrease —	1933	1934	Percentage increase + decrease —
	tons	tons	p.c.	tons	tons	p.c.
Prince Edward Island.....	7,025	9,644	+37.3	6,200	7,842	+26.5
Nova Scotia.....	11,320	11,534	+ 1.9	12,036	14,222	+18.2
New Brunswick.....	20,200	16,584	-17.9	12,927	12,841	- 0.7
Quebec.....	19,598	24,994	+27.5	10,333	15,404	+49.1
Ontario.....	15,868	25,840	+62.8	37,924	38,912	+ 2.6
Manitoba, Saskatchewan, and Alberta.....	2,842	4,924	+73.3	72	68	- 5.6
British Columbia.....	5,521	5,435	- 1.6	4,541	6,607	+45.5
Canada.....	82,374	98,955	+20.1	84,033	95,896	+14.1
Exported.....	121,839	153,017	+25.6	15,503	13,228	-14.7
Grand Total.....	204,213	251,972	+23.4	99,536	109,124	+ 9.6

II.—Production in Canada, Imports and Exports of Fertilizers, as Reported by the Manufacturers and Importers during the Years ended June 30, 1933 and 1934

(Short tons)

Items	1933			1934		
	Manu- factured	Imported	Exported	Manu- factured	Imported	Exported
Mixed fertilizers.....	100,727	1,761	15,503	119,795	1,032	13,228
Sulphate of ammonia.....	69,229	9,641	50,799	80,753	7,395	71,442
Cyanamide.....	53,934	38	67,432	82,755	40	71,802
Calcium nitrate.....	—	754	—	—	1,400	—
Nitrate of soda.....	—	4,336	353	—	8,892	180
Superphosphate*.....	34,640	52,733	1,377	45,179	70,165	2,933
Basic slag.....	—	6,410	2	—	1,992	—
Nitrochalk.....	—	—	1	—	61	6
Bone phosphate.....	—	50	—	—	25	—
Natural phosphate rock.....	—	20,801	—	—	13,426	—
Bone meal and bone flour.....	746	126	30	871	246	—
Muriate of potash.....	—	13,107	606	—	26,677	218
Sulphate of potash.....	—	901	—	—	3,502	41
Potash manure salts and kainite.....	—	4,846	—	—	7,038	—
Tankage.....	1,122	1,305	579	1,823	1,016	1,023
Sheep manure.....	—	305	—	—	429	—
Dried blood.....	753	—	85	874	20	413
Fish meal.....	—	125	—	616	492	40
Ammonium phosphate.....	4,837	143	547	10,765	653	4,859
Other materials.....	234	522	28	1,522	1,189	36
Total.....	266,222	117,904	137,342	344,953	145,955	166,045

*Contains 16%, 19%, 20% and 45% superphosphate.

