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T. N. Jones



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CANADA
DEPARTMENT OF TRADE AND COMMERCE
DOMINION BUREAU OF STATISTICS
CENSUS OF INDUSTRY
MINING, METALLURGICAL & CHEMICAL BRANCH

THE
FERTILIZER MANUFACTURING INDUSTRY
IN
CANADA
1944



OTTAWA
1946

Price 15 cents

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RECEIVED MAIL ROOM

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Dominion Statistician:	Herbert Marshall, B.A., F.S.S.
Chief - Mining, Metallurgical and Chemical Branch:	W. H. Losee, B.Sc.
Statistician - Metal and Chemical Products:	H. McLeod, B.Sc.

ANNUAL INDUSTRY REPORTCHEMICALS AND ALLIED PRODUCTS GROUPTHE FERTILIZER MANUFACTURING INDUSTRY, 1944

Production by factories in Canada which were engaged principally in the manufacture of fertilizers was valued at \$31,188,945 in 1944 compared with \$27,105,357 in 1943. In addition, there was a production of 211,002 tons of cyanamide, ammonium sulphate, mixed fertilizers and fish fertilizers valued at \$6,951,145 in 1944 and 199,895 tons at \$6,738,725 in 1943 by establishments which were classified to other industrial groups. The quantity of fish used as fertilizer in 1944 amounted to 34,695 barrels valued at \$33,869.

During 1944 a total of 26 plants in Canada were occupied chiefly in making fertilizers; 9 of these were located in Ontario, 5 in British Columbia, 5 in Quebec, 3 in New Brunswick, 3 in Nova Scotia and 1 in Prince Edward Island. The number of workers advanced to 2,226 from 2,204 and salaries and wages increased to \$4,610,420 from \$4,314,742.

Total production of mixed fertilizers in 1944 from all industries amounted to 542,520 tons worth \$15,585,502 at factory prices and included 537,590 tons at \$15,401,911 made by plants in the fertilizer manufacturing industry and 4,930 tons at \$183,591 made in the meat packing and glue factories. In 1943 the corresponding total was 507,816 tons at \$15,039,197 and in 1942 it was 406,141 tons at \$12,480,300.

Superphosphate was manufactured in 1944 by Canadian Industries Limited at McMasterville, Que., Hamilton, Ont. and New Westminster, B.C., and by Consolidated Mining and Smelting Company of Canada Ltd., at Trail, B.C. The output figures are not published separately since there were only two producers.

Ammonium sulphate was made by the Consolidated Mining and Smelting Company of Canada, Limited, at Trail, B.C., and also by the following coke manufacturers: Algoma Steel Corporation Limited, at Sault Ste. Marie, Ont.; Dominion Steel and Coal Corporation, Ltd., at Sydney, N.S.; Hamilton By-Product Coke Ovens, Limited, at Hamilton, Ont.; Montreal Coke and Manufacturing Company, at Montreal, Que.; and The Steel Company of Canada, Limited, at Hamilton, Ont. Production during the calendar year 1944 amounted to 209,578 tons; imports totalled 105 tons, and exports amounted to 167,497 tons. Ammonium phosphate was made only by the Consolidated Mining and Smelting Company of Canada, Limited, at Trail, B.C.

A special survey of the fertilizer trade in Canada during the fertilizer year ended June 30, 1945 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 12-14 of this bulletin. A total of 575,066 tons of mixtures and materials were sold in Canada during the year ended June 30, 1945, compared with 535,108 tons during the preceding twelve-month period.

Fertilizers

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Table 1 - PRINCIPAL STATISTICS OF THE FERTILIZER MANUFACTURING INDUSTRY, 1934-1944

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
			\$	\$	\$	\$
1934	20	776	946,178	348,716	3,647,660	5,467,154
1935	19	996	1,239,337	344,131	4,362,594	6,075,616
1936	20	930	1,196,286	443,627	4,996,084	7,075,831
1937	20	1,023	1,447,625	506,965	6,693,841	10,266,953
1938	26	1,232	1,560,873	654,359	8,344,353	12,841,300
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	2,365,837	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	19,036,306	27,105,357
1944	26	2,226	4,610,420	1,162,992	17,690,683	31,188,945
Per cent change 1944 from 1943		+1.0	+6.8	+1.9	-7.1	+11.4

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.

