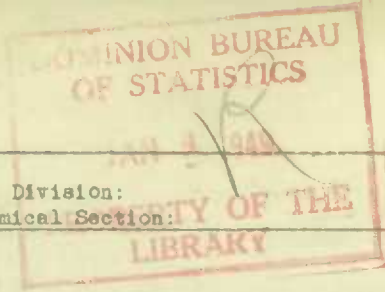


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ANNUAL INDUSTRY REPORT

CHEMICALS AND ALLIED PRODUCTS GROUP

THE FERTILIZER MANUFACTURING INDUSTRY, 1947

Production by factories in Canada which were engaged principally in the manufacture of fertilizers was valued at \$58,784,345 in 1947 compared with \$49,992,443 in 1946. In addition, there was a production of 234,191 tons of cyanamid, ammonium sulphate, mixed fertilizers and fish fertilizers valued at \$8,023,646 in 1947, and 245,572 tons at \$8,276,389 in 1946, by establishments which were classified to other industrial groups. The quantity of fish used as fertilizer in 1947 amounted to 34,986 barrels valued at \$47,180.

Thirty-one plants were occupied chiefly in the manufacture of fertilizers in 1947, there being 12 in Ontario, 5 in British Columbia, 5 in Quebec, 3 in New Brunswick, 3 in Nova Scotia, 2 in Prince Edward Island and 1 in Alberta. The average number of workers increased from 2,805 in 1946 to 3,358 in 1947, with a corresponding increase in the total salaries and wages from \$5,929,796 to \$7,483,119.

Total production of mixed fertilizers in 1947 from all industries amounted to 673,782 tons worth \$21,997,590 at factory prices and included 669,433 tons at \$21,792,944 made by plants in the fertilizer manufacturing industry and 4,349 tons at \$204,636 made in the meat packing and the adhesives industries. In 1946 the corresponding total was 597,855 tons at \$17,956,075 and in 1945 it was 539,462 tons at \$16,256,250.

Superphosphate was manufactured in 1947 by Canadian Industries Limited at McMasterville, Quebec; Hamilton, Ontario; and New Westminster, British Columbia. Ammonium nitrate (fertilizer grade) was manufactured in 1947 by the North American Cyanamid Limited, at Welland, Ontario, and by the Consolidated Mining and Smelting Company of Canada, Limited, at Trail, British Columbia and at Calgary, Alberta. The output figures are not published separately since there was only one producer in the case of the former and only two in the case of the latter.

Ammonium sulphate was made by the Consolidated Mining and Smelting Company of Canada, Limited, at Trail, British Columbia, and also by the following coke manufacturers: Algoma Steel Corporation Limited, at Sault Ste. Marie, Ontario; Dominion Steel and Coal Corporation, Ltd., at Sydney, Nova Scotia; Hamilton By-Product Coke Ovens, Limited, at Hamilton, Ontario; Montreal Coke and Manufacturing Company, at Montreal, Quebec, and The Steel Company of Canada, Limited, at Hamilton, Ontario. Production during the calendar year 1947 amounted to 196,825 tons; imports totalled 124 tons, and exports amounted to 158,975 tons. Ammonium phosphate was made only by the Consolidated Mining and Smelting Company of Canada, Limited, at Trail, British Columbia.

A special survey of the fertilizer trade in Canada during the fertilizer year ended June 30, 1948 has been completed by the Dominion Bureau of Statistics, and the results have been published in a special report. Summary figures on the sales of fertilizers have been reprinted in Tables 11-13 of this bulletin. A total of 672,171 tons of mixtures and materials were sold in Canada during the year ended June 30, 1948, compared with 660,721 tons during the preceding twelve-month period.