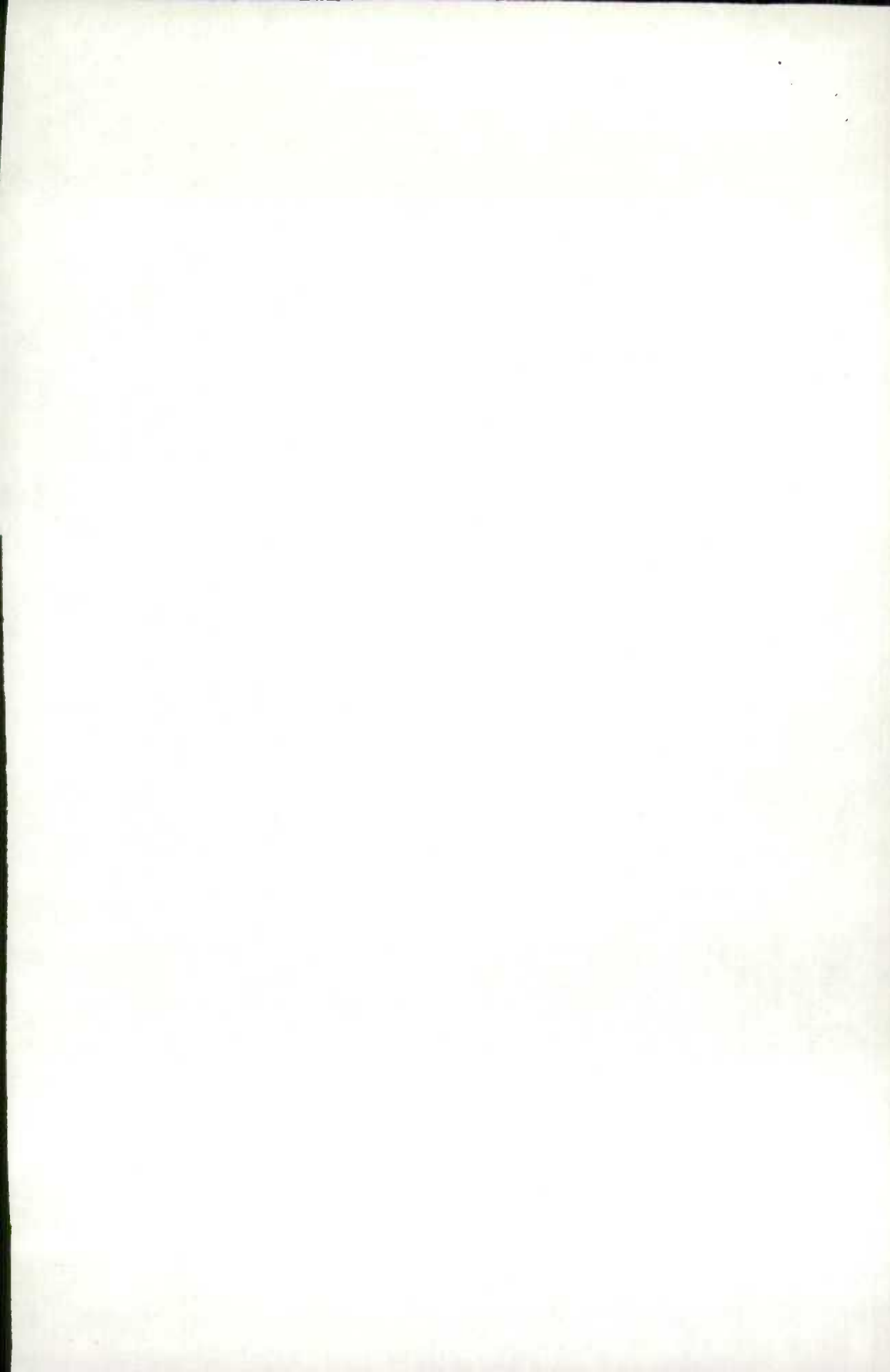


**III.—Sales of Fertilizers, except for Manufacturing Purposes, during the Year ended
June 30, 1934**
(Short tons)

Fertilizers	P.E.I.	N.S.	N.B.	Que.	Ont.	Man., Sask. and Alta.	B.C.	Total sold in Canada	Exported from Canada	Grand total
Nitrate of soda.....	361	1,124	1,702	283	422	10	221	4,123	180	4,303
Sulphate of ammonia.....	1,345	1,488	1,677	3,305	1,073	53	949	9,890	71,442	81,332
Cyanamide.....	-	319	-	102	801	-	5	1,227	71,802	73,029
Nitrochalk.....	25	15	2	5	31	-	1	79	6	85
Calcium nitrate.....	-	720	-	22	3	-	-	745	-	745
Bone phosphate.....	-	-	-	-	-	-	2	2	-	2
Superphosphate.....	6,343	5,396	10,033	16,845	20,641	14	970	69,242	2,953	63,195
Natural phosphate rock.....	-	-	40	-	5	-	1	46	-	46
Basic slag.....	-	1,805	190	1,015	-	-	83	3,093	4	3,097
Bone meal and bone flour.....	-	128	24	22	486	47	520	1,227	-	1,227
Muriate of potash.....	1,570	517	2,770	2,733	327	4	310	8,231	218	8,449
Sulphate of potash.....	-	-	-	160	91	1	117	369	41	410
Potash manure salts and kainite.....	-	-	-	-	-	-	10	10	-	10
Tankage.....	-	10	126	206	605	28	398	1,373	1,023	2,396
Sheep manure.....	-	12	1	35	279	-	59	386	-	386
Dried blood.....	-	-	1	-	133	47	216	397	413	810
Whale products.....	-	-	-	-	-	-	462	462	-	462
Fish meal.....	-	-	18	-	63	-	912	993	40	1,033
Ammonium phosphate.....	-	-	-	22	201	4,720	199	5,142	4,859	10,001
Other fertilizer materials.....	-	-	-	239	679	-	-	918	36	954
Total Fertilizers.....	9,644	11,534	16,584	24,994	25,840	4,924	5,435	98,955	153,017	251,872
Total mixed fertilizers.....	7,842	14,222	12,841	15,404	38,912	68	6,607	95,896	13,228	109,124
Grand Total, 1934.....	17,486	25,756	29,425	40,398	64,752	4,992	12,042	194,851	166,245	361,096
Grand Total, 1933.....	13,225	23,356	33,127	29,931	53,792	2,914	10,062	166,407	137,342	303,749

IV.—Mixed Fertilizers Sold during the Year ended June 30, 1934
(Short tons)

Formulae	P.E.I.	N.S.	N.B.	Que.	Ont.	Man., Sask., Alta.	B.C.	Canada	Exported from Canada	Grand total
N P ₂ O ₅ K ₂ O										
0 10 10.....	-	-	-	38	83	-	-	121	-	121
0 10 16.....	-	-	-	-	-	-	258	258	-	258
0 12 5.....	-	-	-	18	3,027	-	-	3,045	-	3,045
0 12 6.....	-	-	-	-	592	-	-	592	-	592
0 12 10.....	-	-	-	-	90	-	159	249	-	249
0 12 15.....	-	-	-	104	471	-	-	575	-	575
0 14 6.....	-	-	-	-	651	-	46	697	-	697
2 8 4.....	-	131	685	625	2,653	-	-	4,094	-	4,094
2 8 5.....	-	-	-	-	1,310	-	-	1,310	-	1,310
2 8 10.....	-	-	-	207	662	-	-	869	-	869
2 8 16.....	-	-	-	-	251	-	-	251	-	251
2 10 2.....	3	99	25	-	-	-	-	127	47	174
2 10 4.....	115	2,250	971	1	-	-	-	3,346	87	3,433
2 10 6.....	213	233	154	-	352	-	-	952	26	978
2 12 6.....	-	-	-	2,748	11,793	-	-	14,541	-	14,541
2 12 10.....	-	-	-	420	71	-	-	491	-	491
2 16 6.....	-	-	-	1	2,690	-	6	2,697	-	2,697
3 6 10.....	-	-	-	-	-	-	-	-	159	159
3 8 4.....	-	-	-	-	3,509	-	-	3,509	143	3,652
3 8 6.....	-	-	-	63	125	-	19	207	-	207
3 9 6.....	-	-	-	-	775	-	-	775	-	775
3 10 5.....	-	-	-	22	2,800	-	4	2,826	-	2,826
3 10 6.....	-	-	-	2	1,058	-	-	1,060	-	1,060
3 10 8.....	-	-	-	-	-	1	3,608	3,609	-	3,609
4 6 4.....	-	-	-	-	-	-	167	167	-	167
4 6 10.....	32	952	2,107	-	-	-	-	3,091	428	3,519
4 8 4.....	12	3,303	139	163	9	-	146	3,772	244	4,016
4 8 6.....	-	-	-	117	1,232	-	4	1,353	28	1,381
4 8 7.....	1,586	2,406	641	7	-	-	-	4,730	844	5,574
4 8 10.....	4,132	386	214	7,061	2,206	-	-	13,999	1,087	15,086
4 8 13.....	1,443	213	4,412	-	-	-	21	6,089	407	6,496
4 9 4.....	-	-	-	-	198	-	-	198	-	198
4 10 4.....	-	-	-	-	-	-	146	146	-	146
4 10 10.....	-	-	-	-	-	-	971	971	-	971
4 12 4.....	-	-	20	16	289	-	11	336	1	337
4 12 6.....	-	-	-	2	204	-	-	206	-	206
5 6 9.....	-	-	-	578	-	-	-	-	-	578
5 8 7.....	-	112	3	419	918	-	-	1,452	217	1,669
5 8 10.....	-	-	2	4	-	-	-	6	322	328
5 8 12.....	13	11	1,591	25	-	-	-	1,640	2,092	3,732
5 9 8.....	293	649	1,762	3	-	-	-	2,707	6,365	9,072
5 10 5.....	-	1,809	51	-	182	2	140	2,194	32	2,226
5 12 2.....	-	9	3	62	37	-	10	121	-	121
6 8 10.....	-	-	5	2,319	177	-	-	2,501	1	2,502
6 10 4.....	-	-	-	-	-	-	149	149	-	149
6 10 10.....	-	-	-	-	-	-	494	494	-	494
8 16 14.....	-	-	38	-	-	-	-	38	301	339
8 16 20.....	-	-	9	73	6	-	-	88	293	381
9 5 7.....	-	1,548	-	110	46	-	-	1,704	-	1,704
Other mixed fertilizers.....	-	12	9	196	435	65	248	905	104	1,069
Total.....	7,842	14,222	12,841	15,404	38,912	68	6,607	95,896	13,228	109,124