Table 2 - PRINCIPAL STATISTICS, BY PROVINCES, 1943 and 1944

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>1943</u>						
Prince Edward Island	1)	128	179,115	9,484	1,699,405	2,353,109
Nova Scotia ..	3)					
New Brunswick	3	211	291,140	13,739	2,282,806	3,033,322
Quebec	5	354	563,911	20,312	3,706,692	5,205,336
Ontario	9	422	757,883	44,164	4,394,970	6,081,925
British Columbia	5	1,089	2,522,693	1,053,640	6,952,933	10,431,665
CANADA	26	2,204	4,314,742	1,141,339	19,036,306	27,105,357
<u>1944</u>						
Prince Edward Island	1)	148	211,047	11,218	1,853,700	2,514,463
Nova Scotia ..	3)					
New Brunswick	3	199	317,933	10,834	2,305,203	3,043,747
Quebec	5	334	696,677	30,330	4,299,753	5,880,179
Ontario	9	449	812,168	45,606	4,976,057	6,750,046
British Columbia	5	1,096	2,572,595	1,065,004	4,250,970	12,995,510
CANADA	26	2,226	4,610,420	1,162,992	17,690,683	31,188,945

Table 3 - EMPLOYEES, SALARIES AND WAGES, BY PROVINCES, 1943 and 1944

Province	Average Number of Employees				Total	Salaries	Wages	TOTAL SALARIES and WAGES
	On Salaries		On Wages					
	Male	Female	Male	Female				
<u>1943</u>								
New Brunswick ..	15	8	187	1	211	44,703	246,437	291,140
Quebec	58	31	264	1	354	209,254	354,657	563,911
Ontario	84	50	287	1	422	323,849	434,034	757,883
British Columbia	103	33	353	100	1,089	357,791	2,164,902	2,522,693
Other provinces.	21	7	100	...	128	59,667	119,448	179,115
CANADA	231	129	1,691	103	2,204	995,264	3,519,478	4,514,742
<u>1944</u>								
New Brunswick ..	16	10	171	2	199	57,840	360,093	317,933
Quebec	52	31	250	1	334	215,280	481,397	696,677
Ontario	84	62	303	...	449	329,054	483,114	812,168
British Columbia	106	34	828	128	1,096	421,348	2,151,247	2,572,595
Other provinces.	24	10	114	...	148	79,892	131,155	211,047
CANADA	282	147	1,666	131	2,223	1,103,414	3,507,006	4,610,420

Table 4 - WAGE-EARNERS, BY MONTHS, 1943 and 1944 (On the last work-day of each month)

Month	1943			1944		
	Male	Female	Total	Male	Female	Total
January	1,821	63	1,884	1,799	106	1,905
February	1,919	68	1,987	2,005	108	2,113
March	2,211	83	2,294	2,015	108	2,123
April	2,201	98	2,299	1,984	118	2,102
May	1,872	89	1,961	1,703	148	1,851
June	1,411	92	1,503	1,504	145	1,649
July	1,291	107	1,398	1,445	150	1,595
August	1,399	120	1,519	1,501	145	1,646
September	1,380	138	1,518	1,413	140	1,558
October	1,384	138	1,522	1,470	135	1,605
November	1,659	114	1,773	1,567	137	1,704
December	1,738	110	1,848	1,448	133	1,581
AVERAGE	1,691	103	1,794	1,666	131	1,797

Table 5 - HOURS WORKED PER WEEK BY WAGE-EARNERS, 1943 and 1944 (In one week of month of highest employment; overtime included)

Hours worked per week	Number of Wage-Earners			
	1943		1944	
	Male	Female	Male	Female
30 hours or less	350	...	287	6
31-43 hours	151	2	338	36
44 hours	24	3	56	4
45-47 hours	89	3	102	4
48 hours	1,227	61	576	52
49-50 hours	50	...	104	12
51-54 hours	133	...	250	2
55 hours	68	...	41	...
56-64 hours	288	...	428	34
65 hours and over	264	...	181	...
TOTAL	2,644	69	2,363	150
Total wages paid during week ..\$	87,840	1,986	76,176	3,230

