CANADA—DEPARTMENT OF TRADE AND COMMERCE
DOMINION BUREAU OF STATISTICS
MINING, METALLURGICAL AND CHEMICAL BRANCH

THE FERTILIZER TRADE IN CANADA

July 1, 1930—June 30, 1931

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DOMINION BUREAU OF STATISTICS
R. H. COATS, B.A., F.S.S. (Hon.), F.R.S.C., Dominion Statistician

THE FERTILIZER TRADE IN CANADA, JULY 1, 1930—JUNE 30, 1931

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

An annual survey of the sales of fertilizer in Canada has been made by the Mining, Metallurgical and Chemical Branch of the Dominion Bureau of Statistics in co-operation with the Fertilizer Division of the Department of Agriculture for the past three years and the following statistics represent the sales and related data for the fertilizer year ending June 30, 1931. The object of such a survey is to assist the fertilizer manufacturer and importer to properly gauge the annual consumption or to note any changes that may appear in the various types of fertilizers used. The publication of such data also renders much aid to those who are making a scientific study of fertilizer economics.

In addition to data on sales, the reporting companies were asked to report the quantity of fertilizer manufactured, imported and exported during the period. Schedules were received from firms, including those manufacturing in Canada, those importing and those manufacturing outside of Canada but selling in this country. Every care was taken to prevent duplication by asking each firm manufacturing fertilizer materials to omit reporting the amounts sold to companies which were using these materials in the production of mixed fertilizers. An analysis of the returns shows that 40 companies manufactured fertilizer or fertilizer materials in Canada and 11 companies operated plants in other countries. Canadian-made fertilizers or fertilizer materials were sold for use in Canada by 68 companies, 18 plants were exporting Canadian made products, 52 companies sold fertilizers which were produced in countries other than Canada, and 2 firms exported fertilizers which were made in other countries.

Fertilizer Marketed.—The compilation shows that during the year under review 362,848 short tons of fertilizers were marketed as against 449,607 tons during the previous year. Of this total 284,217 tons were sold in Canada and 78,631 tons were sold for export, the greater part of the exported material being cyanamid. The Canadian sales included 146,404 tons of mixed fertilizers and 137,813 tons of fertilizer materials. Of the fertilizer materials sold in Canada, superphosphate constituted 83,747 tons or 61 per cent; sulphate of ammonia 11,587 tons or 8·5 per cent; nitrate of soda 10,577 tons or 7·5 per cent and muriate of potash 11,205 tons or 8 per cent. Cyanamid, nitrochalk, calcium nitrate, bone phosphate, ground phosphate rock, basic slag, bone meal, bone flour, sulphate of potash, tankage, sheep manure, dried blood, whale products and fish meal were also marketed.

Provincial Review.—The provincial summary, Table No. 1, indicates a gain over 1930 in consumption of fertilizer materials in Prince Edward Island, Nova Scotia and the Prairie Provinces and a gain in the consumption of mixed

fertilizers in Nova Scotia, New Brunswick, Quebec and the Prairie Provinces. Sales of fertilizer materials were greater in Quebec than in any other province. Ontario led in sales of mixed fertilizers, although consumption in the province was 16·3 per cent lower than for the corresponding period in 1930.

Mixed Fertilizers.—Mixed fertilizers are those containing at least two and usually three or more of the standard materials, e.g., sulphate of ammonia, superphosphate and muriate of potash. As carriers of nitrogen, there are the following standard materials:—sulphate of ammonia, nitrate of soda, nitrate of lime, nitrochalk, blood, tankage, fish meal—and any of these, with certain limitations, may be used in the mixtures. Cyanamid is used mainly as a conditioner in mixtures but supplies nitrogen also. Superphosphate is usually the carrier of phosphoric acid although bone meal, tankage and fish meal are used to a small extent. The potash is usually supplied in one of four forms—muriate, sulphate, carbonate and kainite or manure salts, the muriate constituting the main source. In common practice the addition of filler to mixed fertilizer is required in order to raise the weight to the ton basis when the formula demands it. The filler is usually a spent moulding sand, or ground limestone, both of which are inert, but aid the physical condition of the fertilizer so that it may be applied evenly to the soil.

Table No. 4 shows the sales, by provinces, of the various mixed fertilizers and Table No. 5 is a calculation showing the quantity of nitrogen, phosphoric acid and potash contained in the mixed fertilizers sold in the various provinces.