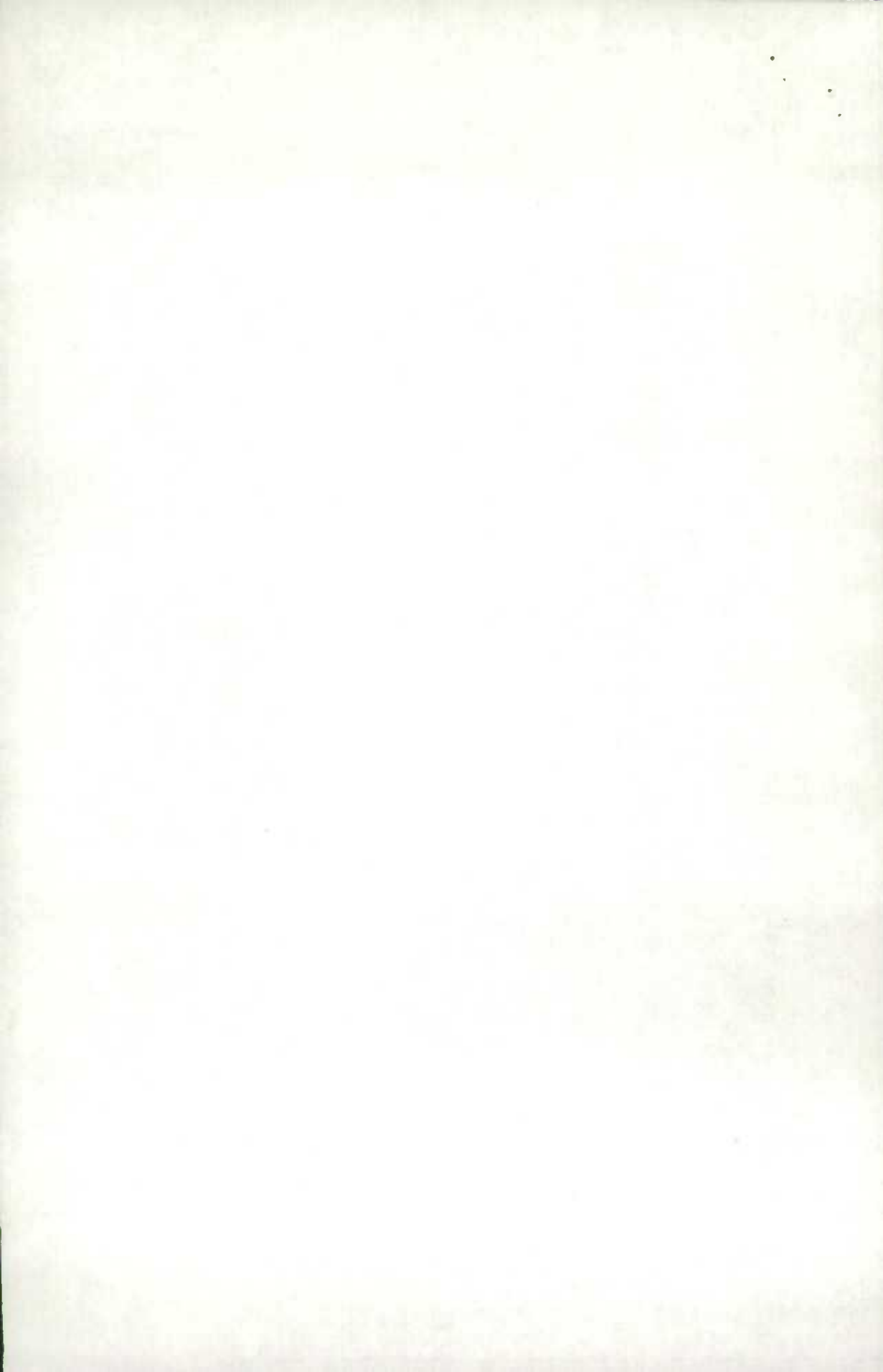
V.—Nitrogen, Phosphoric Acid and Potash contained in Mixed Fertilizers Sold in Canada, during the Years ended June 30, 1933 and 1934

(Short tons)

Provinces	1933				1934			
	Total tonnage	Nitrogen	Phosphoric acid	Potash	Total tonnage	Nitrogen	Phosphoric acid	Potash
	tons	lb.	lb.	lb.	tons	lb.	lb.	lb.
Prince Edward Island.....	6,200	423,260	965,480	1,155,020	7,842	620,240	1,272,540	1,515,860
Nova Scotia.....	12,036	1,019,100	1,956,180	1,287,380	14,222	1,236,120	2,333,820	1,680,840
New Brunswick.....	12,827	1,067,100	2,066,740	2,035,480	12,841	1,026,400	2,063,320	2,551,920
Quebec.....	10,333	761,420	1,844,020	1,825,840	15,404	1,194,070	2,713,410	2,599,620
Ontario.....	37,924	2,045,010	7,518,590	4,323,160	38,912	1,792,580	8,246,220	4,651,280
Manitoba, Saskatchewan and Alberta.....	72	9,340	27,620	9,340	68	6,020	17,880	6,120
British Columbia.....	4,541	305,240	870,480	676,120	6,607	445,660	1,300,260	1,094,260
Exported from Canada.....	15,503	1,400,560	2,529,580	2,842,060	13,225	1,274,300	2,322,920	2,447,660
Total.....	99,536	7,101,030	17,815,690	14,154,400	109,124	7,595,780	20,270,370	16,547,560
Miscellaneous (no analyses given).....	219	-	-	-	255	-	-	-