Table 1 - PRINCIPAL STATISTICS OF THE FERTILIZER MANUFACTURING INDUSTRY, 1937-1947

Year	Number of plants	Average number of employees	Salaries and wages	Cost of fuel and electricity at works	Cost of materials at works	Gross selling value of products at works
1937	20	1,023	1,447,625	506,965	6,693,841	10,266,953
1938	26	1,232	1,560,873	654,359	8,344,853	12,941,300
1939	27	1,211	1,819,612	706,003	8,140,498	13,165,164
1940	26	1,392	2,142,890	760,783	9,525,143	15,103,819
1941	27	1,748	2,865,837	1,064,818	9,419,584	15,188,645
1942	26	1,973	3,413,722	1,164,650	13,112,322	21,140,397
1943	26	2,204	4,314,742	1,141,339	19,036,806	27,105,357
1944	26	2,226	4,610,420	1,162,992	17,690,683	31,188,945
1945	26	2,146	4,418,916	1,116,081	18,708,175	34,505,756
1946	29	2,805	5,929,796	3,232,099	22,865,328	49,992,443
1947	31	3,358	7,483,119	2,465,076	26,030,511	58,784,345
Per cent change, 1947 from 1946		+ 19.7	+ 26.2	+ 23.7	+ 13.8	+ 17.4

Note: Profits or losses cannot be calculated from the above figures as data are not available for general expense items, such as interest, rent, depreciation, taxes, insurance, advertising, etc.

Fertilizers

Table 2 - PRINCIPAL STATISTICS, BY PROVINCES, 1946 and 1947

Province	Number of plants	Average number of employees	Salaries and wages	Cost of fuel and electricity at works	Cost of materials at works	Gross selling value of products at works
			\$	\$	\$	\$
<u>1946</u>						
Prince Edward Island ..	2)	135	192,075	12,742	2,228,210	2,975,364
Nova Scotia	3)					
New Brunswick	3	181	339,362	21,489	2,612,061	3,484,020
Quebec	5	282	518,359	33,458	3,581,077	5,031,505
Ontario	10	863	1,697,974	769,126	7,676,615	13,405,580
Alberta	1)					
British Columbia	5)	1,344	3,182,026	2,395,284	6,767,365	25,095,974
CANADA	29	2,805	5,929,796	3,232,099	22,865,328	49,992,443
<u>1947</u>						
Prince Edward Island ..	2)	133	207,235	17,892	2,591,325	3,378,946
Nova Scotia	3)					
New Brunswick	3	176	360,637	47,484	3,417,745	4,743,604
Quebec	5	293	568,767	38,393	4,530,651	6,724,777
Ontario	12	927	1,942,734	689,724	8,487,987	16,012,677
Alberta	1)					
British Columbia	5)	1,829	4,403,746	1,671,583	7,002,803	27,924,341
CANADA	31	3,358	7,483,119	2,465,076	26,030,511	58,784,345

Table 3 - EMPLOYEES, SALARIES AND WAGES, BY PROVINCES, 1946 and 1947

Province	Average Number of Employees				Total	Salaries	Wages	TOTAL SALARIES and WAGES
	On Salaries		On Wages					
	Male	Female	Male	Female				
<u>1946</u>								
New Brunswick	16	7	158	...	181	74,698	264,664	339,362
Quebec	41	11	230	...	282	135,432	382,927	518,359
Ontario	164	51	646	2	863	518,492	1,179,482	1,697,974
British Columbia .	117	24	839	3	983	417,212	2,024,086	2,441,298
Other provinces ..	77	28	380	11	496	247,689	685,114	932,803
CANADA	415	121	2,253	16	2,805	1,393,523	4,536,273	5,929,796
<u>1947</u>								
New Brunswick	14	6	156	...	176	52,903	307,734	360,637
Quebec	38	11	244	...	293	151,944	416,823	568,767
Ontario	190	50	686	1	927	617,385	1,325,349	1,942,734
British Columbia .	144	26	1,294	...	1,464	693,137	2,889,702	3,582,839
Other provinces ..	87	25	376	10	498	309,230	718,912	1,028,142
CANADA	473	118	2,756	11	3,358	1,824,599	5,658,520	7,483,119

Table 4 - WAGE-EARNERS, BY MONTHS, 1946 and 1947 (On the last work day of each month)