Imports.—A table is given showing the imports of fertilizers into Canada for the year ending June 30, 1931. Returns, under the Fertilizers Act show that the total number of importations during the year was 1,434 as compared with 4,317 the previous year, which indicates that imports have declined substantially.

A further analysis shows that the principal decline was in the imports of mixed fertilizers from the United States.

Table I.—Comparative Table showing Total Sales of Fertilizer Materials and Mixed Fertilizers for the Fertilizer Years ending June 30, 1930 and 1931

(Short tons)

Province	Fertilizer materials			Mixed fertilizers		
	1930	1931	Percentage Increase+ Decrease−	1930	1931	Percentage Increase+ Decrease−
	tons	tons	p.c.	tons	tons	p.c.
Prince Edward Island	22,205	28,494	+28·3	11,429	7,823	−31·6
Nova Scotia	20,809	22,235	+6·9	14,367	17,542	+22·1
New Brunswick	34,331	18,134	−47·2	22,863	24,811	+8·5
Quebec	39,370	37,057	−5·9	16,174	20,686	+27·9
Ontario	41,205	24,189	−41·3	83,622	70,009	−16·3
Manitoba, Saskatchewan and Alberta	296	1,737	+486·8	29	39	+34·5
British Columbia	8,041	5,967	−25·8	6,466	5,494	−15·0
Canada	166,257	137,813	−17·1	154,950	146,404	−5·5
Sold for export	124,946	70,889	−43·3	3,454	7,742	+124·1
Grand Total	**291,203**	**208,702**	**−28·3**	**158,404**	**154,146**	**−2·7**

Table 2.—Production, in Canada, Imports and Exports of Fertilizers, as reported by the Manufacturers and Importers, during the Year July 1, 1930 to June 30, 1931

(Short tons)

Item	Production	Imports	Exports
Mixed fertilizer	117,106	19,169	7,742
Sulphate of ammonia	20,986	5,593	7,094
Cyanamid	49,045	670	61,588
Calcium nitrate	–	113	5
Nitrate of soda	–	12,502	166
Superphosphate	29,532	107,005	899
Basic slag	–	10,628	–
Nitrochalk	–	840	–
Bone phosphate	–	1,000	–
Phosphate rock	–	19,306	–
Bone meal	612	316	–
Bone flour	–	15	–
Muriate of potash	–	23,342	41
Sulphate of potash	–	2,204	–
Potash manure salts and kainite	–	2,609	–
Tankage	2,625	10,113	908
Sheep manure	–	422	–
Dried blood	311	–	159
Whale products	70	–	–
Fish meal	250	48	–
Other materials	1,090	1,026	29
Total	**221,627**	**216,921**	**78,631**

Table 3.—Sales of Fertilizers, except for Manufacturing Purposes, during the Year July 1, 1930 to June 30, 1931

(Short tons)

Fertilizers	Sold in Canada							Total sold in Canada	Sold for export from Canada	Grand Total
	P.E.I.	N.S.	N.B.	Que.	Ont.	Man., Sask., and Alta.	B.C.			
	tons	tons	tons	tons	tons	tons	tons	tons	tons	tons
Nitrate of soda	694	4,709	2,066	894	1,823	10	381	10,577	166	10,743
Sulphate of ammonia	4,035	739	1,972	2,543	2,018	15	265	11,587	7,094	18,681
Cyanamid	–	79	–	–	141	–	4	224	61,588	61,812
Nitrochalk	–	6	–	47	3	–	62	118	–	118
Calcium nitrate	–	–	–	56	2	–	54	112	5	117
Bone phosphate	–	–	–	–	–	–	4	4	–	4
Superphosphate	16,453	9,423	9,996	25,776	18,416	905	2,778	83,747	899	84,646
Ground phosphate rock	–	–	–	–	60	–	18	78	–	78
Basic slag	–	5,541	579	5,309	–	–	150	11,579	–	11,579
Bone meal	–	287	31	38	366	76	293	1,091	–	1,091
Bone flour	–	–	–	105	1	–	–	106	–	106
Muriate of potash	4,440	1,068	3,173	2,006	141	–	377	11,205	41	11,246
Sulphate of potash	–	6	–	144	76	–	83	309	–	309
Tankage	–	7	306	25	587	162	99	1,186	908	2,094
Sheep manure	–	–	–	44	313	–	125	482	–	482
Dried blood	–	–	–	–	136	27	131	294	159	453
Whale products	–	–	–	–	–	–	178	178	–	178
Fish meal	–	–	2	–	–	–	605	607	–	607
Other fertilizer materials	2,872	370	0	70	106	542	360	4,329	29	4,358
Total fertilizer	**28,494**	**22,235**	**18,134**	**37,057**	**24,189**	**1,737**	**5,967**	**137,813**	**70,889**	**208,702**
Total Mixed Fertilizers	7,823	17,542	24,811	20,080	70,009	39	5,494	146,404	7,742	154,146
Grand Total, 1931	**36,317**	**39,777**	**42,945**	**57,743**	**94,198**	**1,776**	**11,461**	**284,217**	**78,631**	**362,848**
Grand Total, 1930	**33,634**	**35,176**	**57,194**	**55,544**	**124,827**	**325**	**14,507**	**321,207**	**128,400**	**449,607**