VI.—Reporting Companies

Nature of Trade*	Names	Addresses
m.m.f.; i.	Agricultural Chemicals, Ltd.....	Port Hope, Ont.
m.s.a.; e.	Algoma Steel Corporation, Ltd.....	Sault Ste. Marie, Ont.
m.c.; e.; i.	American Cyanamid Co.....	535 5th Ave., New York, U.S.A.
d.	Beaver Soap and Chemical Co.....	Winnipeg, Man.
	B.C. Electric Railway Co.....	425 Carrall St., Vancouver, B.C.
d.; i.	Buckerfield's, Limited.....	Vancouver, B.C.
m.o.; e.	Burns, P. and Company.....	Calgary, Alta.
m.o.; e.	" ".....	Edmonton, Alta.
m.o.; e.	" ".....	Regina, Sask.
m.o.; e.	" ".....	Winnipeg, Man.
m.m.f.; o.; i.	" ".....	Vancouver, B.C.
d.	Canada and Dominion Sugar Co., Ltd.....	Chatham, Ont.
m.m.f.; o.; e.	Canada Packers Limited.....	St. Boniface, Man.
m.m.f.; o.; i.; e.	" ".....	West Toronto, Ont.
m.m.f.; i.; e.	" ".....	Montreal, Que.
m.m.f.; i.; e.	" ".....	St. John, N.B.
m.m.f.; i.; e.	Canadian Fertilizer Co., Ltd.....	Chatham, Ont.
i.	Canadian Hop Growers, Ltd.....	Sardis, B.C.
m.m.f.; s.p.; i.; e.	Canadian Industries, Limited.....	Montreal, Que., Plants at Halifax, N.S., Beloeil, Que., Hamilton, Ont., and New Westminster, B.C.
m.o.; e.	Canadian Packing Co., Ltd.....	Peterborough, Ont.
d.	Cedar Vale Tree Experts.....	Room 502, 1130 Bay St., Toronto, Ont.
d.; i.	Chase, Geo. A.....	Port Williams, N.S.
d.; i.	Chemicals Limited.....	384 St. Paul St. W., Montreal, Que.
d.	Clarkson Dixie Fruit Growers' Assn.....	Clarkson, Ont.
m.m.f.; i.; e.	Colonial Fertilizer Works.....	Windsor, N.S.
m.m.f.; a.p.; s.p.; s.a.; i.; e.	Consolidated Mining & Smelting Co. of Canada, Ltd.....	Trail, B.C.
d.	Consolidated Whaling Corp.....	Victoria, B.C.
d.; i.	Co-operative Fédérée de Quebec.....	130 St. Paul St. E., Montreal, Que.
d.	Davey Tree Expert Co. of Canada.....	57 Bloor St. W., Toronto, Ont.
m.s.a.	Dominion Steel & Coal Corp., Ltd.....	Sydney, N.S.
m.m.f.; o.	Dumart's Limited.....	Kitchener, Ont.
d.	The T. Eaton Co., Ltd.....	Winnipeg, Man.
m.o.	Fearman Co., Ltd.....	226 Rebecca St., Hamilton, Ont.
d.	Furuya Company, Limited.....	46 West Hastings St., Vancouver, B.C.
m.o.	Gainers Limited.....	South Edmonton, Alta.
d.	The Globe Fertilizer Co.....	Vancouver, B.C.
d.; i.	The Earle M. Grose Fertilizers.....	West Toronto, Ont.
d.; i.	Halifax Seed Co.....	Halifax, N.S.
m.s.a.; e..	Hamilton By-Product Coke Ovens, Ltd.....	Hamilton, Ont.
m.o.	Harris, W. Co., Limited.....	200 Keating St., Toronto, Ont.
	International Agricultural Corp.....	708 Stock Exchange Bldg., Buffalo, N.Y., U.S.A.
m.m.f.; i.	International Fertilizers Ltd.....	71 St. Peter St., Quebec, Que.
m.m.f.; i.; e.	International Fertilizers Ltd.....	Saint John, N.B.
m.m.f.; i.; e.	Island Fertilizer Co., Ltd.....	Charlottetown, P.E.I.



VI.—Reporting Companies—concluded

Nature of Trade*	Names	Addresses
m.m.f.; i.	Lavigneux, Arthur.....	5118 Marquette St., Montreal, Que.
d.	Manchester Products.....	18 Ainslie St. S., Galt, Ont.
m.m.f.; o.	Marquis (Estate F. Canac Marquis).....	3 rue Courcellette, Quebec, Que.
	Milwaukee Sewerage Commission.....	Milwaukee, Wis., U.S.A.
m.s.a.; e.	Montreal Coke Manufacturing Co.....	P.O. Box 1660, Montreal, Que.
d.	Mount MacKay Feed Co.....	Fort William, Ont.
m.o.	Nelson Bros. Fisheries, Ltd.....	Vancouver, B.C.
d.; i.	New Brunswick Agricultural Societies.....	East Centreville, N.B.
d.; e.	Paterson, R. Downing.....	89 Water St., Saint John, N.B.
d.; i.	P.E.I. Potato Growers' Assoc., Inc.....	Charlottetown, P.E.I.
i.	Potash Company of Canada.....	814 Royal Bank Bldg., Montreal, Que.
d.; i.	Riendeau, H.....	St. Rémi, Que.
m.m.f.	Saguenay Fertilizer Company.....	Chicoutimi, Que.
d.	St. Catharines Cold Storage & Forwarding Co. Ltd.	Davidson St., St. Catharines, Ont.
m.m.f.	Sayer and Son, Ltd.....	822 Main St., Vancouver, B.C.
m.o.	Schneiders Limited, J. M.....	321 Courtland Ave. E., Kitchener Ont.
m.m.f.; i.	Scottish Fertilizers, Ltd.....	Welland, Ont.
m.s.a.; e.	Steel Company of Canada, Ltd.....	Hamilton, Ont.
m.m.f.; i.	Stone, Wm., and Sons, Limited.....	Ingersoll, Ont.
m.m.f.; i.; e.	Summers Fertilizer Co., Ltd.....	St. Stephen, N.B.
m.m.f.; o.	Swift Canadian Company, Limited.....	Keele & St. Clair, West Toronto, Ont.
m.m.f.	Toronto Chemical & Fertilizer Co.....	248 Keele St., Toronto, Ont.
d.	United Farmers' Cooperative Co., Limited.....	Toronto, Ont.
d.	United Fruit Companies of Nova Scotia, Ltd.....	Kentville, N.S.
d.; i.	Witts Fertilizer Works.....	Norwich, Ont.
m.m.f.; o.; e.	Young and Company.....	166 Keating St., Toronto, Ont.