Month	1946			1947		
	Male	Female	Total	Male	Female	Total
January	2,211	27	2,238	2,721	13	2,734
February	2,448	17	2,465	2,779	13	2,792
March	2,626	15	2,641	2,939	13	2,952
April	2,640	16	2,656	3,070	12	3,082
May	2,377	17	2,394	3,014	12	3,026
June	2,076	15	2,091	2,725	12	2,737
July	2,002	14	2,016	2,701	11	2,712
August	2,067	15	2,082	2,624	9	2,633
September	2,081	14	2,095	2,601	10	2,611
October	2,114	15	2,129	2,632	10	2,642
November	2,182	14	2,196	2,610	10	2,620
December	2,208	16	2,224	2,625	10	2,635
AVERAGE	2,253	16	2,269	2,756	11	2,767

Table 5 - FUEL AND ELECTRICITY USED, 1946 and 1947

Kind	Unit of measure	1 9 4 6		1 9 4 7	
		Quantity	Cost at works	Quantity	Cost at works
Bituminous coal - Canadian	ton	38,371	286,784	57,669	358,169
Imported	ton	17,310	124,620	33,600	260,876
Anthracite coal	ton	179	2,475	3,212	27,174
Lignite coal	ton	963	5,539	...	...
Coke	ton	64	850	...	...
Gasoline	Imp.gal.	123,475	29,136	138,887	33,910
Kerosene	Imp.gal.	1,601	428	1,606	480
Fuel oil	Imp.gal.	4,719,176	309,410	820,947	82,173
Gas (natural)	M cu.ft.	2,425	1,850	...	...
Other fuel .....	...	...	106	...	50
Electricity purchased	K.W.H.	827,051,661	2,470,901	1,078,697,947	1,702,244
TOTAL .....	...	...	3,232,099	...	2,465,076

Table 6 - POWER EQUIPMENT, 1946 and 1947

	Ordinarily in Use		In Reserve or Idle	
	Number of units	Total rated horse power	Number of units	Total rated horse power
<u>1 9 4 6</u>				
Steam engines	10	3,905	...	...
Steam turbines	11	1,690	5	205
Gasoline, gas and oil engines	6	190	2	52
Electric motors operated by purchased power	2,291	85,618	408	8,226
TOTAL	2,318	91,403	415	8,483
Stationary power boilers	5	7,015	...	...
Motor-generator sets	33	1,366 k.v.a.	2	75 k.v.a.
<u>1 9 4 7</u>				
Steam engines	14	4,502	1	75
Steam turbines	11	1,690	5	205
Gasoline, gas and oil engines	13	455	2	52
Hydraulic turbines or water wheels	10	103,780	...	...
Electric motors operated by purchased power	2,747	87,479	660	9,216
TOTAL	2,795	197,906	668	9,548
Stationary power boilers	13	4,418	1	1,073
Motor-generator sets	36	1,414	5	120

Table 7 - MATERIALS USED IN THE FERTILIZER MANUFACTURING INDUSTRY, 1946 and 1947

Material	1 9 4 6		1 9 4 7	
	Quantity	Cost at works	Quantity	Cost at works
	Short tons	\$	Short tons	\$
Ammonia liquor	5,164	272,955	2,881	319,650
Ammonium nitrate	20,651	1,115,478	24,091	1,440,269
Ammonium phosphate	7,115	384,904	14,308	462,757
Ammonium sulphate (sulphate of ammonia)	32,883	1,109,860	30,375	1,063,422
Basic slag	7,785	25,419	5,973	25,216
Bone char	103	2,295	34	801
Bone meal and bone flour	520	19,586	445	17,515
Borax	472	18,721	3,318	125,832
Calcium cyanamide (cyanamid)	9,121	358,739	9,693	394,593
Coke (except for fuel)	106,087	1,312,851	97,424	1,300,452
Diatomaceous earth	8,195	308,446	7,498	295,773
Dried blood and blood meal	559	26,937	512	20,804
Lime or land plaster	26,245	63,451	40,395	109,461
Magnesium oxide	724	23,667	520	16,185
Magnesium sulphate	57	1,689	14	747
Phosphate rock	372,914	4,525,698	398,685	4,947,377