Table 4.—Mixed Fertilizers sold during the Year July 1, 1930 to June 30, 1931

(Short tons)

Formulae			P.E.I.	N.S.	N.B.	Que.	Ont.	Man., Sask., and Alta.	B.C.	Total sold in Canada	Sold for export	Grand Total
N	P_2O_5	K_2O	tons	tons	tons	tons	tons	tons	tons	tons	tons	tons
0	2	10	–	–	–	–	–	–	128	128	–	128
0	10	4	–	–	–	81	338	–	–	419	–	419
0	10	6	–	–	–	–	–	–	140	140	–	140
0	10	10	–	–	–	215	109	–	–	324	–	324
0	12	4	–	–	–	–	400	–	–	400	–	400
0	12	5	–	–	–	11	5,311	–	–	5,322	–	5,322
0	12	6	–	–	–	41	320	–	–	361	–	361
0	12	10	–	–	–	–	180	–	58	238	–	238
0	12	12	–	–	–	14	120	–	–	134	–	134
0	12	15	–	–	–	–	1,384	–	–	1,384	–	1,384
0	14	5	–	–	–	–	–	–	146	146	–	146
0	14	6	–	–	–	–	165	–	–	165	–	165
0	14	16	–	–	–	6	381	–	–	387	–	387
2	6	10	–	–	–	108	–	–	–	108	–	108
2	8	4	–	1,626	268	815	5,667	–	–	8,376	46	8,422
2	8	5	–	–	–	–	1,226	–	–	1,226	–	1,226
2	8	6	–	–	–	75	257	–	–	332	–	332
2	8	7	–	–	–	150	–	–	–	150	–	150
2	8	10	–	817	–	1,477	2,067	–	–	4,361	–	4,361
2	10	2	4	1,949	899	138	304	–	73	3,367	–	3,367
2	12	2	–	–	–	31	740	–	–	771	–	771
2	12	6	–	–	75	3,895	13,407	–	–	17,377	–	17,377
2	16	6	–	–	–	1	2,723	–	–	2,724	–	2,724
3	6	10	–	368	3,669	37	12	–	–	4,086	220	4,306
3	8	4	–	119	–	–	12,930	–	–	13,049	–	13,049
3	8	5	–	–	–	–	347	–	–	347	–	347
3	8	6	–	–	–	10	198	–	–	208	–	208
3	8	7	537	–	–	–	–	–	–	537	–	537
3	8	10	–	–	–	1,685	–	–	–	1,685	–	1,685
3	10	4	–	796	65	80	197	–	–	1,138	–	1,138
3	10	5	–	–	–	6	3,118	–	–	3,124	–	3,124
3	10	6	–	–	–	–	324	–	–	324	–	324
3	10	8	–	–	–	–	–	–	3,321	3,321	–	3,321
3	12	5	–	–	–	–	375	–	–	375	–	375
4	6	10	–	1,277	156	–	15	–	–	1,448	95	1,543
4	7	10	–	–	414	–	–	–	–	414	10	424
4	8	4	–	4,742	60	268	976	–	–	6,046	9	6,055
4	8	6	–	–	150	97	8,873	–	–	9,120	–	9,120
4	8	7	1,785	1,393	2,140	20	–	–	–	5,358	348	5,706
4	8	10	101	–	126	5,720	3,292	6	–	9,245	35	9,280
4	8	12	776	–	115	–	–	–	29	920	–	920
4	8	13	4,316	1,834	8,276	–	–	–	–	14,426	–	14,426
4	9	4	–	–	–	–	226	–	–	226	–	226
4	10	4	–	–	–	–	22	–	358	380	–	380
4	12	4	–	15	15	59	926	–	–	1,015	–	1,015
4	12	6	–	–	–	12	155	–	–	167	–	167
5	7	10	–	–	947	933	–	–	–	1,880	1,150	3,030
5	8	7	–	–	1,452	968	1,578	–	–	3,998	938	4,936
5	8	12	–	–	1,766	–	–	–	–	1,766	990	2,756
5	9	8	72	346	2,800	–	–	–	–	3,218	1,786	5,004
5	9	12	–	–	–	–	–	–	–	–	190	190
5	10	5	24	1,305	52	1	332	–	–	1,774	–	1,774
5	12	5	–	–	–	–	230	–	–	230	–	230
6	8	10	–	3	1,233	3,408	397	–	–	5,041	702	5,743
6	8	12	–	–	66	–	–	–	–	66	1,222	1,288
6	10	4	–	–	–	–	2	–	156	158	–	158
6	10	10	–	–	–	–	–	–	425	425	–	425
9	5	7	–	768	1	–	–	–	–	769	–	769
15	30	15	–	100	–	20	7	–	–	127	–	127
Other mixed fertilizers			208	24	46	304	378	33	660	1,653	1	1,654
Total			7,823	17,542	24,811	29,686	70,009	39	5,494	146,404	7,742	154,146