*m.—Manufacturing.

m.a.p.—Manufacturing ammonium phosphate.

m.c.—Manufacturing cyanamide.

m.m.f.—Manufacturing mixed fertilizers.

m.o.—Manufacturing organics.

m.s.a.—Manufacturing sulphate of ammonia.

m.s.p.—Manufacturing superphosphate.

m.p.—Manufacturing carbonate of potash.

e.—Exports.

i.—Imports.

d.—Dealer.

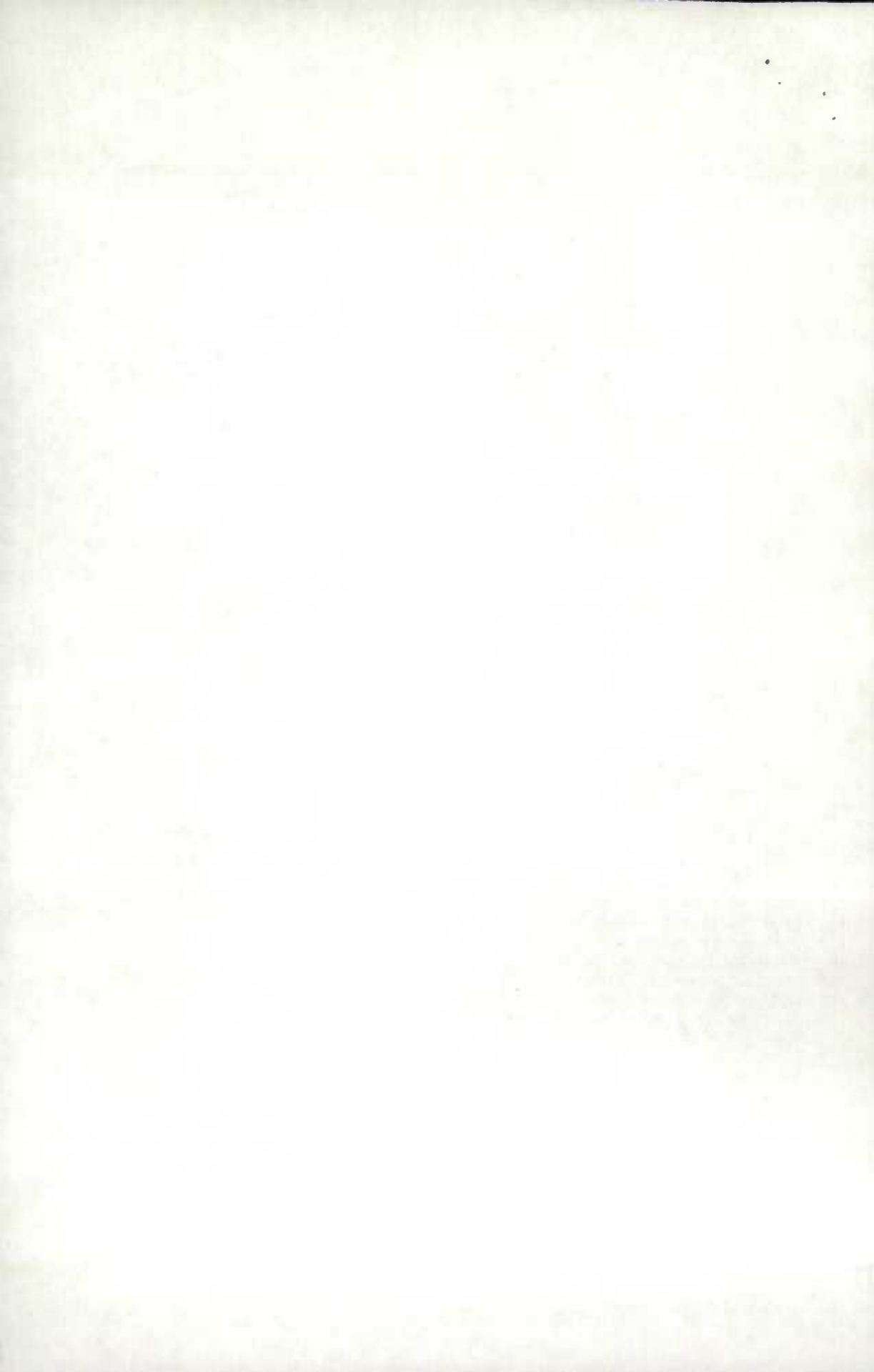
THE FERTILIZERS ACT

Contributed by G. S. Peart, Chief, Fertilizer Division, Dominion Department of Agriculture

There has been a Fertilizers Act in Canada since 1897, and down through the years it has been amended to meet new and changed conditions in the fertilizer trade and the increase in knowledge of commercial fertilizers. The present Act came into effect in 1922 and applies to all Canada. There are no provincial fertilizer laws. It is a Dominion enactment administered by the Fertilizer Division of the Dominion Seed Branch.

The principal purpose of the Act from the outset has been to protect farmers and other buyers against fraud by regulating and controlling the sale of the product. Any such commodity as commercial fertilizer, possessed of an invisible value based on a chemical content of nitrogen, phosphoric acid and potash, needs to be properly controlled. Otherwise, fraud in its sale might flourish. Rock salt could be sold as nitrate of soda, ground limestone as superphosphate, or sand as a high grade complete fertilizer and the buyer would not know the difference until disappointed in the failure of the fertilizer to produce results. It is vital, therefore, to farmers especially, that the Act be kept up to date and its enforcement in a high state of efficiency. This is also in the interest of the fertilizer industry, which depends on the confidence of the Canadian farmer for continued business and prosperity.

The modern fertilizer business is now essentially one of selling the three plant foods, nitrogen, phosphoric acid and potash according to soil and crop needs. This, of course, is a natural and sensible trend based on the fact that



the wasteful use of plant food often causes loss instead of profit to the user and weakens his faith in the value of fertilizers generally. The Fertilizers Act, by virtue of requiring the product to be sold subject to an honest guarantee as to its plant food content, has made it possible for Canadian farmers to select their fertilizers advantageously for the different crops and soils according to their needs. The days of selling just fertilizer by high pressure methods belong to the past, and the up-to-date manufacturer realizes this fully. The intelligent use of fertilizers in Canadian agriculture is bound to play a large part in the production of more profitable crops.