Table 7 - MATERIALS USED IN THE FERTILIZER MANUFACTURING INDUSTRY, 1946 and 1947 (concluded)

Material	1946		1947	
	Quantity	Cost at works	Quantity	Cost at works
	Short tons	\$	Short tons	\$
Potassium chloride (muriate of potash).				
50%	8,554	299,435	7,723	270,194
60%	66,562	2,448,963	77,515	3,037,398
Potassium nitrate (nitrate of potash)..	...	...	8	1,034
Potassium sulphate (sulphate of potash)	3,356	140,797	3,302	134,111
Potassium magnesium sulphate (sulphate of potash magnesia).....	3,141	98,727	3,482	99,725
Potash manure salts and kainite	4,720	84,988	4,746	82,201
Silica sand	44,070	101,050	69,669	138,622
Sodium nitrate (nitrate of soda)	248	12,295	198	10,630
Sulphuric acid, 66° Bé	481,106	2,471,392	107,187	1,432,659
Superphosphate: 16-18%	16,711	237,138	24,426	471,846
20%	237,638	4,147,483	241,010	4,593,843
38-45%	1,233	58,822	1,725	54,745
Tankage	2,528	75,823	3,396	77,522
All other materials .....	...	866,751	...	2,333,865
Containers and shipping materials .....	...	2,250,918	...	2,751,342
TOTAL .....	...	22,865,328	...	26,030,511

Table 8 - PRODUCTS OF THE FERTILIZER MANUFACTURING INDUSTRY, CALENDAR YEARS, 1946 and 1947

NOTE: Figures in this table are for the Fertilizer Manufacturing Industry, which includes only the concerns which were engaged chiefly in the manufacture of fertilizers. Some fertilizers were made also in the other industries; for the total output of mixed fertilizers in Canada, see Table 9.

Product	1946		1947	
	Quantity	Selling value at works	Quantity	Selling value at works
	tons	\$	tons	\$
Mixed fertilizers	593,953	17,767,769	669,433	21,792,944
Superphosphate, ammonium nitrate (fertilizer grade), ammonium phosphate and ammonium sulphate (completely manufactured) (x)	801,498	30,068,707	848,201	34,895,676
Superphosphate, milled and screened only: 16-18%	350	7,680	450	9,200
20%	8,922	210,311	7,642	204,727
Ammonium sulphate, milled and screened only	1,656	67,429	1,302	52,373
Muriate of potash, milled and screened only: 50%	930	42,502	254	11,936
60%	2,235	111,674	1,605	97,304
Nitrate of soda, milled and screened only	189	10,346	38	1,957
All other products .....	...	1,706,025	...	1,718,228
TOTAL .....	...	49,992,443	...	58,784,345

(x) Ammonium nitrate (fertilizer grade) is manufactured in Canada by two companies only; superphosphate, ammonium phosphate and ammonium sulphate are manufactured by only one company in this industry, hence the production figures are not shown separately.

Fertilizers

Table 9 - TOTAL PRODUCTION OF MIXED FERTILIZERS IN CANADA, FROM ALL INDUSTRIAL GROUPS, CALENDAR YEARS 1937 - 1947

NOTE: Figures in this table represent the total Canadian production of mixed fertilizers, regardless of the industries in which produced.

Year	Quantity tons	Selling value at works \$	Year	Quantity tons	Selling value at works \$
1937	243,802	6,130,523	1943	507,816	15,039,197
1938	288,634	7,426,494	1944	542,520	15,585,502
1939	279,425	7,223,177	1945	539,462	16,256,250
1940	302,842	8,154,305	1946	597,855	17,956,075
1941	297,539	8,617,040	1947	673,782	21,997,580
1942	406,141	12,480,300			

Table 10 - PRODUCTION IN CANADA, IMPORTS AND EXPORTS OF AMMONIUM SULPHATE, 1937-1947

Year	Production	Imports (tons)	Exports
1937	87,621	3,230	56,485
1938	119,520	5,911	77,191
1939	129,865	3,217	109,260
1940	115,679	355	72,485
1941	98,662	57	59,480
1942	116,796	5,045	79,236
1943	196,404	39	141,080
1944	209,578	104	167,496
1945	221,499	105	181,189
1946	197,103	63	155,446
1947	196,825	124	158,975

Table 11 - SALES IN CANADA OF FERTILIZER MATERIALS, EXCEPT FOR MANUFACTURING PURPOSES, YEAR ENDED JUNE 30, 1948.