Table 6 - FUEL AND ELECTRICITY USED, 1943 and 1944

Kind	Unit of measure	1943		1944	
		Quantity	Cost at works	Quantity	Cost at works
Anthracite coal	ton	806	4,390	125	1,769
Bituminous coal--Canadian	ton	11,054	73,299	12,071	69,470
Imported	ton	1,187	9,855	1,172	9,679
Coke	ton	29	396	67	797
Gasoline	Imp.gal.	17,629	4,254	26,442	6,531
Kerosene	Imp.gal.	28,057	8,930	28,746	9,163
Fuel oil	Imp.gal.	1,805	194	2,500	278
Other fuel .....	...	...	106	...	82
Electricity purchased ...	K.W.H.	633,903,692	1,039,915	611,431,176	1,065,223
TOTAL .....	...	...	1,141,339	...	1,162,992

Table 7 - POWER EQUIPMENT, 1943 and 1944

	Ordinarily in use		In Reserve or Idle	
	Number of units	Total rated horse power	Number of units	Total rated horse power
<u>1943</u>				
Steam engines and turbines ...	2	55	...	...
Gasoline, gas and oil engines.	4	275	1	20
Electric motors operated by purchased power	1,438	32,969	32	394
TOTAL	1,444	33,299	33	414
Stationary boilers .....	...	...	...	...
<u>1944</u>				
Steam engines and turbines ...	2	55	...	...
Gasoline, gas and oil engines.	2	95	...	...
Electric motors operated by purchased power	1,402	30,228	195	3,417
TOTAL	1,406	30,378	195	3,417
Stationary power boilers	1	15	...	...
Motor-Generator sets	1	7	...	...

Table 8 - MATERIALS USED IN THE FERTILIZER MANUFACTURING INDUSTRY, 1943 and 1944

Material	1943		1944	
	Quantity	Cost at works	Quantity	Cost at works
	Short tons	\$	Short tons	\$
Ammonia, anhydrous	291	37,850	1,005	114,562
Ammonia liquor	708	58,007	526	45,847
Ammonium nitrate	11,221	631,327	17,714	928,904
Ammonium phosphate	3,890	196,833	1,946	90,873
Ammonium sulphate (sulphate of ammonia)	35,523	1,186,559	38,578	1,508,989
Bone char	139	5,501	57	1,319
Bone meal and bone flour	252	10,936	278	15,126
Calcium cyanamide (cyanamid)	9,498	368,245	10,424	405,959
Dried blood	572	29,994	949	44,025
Fish meal and scrap	20	1,020	124	7,181
Lime or land plaster	8,604	32,112	14,043	51,211
Magnesium oxide	1,325	9,733	231	10,773
Kainite and potash manure salts ..	23,753	447,619	17,735	415,722
Phosphate rock	226,350	2,528,062	337,632	3,817,626

Table 8 - MATERIALS USED IN THE FERTILIZER MANUFACTURING INDUSTRY, 1943 and 1944(Cont'd)

Material	1943		1944	
	Quantity	Cost at works	Quantity	Cost at works
Potassium chloride (muriate of potash)				
50%	4,874	174,352	4,620	164,327
60%	46,626	1,794,703	48,243	1,916,459
Potassium nitrate (nitrate of potash)	...	...	16	1,198
Potassium sulphate (sulphate of potash)	5,480	248,702	6,853	291,246
Sodium nitrate (nitrate of soda).....	1,370	57,597	499	14,901
Sulphuric acid, 66° Be	330,940	3,191,125	418,838	2,111,037
Superphosphate—16%—20%	204,591	3,500,584	226,369	3,633,380
38%—45%	9,749	345,443	4,815	172,279
Ammoniated .....	...	...	2,988	69,676
Tankage	2,863	60,920	1,537	45,896
Whale meat, bone and blood	90	4,070	18	681
All other materials .....	...	2,602,434	...	421,420
Containers and shipping materials ...	...	1,513,093	...	1,592,088
TOTAL .....	...	19,036,806	...	17,690,683

Table 9 - PRODUCTS OF THE FERTILIZER MANUFACTURING INDUSTRY, CALENDAR YEARS 1943 and 1944

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 11.