Table 5.—Nitrogen, Phosphoric Acid and Potash contained in Mixed Fertilizers—Sold in Canada, during the Years ending June 30, 1930 and 1931

Province	1930				1931			
	Total Tonnage	Nitrogen	Phosphoric Acid	Potash	Total Tonnage	Nitrogen	Phosphoric Acid	Potash
	tons	lb.	lb.	lb.	tons	lb.	lb.	lb.
Prince Edward Island	11,429	900,960	1,851,140	2,520,780	7,615	600,220	1,220,900	1,667,760
Nova Scotia	13,576	1,049,040	2,252,140	1,423,560	17,542	1,337,640	2,916,440	2,164,920
New Brunswick	22,388	1,641,980	3,854,820	3,757,120	24,765	2,049,240	3,885,960	4,982,660
Quebec	15,974	1,059,640	2,796,220	2,603,440	20,686	1,496,700	3,552,220	3,523,420
Ontario	83,573	4,386,000	16,684,400	9,984,640	70,009	3,556,880	13,811,960	8,100,880
Manitoba, Saskatchewan and Alberta	29	2,560	6,160	2,760	39	6,260	7,320	1,200
British Columbia	6,466	400,640	1,282,960	999,460	5,091	324,380	1,011,100	771,880
Sold for export from Canada	3,454	317,960	594,480	542,240	7,742	791,200	1,242,460	1,489,240
Canada	**156,889**	**9,764,780**	**29,322,320**	**21,840,000**	**153,489**	**10,162,520**	**27,758,420**	**22,701,960**
Miscellaneous (no analyses given)	1,515	–	–	–	657	–	–	–