Kind	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba, Saskatchewan and Alberta	British Columbia	TOTAL SOLD IN CANADA
(Short tons)								
<u>Fertilizer Materials</u>								
Nitrate of soda .....	...	...	...	8	489	...	10	507
Sulphate of ammonia .	725	425	282	269	185	841	2,331	5,058
Cyanamide.....	67	288	79	19	1,534	...	159	2,146
Ammonium nitrate (nitraprills)	1,066	1,374	641	555	1,537	1	1,322	6,496
Ammonium phosphate -								
11-48-0 .....	...	...	...	...	2,786	44,934	962	48,682
16-20-0 .....	...	...	...	...	334	4,409	3,405	8,148
Superphosphate	3,314	2,118	1,679	7,196	8,512	19	1,547	24,385
Bone meal or bone flour .....	...	7	4	48	137	84	460	740
Muriate of potash -								
50% .....	...	...	14	...	546	...	...	560
60%	1,023	102	456	88	1,776	...	486	3,931
Sulphate of potash ..	...	2	1	5	24	1	115	148
Tankage .....	...	...	...	...	...	309	200	509
Sheep manure .....	...	76	...	325	787	30	191	1,409
Dried blood .....	...	...	...	...	11	21	58	90
Other fertilizer materials	17	39	3	229	3,900	49	253	4,490
TOTAL 1948	6,212	4,431	3,159	8,742	22,558	50,698	11,499	107,299
TOTAL 1947	6,510	4,690	3,288	9,873	20,399	40,833	10,277	95,870

Table 12 - MIXED FERTILIZERS SOLD IN CANADA AND FOR EXPORT DURING THE YEAR ENDED JUNE 30, 1948

Formulae				Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba, Saskatchewan and Alberta	British Columbia	TOTAL SOLD IN CANADA	Exported from Canada
	N	P ₂ O ₅	K ₂ O	(Short tons)								
0 12 20	...	...	...	...	...	...	...	2,119	...	1,057	3,176	...
0 14 7	...	...	...	...	...	...	3,701	18,298	...	...	21,999	...
2 8 16	...	...	...	...	...	...	512	2,013	...	...	2,525	...
2 10 8	...	...	...	...	...	...	3,555	39,794	...	...	43,349	...
2 12 6	1,424	11,205	9,519	45,453	86,780	8	...	...	...	...	154,389	607
2 12 10	...	...	...	7,024	27,752	...	...	...	...	22	34,798	...
2 16 6	...	...	...	3,322	7,845	43	...	...	...	1,436	12,646	21
3 10 8	...	...	...	28	11,509	...	...	...	...	...	11,637	...
3 15 6	3,474	1,823	64	...	...	...	...	...	...	...	5,361	22
3 18 0	...	...	...	519	88	...	...	...	...	...	607	...
4 8 10	27,592	11,023	54,413	47,633	34,389	20	...	...	...	...	174,970	2,630
4 12 6	304	7,212	2,416	1,826	4,800	47	...	...	...	...	16,605	906
4 12 10	...	...	...	...	3,664	...	...	...	...	...	3,664	...
4 24 12	...	...	...	...	1,485	...	...	...	...	...	1,485	...
5 7 10	...	...	...	...	...	...	...	...	...	...	...	10,826
5 8 7	...	...	...	3,617	2	...	...	...	...	...	3,619	249
5 10 10	22,544	1,784	13,286	1,567	12	...	...	...	...	...	39,193	3,976
6 9 9	...	...	...	...	...	...	...	...	...	...	...	6,310
6 9 12	...	...	...	...	...	...	...	...	...	...	...	12,161
6 30 15	...	...	...	...	...	...	...	...	...	1,355	1,355	...
8 10 5	...	...	...	...	...	...	...	...	2	1,287	1,289	...
9 5 7	...	3,752	216	1,641	411	...	...	...	...	...	6,020	79
Other mixtures	19	28	43	1,347	10,987	393	...	...	...	13,368	26,185	6,844
TOTAL 1948	55,357	36,827	79,957	121,745	251,948	513	...	...	...	18,525	564,872	44,631
TOTAL 1947	45,280	40,329	73,157	135,350	252,137	656	...	...	...	17,942	564,851	43,683