Product	1943		1944	
	Quantity	Selling value at works	Quantity	Selling value at works
Mixed fertilizers	tons	\$	tons	\$
Superphosphate, ammonium phosphate and ammonium sulphate (completely manufactured) (x)	503,565	14,826,634	537,590	15,401,911
Superphosphate, milled and screened only -- 16%—18%	372,342	11,410,416	501,115	14,950,698
20%	90	1,890	150	3,150
38%—45%	21,605	482,792	20,143	459,406
Ammonium sulphate, milled and screened only .....	...	...	...	...
Muriate of potash, milled and screened only -- 50%	1,678	66,607	552	24,988
60%	813	37,205	1,201	55,531
Nitrate of soda, milled and screened only	1,826	91,895	2,082	106,320
All other products	107	1,864	27	1,404
TOTAL .....	...	186,054	...	185,537
TOTAL .....	...	27,105,357	...	21,183,945

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

Table 10 - TOTAL PRODUCTION OF MIXED FERTILIZERS IN CANADA, FROM ALL INDUSTRIAL GROUPS, CALENDAR YEARS 1924-1944

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 \$
1924	38,126	1,539,003	1935	145,844	3,442,017
1925	47,076	1,663,129	1936	175,703	4,222,587
1926	56,888	2,043,093	1937	243,802	6,130,523
1927	72,112	2,552,421	1938	288,634	7,426,494
1928	76,180	3,017,648	1939	279,425	7,223,177
1929	75,164	3,098,567	1940	302,842	8,154,305
1930	78,158	2,548,226	1941	297,539	8,617,040
1931	113,632	3,247,694	1942	406,141	12,480,300
1932	95,857	2,447,407	1943	507,816	15,039,197
1933	106,421	2,777,702	1944	542,520	15,585,502
1934	138,750	3,517,193			

Table 11 - PRODUCTION IN CANADA, IMPORTS AND EXPORTS OF AMMONIUM SULPHATE, 1935-1944

Year	Production	Imports (tons)	Exports
1935	67,362	4,280	45,055
1936	98,483	5,729	83,835
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

Table 12 - SALES OF FERTILIZERS, EXCEPT FOR MANUFACTURING PURPOSES, YEAR ENDED JUNE 30, 1945 (Short tons)

Kind	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba, Saskat- chewan and Alberta	British Columbia	Total sold in Canada	Exported from Canada	Fertilizers
<u>Fertilizer Materials</u>										
Nitrate of soda .....	...	25	...	10	1,049	3	12	1,099	300	
Sulphate of ammonia ...	1,242	708	741	258	512	336	2,218	5,815	150,412	
Cyanamide	38	392	128	22	1,108	...	195	1,883	(x)	
Ammonium nitrate	361	1,333	866	265	434	6	342	3,607	188,752	
Ammonium phosphate -										
11-48-0 .....	...	...	...	...	2,351	24,211	709	27,271	74,113	
16-20-0 .....	...	...	...	...	211	1,076	3,604	4,891	71,148	
2-20-0 .....	...	...	...	...	...	...	20	20	...	
Superphosphate (f)	5,013	2,546	4,032	9,952	11,277	17	873	33,710	2,694	
Ammoniated superphos- phate - 2-19-0 .....	...	...	...	...	...	2,063	199	2,262	...	
- 3-18-0	65	12	8	499	35	...	...	619	...	
Bone meal or bone flour	...	...	5	...	97	167	560	829	...	
Muriate of potash -										
50%	30	...	740	121	349	...	...	1,240	5	
60%	1,286	141	588	37	1,585	3	343	3,985	...	
Sulphate of potash- magnesia .....	...	...	11	...	43	...	28	82	...	
Sulphate of potash ....	...	8	5	3	9	17	55	97	...	
Tankage .....	...	...	...	...	274	396	518	1,188	901	
Sheep manure .....	...	56	1	219	572	25	161	1,034	...	
Dried blood .....	...	...	...	...	5	11	131	147	...	
Whale products .....	...	...	...	...	...	...	...	...	...
Fish meal .....	...	...	...	...	...	...	208	208	...	
Other fertilizer materials .....	...	...	3	...	1,536	4	457	2,000	...	
TOTAL	8,035	5,221	7,128	11,386	21,247	28,335	10,633	91,985	488,325 *	
TOTAL MIXED FERTILIZERS	40,019	36,608	66,690	134,758	190,279	363	14,364	483,081	44,231	
GRAND TOTAL 1945 ...	48,054	41,829	73,818	146,144	211,526	28,698	24,997	575,066	532,556	
GRAND TOTAL 1944 ...	42,850	41,456	72,416	148,165	193,018	14,149	23,054	535,108	(x)	

(x) Not available for publication.