The principal control provisions of the Act and their purposes are briefly as follows:

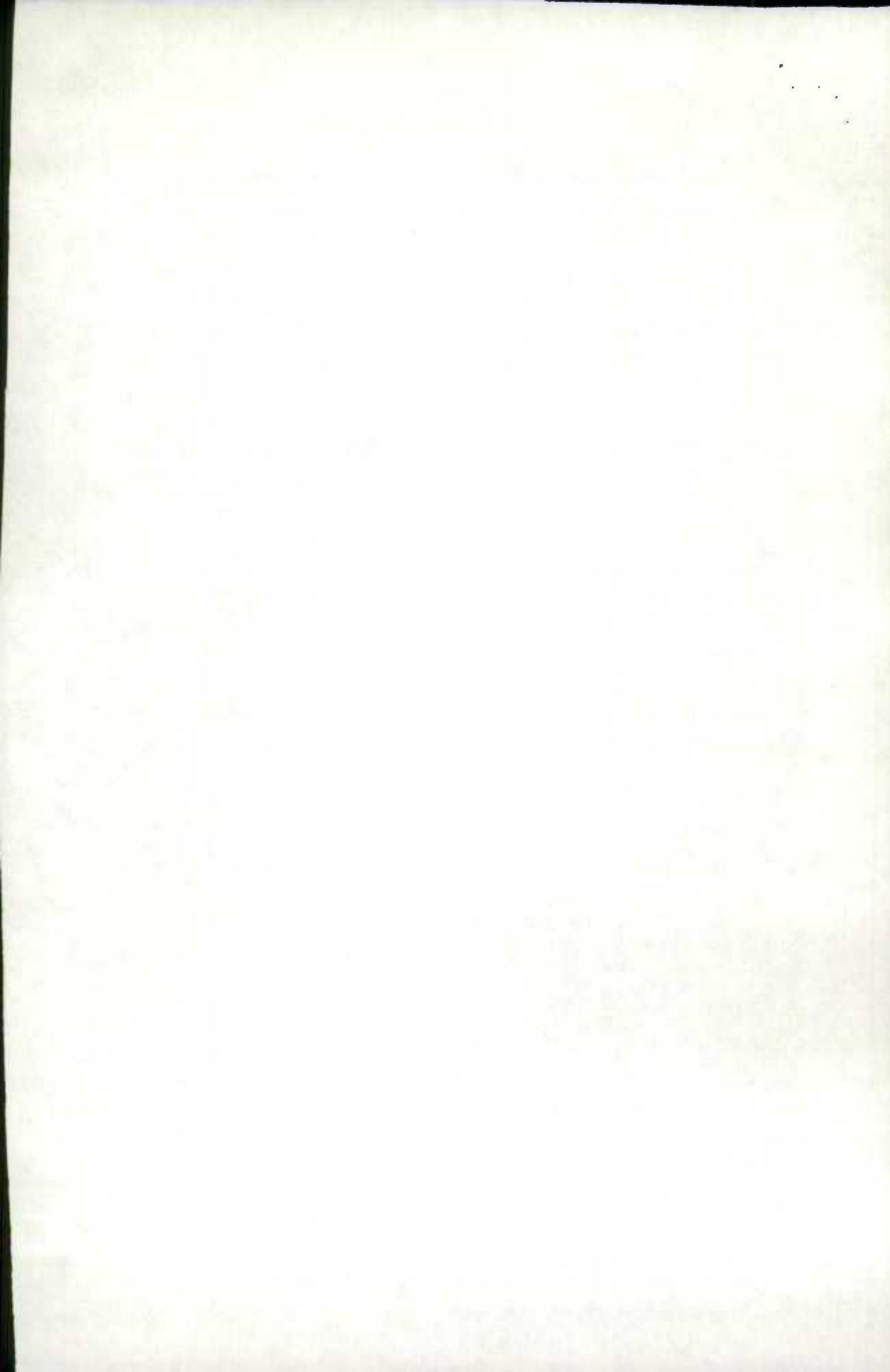
Every fertilizer sold in Canada, with the exception of a few standard chemicals, is required to be registered at Ottawa by the manufacturer, importer or vendor. Together with the application for registration there must be a statement giving the brand name, guaranteed analysis and the ingredients used by the manufacturer. The application for registration is not accepted when the brand name is regarded as misleading in respect to the guaranteed analysis, ingredients, or the purpose of the fertilizer, or when the ingredients are unsatisfactory in point of kind or quality. Thus the registration requirements of the Act play an important part in protecting the buying public against poor or inferior fertilizers and misleading brand names. Many applications for registration are refused each year.

The Act requires that every fertilizer delivered to a buyer be labelled with a guaranteed analysis in minimum percentages of nitrogen, phosphoric acid and potash. Moreover, this guaranteed analysis must be precisely the same as that given when the fertilizer was registered. It is very important that farmers and other buyers should not accept delivery of fertilizers of any kind from any one without making sure first that each bag or package is marked or labelled with the guaranteed analysis and that the analysis given be that of the fertilizer ordered. Otherwise, delivery may be accepted of a fertilizer with no guarantee or of lower guarantee than that purchased. Instances of this have occurred. The Act requires also that the registration number be stated on the label above the guaranteed analysis. This number should always be referred to when communicating with inspectors about a fertilizer, for it will help them in their investigations, as it is the key to the registration and sale of the product.

The fertilizer inspectors are ready always to investigate any complaints received from the buying public and are constantly checking the guaranteed analyses of fertilizers being delivered to farmers and other buyers. Of course it is impossible for them to inspect every shipment in Canada, so that whenever a buyer is suspicious of a fertilizer delivered to him he should communicate the fact to an inspector without delay. Buyers have the right also under the Act to take samples themselves and submit them to any official analyst authorized to do chemical analysis under the Act. Such samples must be taken according to the prescribed regulations and there is a laboratory fee for the analysis. More farmers are protecting themselves in this way each year.

Another feature of the Act prohibits the use of fertilizer ingredients which might prove harmful to soils and crops, when used in a reasonable way. Since this provision came into effect, the general quality of fertilizers sold in Canada has improved remarkably, and many a crop has been saved from damage.

One of the most important provisions of the Act in the interest of both farmers and manufacturers requires that there be at least 14 per cent of the plant foods, nitrogen, phosphoric acid and potash in any mixed fertilizer offered for sale. This provision has eliminated from the market all those products which brought disappointment to the user, instead of fertilizing his crop. By virtue of this minimum standard of plant food, every mixed fertilizer permitted to be sold nowadays should give some good result in crop production when



used properly. Materials such as nitrate of soda, superphosphate and muriate of potash have been standardized also by regulation under the Act so as to prevent their adulteration and to simplify their use in the manufacture of complete fertilizers, in home-mixing and applying singly.