Table 13 - TOTAL SALES IN CANADA OF FERTILIZER MATERIALS AND MIXED FERTILIZERS FOR THE YEARS ENDED JUNE 30, 1947 and 1948

Province	Year Ended June 30	
	1 9 4 7	1 9 4 8
	(Tons of 2,000 pounds)	
<u>Fertilizer Materials -</u>		
Prince Edward Island	6,510	6,212
Nova Scotia	4,690	4,431
New Brunswick	3,288	3,159
Quebec	9,873	8,742
Ontario	20,399	22,558
Manitoba, Saskatchewan and Alberta	40,833	50,698
British Columbia	10,277	11,499
CANADA	95,870	107,299
<u>Mixed Fertilizers -</u>		
Prince Edward Island	45,280	55,357
Nova Scotia	40,329	36,827
New Brunswick	73,157	79,957
Quebec	135,350	121,745
Ontario	252,137	251,948
Manitoba, Saskatchewan and Alberta	656	513
British Columbia	17,942	18,525
CANADA	564,851	564,872

LIST OF FIRMS IN THE FERTILIZER MANUFACTURING INDUSTRY, 1947

Name	Location of Plant
Prince Edward Island -	
The Island Fertilizer Co. Ltd.	Charlottetown
The Summerside Fertilizer Co. Ltd.	Summerside
Nova Scotia -	
Canadian Industries Limited (Fertilizer Division)	Pier 9, Halifax
Canada Packers Limited	Port Williams
Colonial Fertilizer Co. Ltd.	Nesbit St., Windsor
New Brunswick -	
Canada Packers Limited (Fertilizer Division)	Bayside Drive, East Saint John
International Fertilizers Limited	East Saint John
Summers Fertilizer Co. Inc.	Prince William St., St. Stephen
Quebec -	
Agricultural Chemicals Ltd.	Chambly
Canada Packers Limited	6000 St. Patrick St., Montreal
Canadian Industries Limited (Fertilizer Division)	1490 Marlborough St., Montreal
Canadian Industries Limited (Fertilizer Division)	McMasterville
International Fertilizers Limited	Wolfe's Cove, Quebec
Ontario -	
Agricultural Chemicals Ltd.	Marsh St., Port Hope
Canada Packers Limited	2200 St. Clair Ave. W., Toronto
Canadian Industries Limited (Fertilizer Division)	King St. E., Chatham
Canadian Industries Limited (Fertilizer Division)	Burlington & Ottawa Sts., Hamilton
Misner Seeds & Fertilizer	Port Dover
Na-Churs Plant Food Co. (Canada) Ltd.	2 Langarth St. W., London
North American Cyanamid Limited, Welland Works,	Gerner Rd., Niagara Falls
Read Brothers Fertilizers, Limited	Union St., Elmira
Canada Packers Limited	Welland
Stone, William, Sons Ltd.	Ingersoll
United Farmers Co-Operative Co. Limited	4004 Dundas St. W., Toronto
Witts Fertilizer Works Ltd.	Norwich
Alberta -	
Consolidated Mining and Smelting Co. of Canada Limited	Calgary
British Columbia -	
Buckerfield's Limited	P.O. Box 219, Vancouver
Canadian Industries Limited (Fertilizer Division)	foot of 16th St., New Westminster
Consolidated Mining and Smelting Co. of Canada Limited	Trail
Globe Fertilizer Co. Ltd.	foot Crompton Road, Vancouver
Old Gardener Products Ltd.	1156 E. 15th Ave., Vancouver

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