Table 6.—Reporting Companies

Nature of Trade*	Name	Address
	Abol Ltd.	Beltring, Paddock, Kent, England.
m.s.a.; e.	Algoma Steel Corporation, Ltd.	Sault Ste. Marie, Ont.
m.m.f.; i.	American Agricultural Chemical Co.	420 Lexington Ave., New York, U.S.A.; factory at Port Hope, Ont.
m.c.; e.; i.	American Cyanamid Company	535 5th Ave., New York, U.S.A.
	Armour Fertilizer Works	Sandusky, Ohio, U.S.A.
d.; i.	Baisley, W. A., & Company	Winona, Ont.
m.s.a.; e.	B.C. Electric Railway Company	425 Corrall St., Vancouver, B.C.
d.; i.	Burlington Fruit Growers	Burlington, Ont.
	Burlington Rendering Co	Burlington, Vt., U.S.A.
m.o.	Burns, P. and Company	Calgary, Alberta.
m.o.	" "	Edmonton, Alberta.
m.o.	" "	Regina, Sask.
d.	" "	Prince Albert, Sask.
m.o.	" "	Winnipeg, Man.
m.m.f.; o.; i.; e.	" "	Vancouver, B.C.
d.; i.	Canada & Dominion Sugar Co., Ltd.	Chatham, Ont.
d.; i.	Canadian Canners, Limited	Simcoe, Ont.
m.m.f.; p.; i.; e.	Canadian Fertilizer Co., Ltd.	Chatham, Ont.
m.m.f.i.; e.	Canadian Industries, Limited	Halifax, N.S.
m.m.f.; s.p.; e.; i.	" "	Beloeil, P.Q.
" "	" "	Hamilton, Ont.
" "	" "	New Westminster, B.C.
m.o.; e.	Canadian Packing Co., Ltd	Peterboro, Ont.
	Carrier, Lyman	Granger, Indiana, U.S.A.
d.; i.; e.	Chemicals, Limited	384 St. Paul St. W., Montreal, P.Q.
i.; d.	Clarkson Dixie Fruit Growers Assoc.	Clarkson, Ont.
m.m.f.; i.; e.	Colonial Fertilizer Works	Windsor, N.S.
m.a.p.; s.p.; e.	Consolidated Mining & Smelting Co. of Canada, Ltd.	Trail, B.C.
d. ; i.	Co-Opérative Fédérée de Québec	130 St. Paul St. E., Montreal, P.Q.
d.	Dingman, M. E.	Leamington, Ont.
m.s.a.; e.	Dominion Steel & Coal Corp., Ltd. (Dominion Iron and Steel Division)	Sydney, N.S.
d.; i.	Durham Fruit Growers Co-Operative, Ltd.	Canton, Ont.
d.; i.	Empire Fertilizer, Ltd.	2945 Dundas St. W., Toronto, Ont.
m.o.	Fearman Co., Ltd.	226 Rebecca St., Hamilton, Ont.
d.; i.	Fertilizers and Feeds, Ltd.	2980 Dundas St. W., Toronto, Ont.
m.m.f.; i.	Fertilizer Products, Ltd.	285 1st Ave. E., Vancouver, B.C.
d.; i.	Furuya Company, Limited	46 West Hastings St., Vancouver, B.C.
d.; i.	Georgian Bay Fruit Growers, Ltd.	Clarksburg, Ont.
m.m.f.; i.	Globe Fertilizer Co., Ltd.	Vancouver, B.C.
d.; i.	Gregory, F. R.	Leamington, Ont.
m.m.f.; o.; i.	Gunns, Limited	West Toronto, Ont.
d.; i.	Halliday, George	Sawyerville, P.Q.
m.s.a.; e.	Hamilton By-Product Coke Ovens, Ltd.	Hamilton, Ont.
d.; i.	Hants Wholesalers, Ltd.	Windsor, N.S.
m.o.	Harris Abattoir Co., Limited	Charlottetown, P.E.I.
m.o.	Harris Abattoir (Western), Limited	St. Boniface, Man.
m.o.; i.	Harris, W., Co., Limited	200 Keating St., Toronto, Ont.
d.; i.	Hatfield, Ltd.	Hartland N.B.
	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, P.Q. (factory at Saint John, N.B.)
m.m.f.; i.	Island Fertilizer Co., Limited	Charlottetown, P.E.I.
m.m.f.; i.	Lavigueur, Arthur	5118 Marquette St., Montreal, Que.
m.o.; i.	Maritime Rendering Co., Ltd.	Saint John, N.B.
m.m.f.; i.	Marquis (Estate F. Canac Marquis)	3 rue Courcelette, Quebec, P.Q.
d.; i.	Martin, C. A.	Fergus, Ont., R.R. No. 1.
	Milwaukee Sewerage Commission	Milwaukee, Wis., U.S.A.
m.s.a.; e.	Montreal Coke Manufacturing Co.	P.O. Box 1660, Montreal, P.Q.
d.; i.	New Brunswick Agricultural Societies.	East Centreville, N.B.
d.; i.	Niagara Brand Spray Co., Ltd.	Burlington, Ont.
d.; i.	Niagara Fruit Company, Ltd.	Queenston, Ont.
d.; i.	Niagara Packers, Limited	Grimsby, Ont.
d.; i.	Nova Scotia Fertilizer Co., Limited	Roy Building, Barrington St., Halifax, N.S.
m.m.f.; o.; i.	Ontario Fertilizers, Ltd.	West Toronto, Ont.
m.s.a.; e.	Ottawa Gas Company	Ottawa, Ont.
d.; i.	Paterson, R. Downing	89 Water St., Saint John, N.B.
d.; i.	Patterson, W. J.	Simcoe, Ont.
d.; i.	Phosphates Français, Ltée	37 rue de la Couronne, Quebec, P.Q.
d.; i.	P.E.I. Potato Growers' Assoc., Inc.	Charlottetown, P.E.I.