The Fertilizer Division of the Dominion Seed Branch publishes annually in pamphlet form the results of analyses of samples taken by inspectors during the year, so that farmers and others may have access to the record of each of the manufacturers, importers and vendors in respect to meeting their guaranteed analyses. The public is invited to use this report as a guide before ordering fertilizers and counselled to place orders with those with the best records in this respect. As these reports give adverse publicity to offenders under the Act, they help considerably in its enforcement. Failure to meet guaranteed analysis should be regarded as a serious offence. It should be said in fairness to the trade, though, that the guarantees are usually met.

In addition to protecting the farmer against fraud, the Act emphasizes the plant food in the fertilizer. Its provisions are based on the nitrogen, phosphoric acid and potash content in forms readily available to feed the crops. It should be the business of every farmer to confine his buying to the quantities of each of the plant foods needed according to his crop and soil requirements. It is the truth to say that one unneeded unit of nitrogen or phosphoric acid or potash is equivalent to squandering the cost thereof. On the other hand, failure to use these plant foods in sufficient quantity to obtain a profitable increase in crop is false economy. The good farmer, as always, will take the time and make the effort to study the fertilizer question so as to obtain the most profit from their use and he may depend on it that the Fertilizers Act will continue to be based on his interests in this respect.

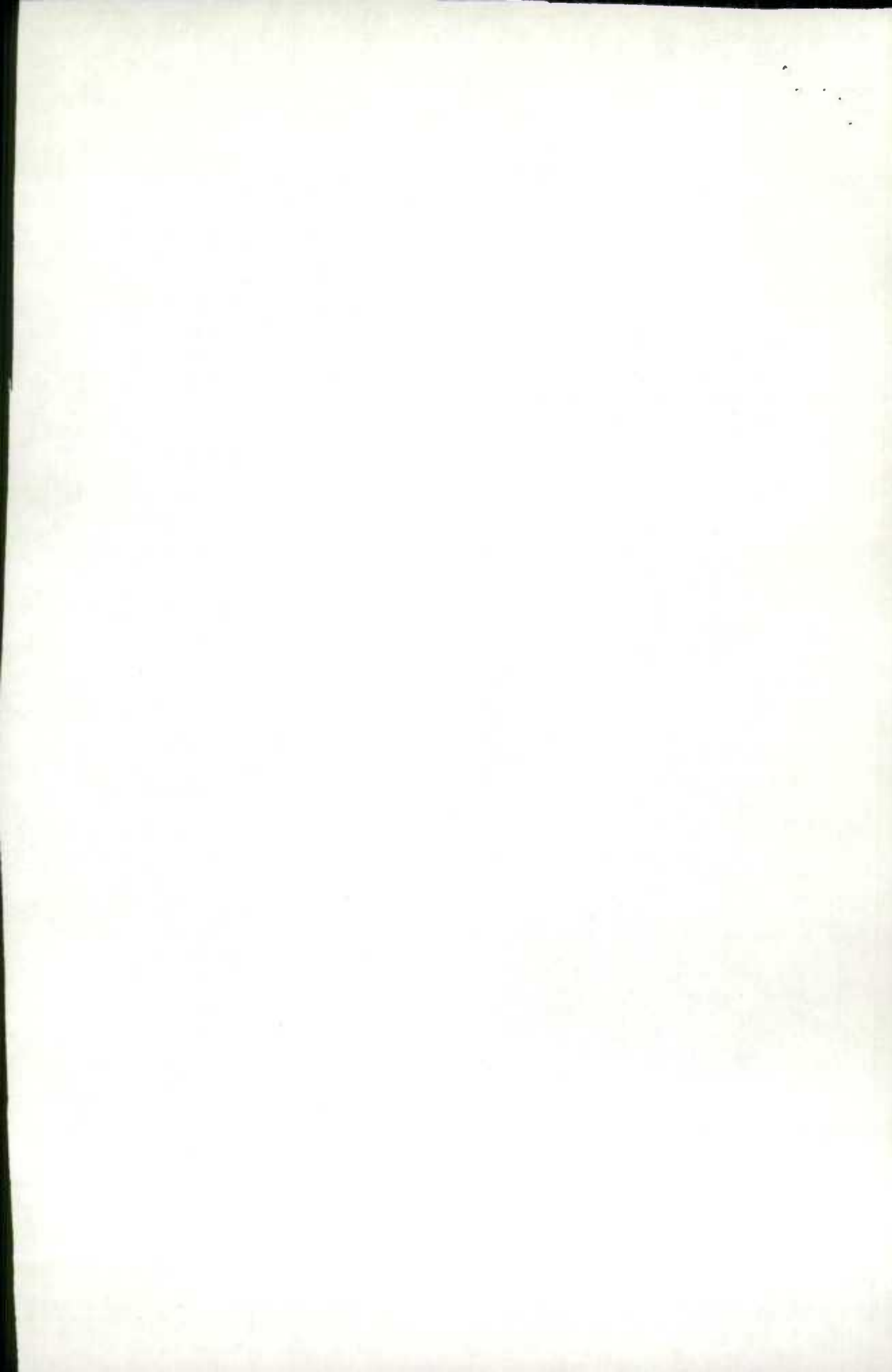
THE USE OF FERTILIZERS IN CANADA

SUBMITTED BY THE ACTING DOMINION CHEMIST, DIVISION OF CHEMISTRY, EXPERIMENTAL FARM, OTTAWA

Investigational work with fertilizers continues to receive special consideration by the Dominion Experimental Farms Branch of the Federal Department of Agriculture. Field experiments to study plant food ratios, rates of application, placement of fertilizers, etc. are conducted at the Central Farm, Ottawa, and on the Branch Farms and Stations throughout the Dominion. In addition, a considerable amount of research work in connection with special problems is undertaken at Ottawa. The chief object of this work is to obtain information which can be used as a basis for advice to farmers in connection with the economic use of fertilizers.

Recommendations with regard to the employment of fertilizers for any crop must necessarily be very general in character. This fact will be appreciated when it is considered that soils vary greatly in their physical and chemical composition and that seasonal conditions influence, to a large degree, the results which may be obtained from the application of the fertilizer. Further, the natural fertility of the soil and its previous cropping and manurial treatment are factors which should be taken into consideration when selecting a fertilizer.

During recent years much attention has been given to the placement of the fertilizer with respect to the seed. In the case of cereal crops, where relatively low rates of application are used, it is generally conceded that drilling in the fertilizer with the seed grain is good practice. With hoed crops, peas and garden seeds, direct contact of fertilizer with seed or set is not recommended; for these crops it has been found that best results may be expected when the fertilizer is placed in a narrow band along each side of the drill row, at a distance of from 2 to 4 inches from the seed and at the same depth as the seed or slightly lower. By an advantageous placement of the fertilizer it may be possible to materially reduce the rate of application without impairing yields and hence lower costs of production.