(f) Includes 18%, 19%, 20%, 47% and 48% superphosphate.

* Does not include cyanamide.

Fertilizers

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Table 13 - TOTAL SALES IN CANADA OF FERTILIZER MATERIALS AND MIXED FERTILIZERS FOR THE YEARS ENDED JUNE 30, 1944 and 1945

Province	Year Ended June 30	
	1944	1945
	(Tons of 2,000 pounds)	
Fertilizer Materials -		
Prince Edward Island	11,351	8,035
Nova Scotia	5,618	5,221
New Brunswick	9,240	7,128
Quebec	13,861	11,386
Ontario	17,638	21,247
Manitoba, Saskatchewan and Alberta	12,942	28,335
British Columbia	8,583	10,633
CANADA	79,233	91,985
Mixed Fertilizers -		
Prince Edward Island	31,499	40,019
Nova Scotia	35,338	36,608
New Brunswick	63,176	66,690
Quebec	134,304	134,758
Ontario	175,380	190,279
Manitoba, Saskatchewan and Alberta	1,207	363
British Columbia	14,471	14,364
CANADA	455,875	483,081

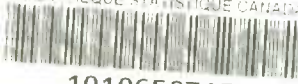
Table 14 - FERTILIZER SALES IN CANADA, 1936-1945

Year ended June 30	Sales in Canada			Nitrogen content (short tons)	Phosphoric acid content	Potash content
	Mixtures	Materials	TOTAL			
1936	137,361	98,479	235,840	8,248	28,390	14,374
1937	191,283	106,993	298,276	10,258	37,029	19,442
1938	216,602	106,774	323,376	10,756	39,506	21,921
1939	232,926	101,077	334,003	10,954	40,175	23,339
1940	261,083	85,638	346,721	11,464	42,501	25,243
1941	249,667	74,534	324,201	10,427	39,243	23,902
1942	347,411	72,138	419,547	14,353	51,010	30,374
1943	417,699	72,162	489,861	14,741	59,077	36,089
1944	455,875	79,233	535,108	19,060	64,136	30,953
1945	483,081	91,985	575,066	21,959	76,697	42,665

LIST OF FIRMS IN THE FERTILIZER INDUSTRY, 1944

Name	Location of Plant
<u>Prince Edward Island -</u>	
The Island Fertilizer Co. Ltd.	Charlottetown
<u>Nova Scotia -</u>	
Canadian Industries Limited (Fertilizer Div.)	Pier 9, Halifax
Chase, George, Limited	Port Williams
Colonial Fertilizer Co. Ltd.	Nesbit St., Windsor
<u>New Brunswick -</u>	
Canada Packers Limited (Fertilizer Div.)	Bayside Drive, East Saint John
International Fertilizers Limited	East Saint John
Summers Fertilizer Co. Inc.	Prince William St., St. Stephen
<u>Quebec -</u>	
Agricultural Chemicals Ltd.	Chambly
Canada Packers Limited	6000 St. Patrick St., Montreal
Canadian Industries Limited (Fertilizer Div.)	1490 Marlborough St., Montreal
Canadian Industries Limited (Fertilizer Div.)	McMasterville
International Fertilizers Limited	National Harbours Board, Shed #29, Quebec
<u>Ontario -</u>	
Agricultural Chemicals Ltd.	Marsh St., Port Hope
Canada Packers Limited	2300 St. Clair Ave. W., Toronto
Canadian Industries Limited (Fertilizer Div.)	Kind St. E., Chatham
Canadian Industries Limited (Fertilizer Div.)	Burlington & Ottawa Sts., Hamilton
Misner, J. P.	Port Dover
Canada Packers Limited	Welland
Stone, William, Sons Ltd. and National Fertilizers Ltd.	Pemberton St., Ingersoll
United Farmers Co-Operative Co. Limited	4004 Dundas St. W., Toronto
Witts Fertilizer Works Ltd.	Norwich
<u>British Columbia -</u>	
Buckerfield's Limited	P.O. Box 219, Vancouver
Canadian Industries Limited (Fertilizer Div.)	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.	319 W. Pender St., Vancouver

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