Table 6.—Reporting Companies—Concluded

Nature of Trade	Name	Address
	Royster Guano, F.S. Co.	Royster Bldg., Norfolk, Va., U.S.A.
m.m.f.	Rupert Marine Products, Ltd.	Box 1606, Prince Rupert, B.C.
d.; i.	St. Catharines Cold Storage & Forwarding Co., Ltd.	Davidson St., St. Catharines, Ont.
d.; i.	Scott & Peden	1601 Stone St., Victoria, B.C.
m.m.f.; i.	Scottish Fertilizers, Ltd.	Welland, Ont.
m.s.a.; e.	Steel Company of Canada, Ltd.	Hamilton, Ont.
m.m.f.; i.	Summers Fertilizer Co., Inc.	St. Stephen, N.B.
m.m.f.; o.; i.	Swift Canadian Co., Ltd.	Union Stockyards, Toronto 9, Ont.
m.m.f.; o.; i.	Stone, Wm., Sons, Limited	Ingersoll, Ont.
d.; i.	Tarr, Ben	Harriston, Ont.
	Tennessee Corporation	61 Broadway, New York, N.Y., U.S.A.
d.; i.	United Farmers Co-Operative Co., Ltd	28 Duke St., Toronto, Ont.
d.; i.	United Fruit Companies of Nova Scotia, Ltd.	Kentville, N.S.
d.; i.	Vaughn, James	Bridgewater, N.S.
d.; i.	Vineland Growers Co-Operative, Ltd.	Vineland Station, Ont.
	Virginia-Carolina Chemical Corp.	Richmond, Va., U.S.A.
d.; i.	Webb, Edward, & Sons, Ltd.	93 King St. E., Toronto 2, Ont.
m.m.f.; i.	Witts Fertilizer Works	Norwich, Ont.

* m—Manufacturing.
m.a.p.—Manufacturing ammonium phosphate.
m.c.—Manufacturing cyanamid.
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.
d.—Dealer.
e.—Exporter.
i—Importer.

Fertilizer Control.—The sale of fertilizers in Canada is controlled by the Fertilizers Act which is administered by the Dominion Department of Agriculture. The Fertilizers Act was enacted in 1922 and amended in 1928. It comes under the Criminal Code of Canada and is effective all over the Dominion. The principal restrictions under this Act are the registration of every fertilizer in the market, the meeting of the guaranteed analysis as registered by the vendor, the use of ingredients that are not injurious to soils and crops and the selling under standardized nomenclature. Fertilizers which do not meet these requirements are subject to confiscation under a special seizure clause and the vendor is liable to prosecution in the courts.

Thus is the Canadian farmer protected against possible fraud on the part of the vendor. Since the vendor's guarantee of nitrogen, phosphoric acid and potash must be given on the container of the fertilizer or on a tag attached thereto, the farmer is in a position to note whether the guarantee thus given meets that under which he purchases the fertilizer. Then it is his right under the Act to have the fertilizer sampled and analysed by an inspector.

Every brand of fertilizer sold in Canada is sampled by inspectors one or more times each year and the results of analyses of these official samples are compared with the guaranteed analyses for purposes of enforcement of the Act. In addition, the results are published in the annual report of analyses issued by the Department of Agriculture.

This annual report is in popular use by the farmers throughout Canada as a guide when buying. During the year ending June, 1931, the fertilizer inspectors found in the market 484 different brands and some 1,050 official samples were drawn and analysed. In recent years there has been a notable decrease in the recorded violations of the provisions of the Act. There are now few failures to meet guaranteed analyses either directly or by compensation.

This improved situation is credited largely to the whole-hearted support given by Canadian fertilizer manufacturers and importers in conforming with the provisions of the Act and thus assisting the fertilizer inspectors in its enforcement.

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. Fertilizers and Their Use in Canada.
5. Manuring of Market Garden Crops.
6. Lime in Agriculture.
7. Seaweed as a Fertilizer.
8. Potash in Agriculture.
9. Composts as a Source of Humus and Nitrogen.
10. Fertilizers for the Potato Crop.
11. Fertilizers for the Lawn.
12. Artificial Manure.
13. Peat and Muck.
14. Alkali Soils.
15. The Influence of Grain Growing on the Nitrogen and Organic Matter Content of the Western Prairie Soils of Canada.
16. Western Prairie Soils.
17. Prince Edward Island Soils.

In addition to the above, most of the Provincial Departments of Agriculture have issued 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.