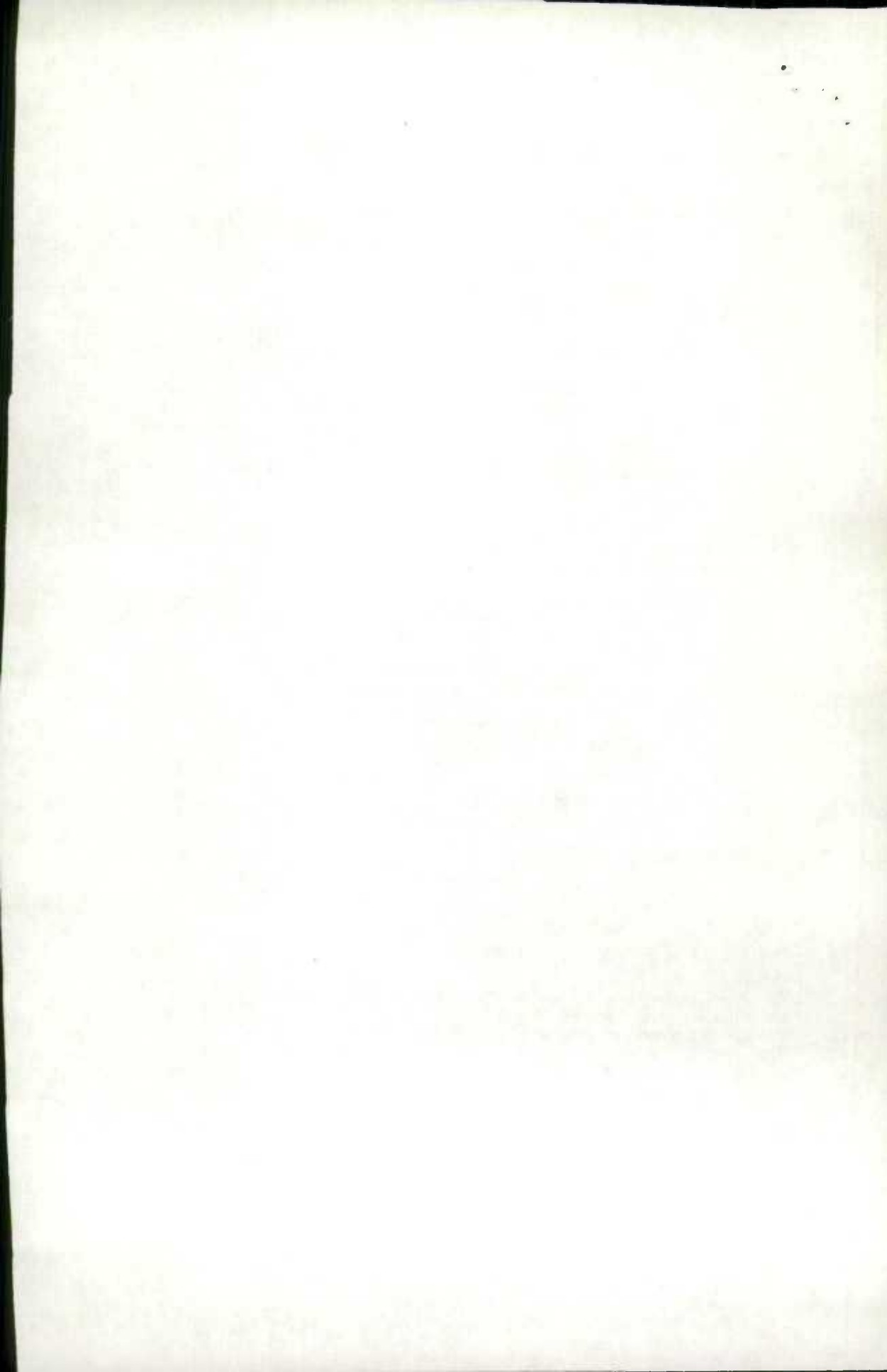
Uniform distribution of a fertilizer is a matter of great importance and especially so when small quantities of concentrated materials are applied. Since a large proportion of the fertilizer is distributed on the land by machines it is necessary that the particles constituting the material flow or drill evenly. In an effort to favour this free-flowing feature some manufacturers are preparing their products in the form of more or less evenly sized granules or pellets. Some investigators claim that granular fertilizers have an additional advantage in that the phosphoric acid and potash remain in a soluble form for a longer period, i.e., they do not become fixed in the soil as rapidly as when the fertilizer is in a dust-like condition. The plants can, therefore, make better use of the fertilizer.

Of late years there has been a closer co-operation between Federal and Provincial Departments of Agriculture in regard to the study of field data and suggestions made in regard to the use of fertilizers. Further, the establishment of fertilizer councils or advisory boards by the provincial departments has tended to consolidate the views and recommendations of those bodies interested in the use and sale of fertilizers. The chief aims of the fertilizer boards are to recommend suitable fertilizers for different crops and soils, to gradually bring about a reduction in the number of brands placed on the market, to eliminate the sale of the lower grade mixtures and to make it less confusing for the farmer to select the fertilizer requirements of any particular crop. The reduction in the number of mixtures manufactured and the raising of the percentages of plant food constituents of fertilizers should eventually result in lower manufacturing costs and in turn lower costs to the farmer.

List of Publications.—The following government publications in connection with fertilizer may be obtained free on application to the Publications Branch, Department of Agriculture, Ottawa, Canada:—

1. The Fertilizers Act (with regulations and amendments).
2. Annual Report on Fertilizer Analyses (small).
3. Manures and Fertilizers (revised edition).
4. Manuring of Market Garden Crops.
5. Seaweed as a Fertilizer.
6. Potash in Agriculture.
7. Peat and Muck.
8. Alkali Soils.
9. The Influence of Grain Growing on the Nitrogen and Organic Matter Content of the Western Prairie Soils of Canada.
10. Western Prairie Soils.
11. Prince Edward Island Soils.

Most of the Provincial Departments of Agriculture issue free publications dealing with the use of fertilizers under the different soil and crop conditions. Applications for these should be addressed to the Provincial Department of Agriculture for each province. Some of the larger fertilizer manufacturers maintain educational bureaus which frequently publish very valuable information which may also be obtained free on application.



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