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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
1942



OTTAWA
1944

Price 15 cents

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ANNUAL INDUSTRY REPORTCHEMICALS AND ALLIED PRODUCTS GROUPTHE FERTILIZER MANUFACTURING INDUSTRY, 1942

Production by factories in Canada which were engaged principally in the manufacture of fertilizers was valued at \$21,140,397 in 1942 compared with \$15,188,645 in 1941. In addition, there was a production of 212,760 tons of cyanamide, ammonium sulphate, mixed fertilizers and fish fertilizers valued at \$6,246,443 in 1942 and 214,781 tons at \$5,072,215 in 1941 by establishments which were classified to other industrial groups.

During 1942 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. Capital employed in these works decreased to \$19,722,341 from \$20,110,569 in 1941; the number of workers advanced to 1,973 from 1,748 and salaries and wages advanced to \$3,413,722 from \$2,865,837.

Total production of mixed fertilizers in 1942 from all industries amounted to 406,141 tons worth \$12,480,300 at factory prices and included 402,520 tons at \$12,317,340 made by plants in the fertilizer manufacturing industry and 3,621 tons at \$162,960 made in the meat-packing and glue factories. In 1941 the corresponding total was 297,539 tons at \$8,617,040 and in 1940 it was 302,842 tons at \$8,154,305.

Superphosphate was manufactured in 1942 by Canadian Industries Limited at McKasterville, 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, Ontario. Production during the calendar year 1942 amounted to 116,796 tons; imports totalled 5,044 tons, and exports amounted to 79,236 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, 1943, 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 and 13 of this bulletin. A total of 489,769 tons of mixtures and materials were sold in Canada during the year ended June 30, 1943, compared with 427,143 tons during the preceding twelve-month period.

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Table 1 - PRINCIPAL STATISTICS OF THE FERTILIZER MANUFACTURING INDUSTRY, 1932-1942.

Year	No. of plants	Capital employed	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
		\$		\$	\$	\$	\$
1932	19	17,083,478	748	1,097,812	49,010	2,616,333	4,006,187
1933	20	15,918,787	667	776,647	322,849	2,796,726	4,286,051
1934	20	15,452,733	776	946,178	348,716	3,647,660	5,467,154
1935	19	15,646,828	996	1,239,337	344,131	4,362,594	6,075,616
1936	20	14,800,141	930	1,196,286	443,627	4,996,084	7,075,831
1937	20	16,689,720	1,023	1,447,625	506,965	6,693,841	10,266,953
1938	26	17,155,945	1,232	1,560,873	654,359	8,344,853	12,841,300
1939	27	17,561,474	1,211	1,819,612	706,003	8,140,498	13,165,164
1940	26	19,050,457	1,392	2,142,890	760,783	9,525,143	15,103,819
1941	27	20,110,569	1,748	2,865,837	1,064,318	9,419,584	15,188,645
1942	26	19,722,341	1,973	3,413,722	1,164,650	13,112,322	21,140,397
Per cent change - 1942 from 1941 .....	..	- 1.9	+ 12.9	+ 19.1	+ 9.4	+ 39.2	+ 39.2

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, 1941 and 1942

Province	No. of plants	Capital employed	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>1941</u>							
New Brunswick	3	1,950,499	145	161,542	15,363	1,380,507	1,988,865
Quebec	5	3,240,527	195	325,421	17,551	1,957,149	2,553,307
Ontario	10	4,409,135	371	554,173	34,377	2,599,338	3,865,791
British Columbia .	5	9,118,535	896	1,674,326	989,623	2,325,259	5,243,755
Prince Edward Island ...	1)						
Nova Scotia .	3)	1,391,873	141	150,375	7,704	1,157,331	1,536,927
CANADA	27	20,110,569	1,748	2,865,837	1,064,818	9,419,584	15,188,645
<u>1942</u>							
New Brunswick	3	2,175,810	176	214,012	16,317	1,834,125	2,600,702
Quebec	5	3,021,232	244	407,197	19,656	2,555,855	3,593,285
Ontario	9	4,263,754	409	698,057	39,534	4,053,067	5,955,571
British Columbia .	5	3,295,983	976	1,892,893	1,079,536	2,979,848	6,563,001
Prince Edward Island ...	1)						
Nova Scotia .	3)	1,965,562	168	201,563	9,607	1,689,427	2,427,838
CANADA	26	19,722,341	1,973	3,413,722	1,164,650	13,112,322	21,140,397

Table 3 - CAPITAL EMPLOYED, BY PROVINCES, 1941 and 1942 (On the last day of the year)

Province	Present value of land, buildings, machinery and equipment	Value of Inventories		Operating capital (cash, bills and accounts receivable, etc.)	TOTAL CAPITAL EMPLOYED
		Raw materials and other supplies on hand, and stocks in process	Finished products on hand		
<u>1941</u>					
New Brunswick ...	314,826	509,378	87,120	1,039,175	1,950,499
Quebec	1,178,624	1,227,910	68,191	765,302	3,240,527
Ontario	1,309,665	1,392,454	477,686	1,229,330	4,409,135
British Columbia	8,392,369	164,031	21,759	540,376	9,118,535
Other provinces .	352,581	476,029	63,803	499,460	1,391,873
CANADA ...	11,548,065	3,769,802	718,559	4,074,143	20,110,569
<u>1942</u>					
New Brunswick ...	292,378	813,393	597,983	472,056	2,175,810
Quebec	1,167,152	1,118,041	341,225	394,814	3,021,232
Ontario	1,378,497	1,627,346	587,684	670,227	4,263,754
British Columbia	6,395,074	744,312	612,125	544,472	8,295,983
Other provinces .	356,303	691,099	367,614	550,546	1,965,562
CANADA ...	9,589,404	4,994,191	2,506,631	2,632,115	19,722,341

Table 4 - EMPLOYEES, SALARIES AND WAGES, BY PROVINCES, 1941 and 1942

Province	Average number of employees				Total	Salaries	Wages	TOTAL SALARIES and WAGES
	On salaries		On wages					
	Male	Female	Male	Female				
<u>1941</u>								
New Brunswick ...	17	4	124	...	145	43,220	118,322	161,542
Quebec	61	15	119	...	195	170,522	154,899	325,421
Ontario	96	37	237	1	371	286,753	267,420	554,173
British Columbia	73	9	807	7	896	214,993	1,459,333	1,674,326
Other provinces .	22	7	112	...	141	64,252	86,123	150,375
CANADA	269	72	1,399	8	1,748	779,740	2,086,097	2,865,837
<u>1942</u>								
New Brunswick ...	22	8	146	...	176	47,621	166,391	214,012
Quebec	58	24	162	...	244	194,907	212,290	407,197
Ontario	90	52	265	2	409	321,215	376,842	698,057
British Columbia	63	23	889	1	976	244,386	1,648,507	1,892,893
Other provinces .	28	11	129	...	168	75,283	126,280	201,563
CANADA	261	118	1,591	3	1,973	883,412	2,530,310	3,413,722

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Table 5 - WAGE-EARNERS, BY MONTHS, 1941 and 1942 (On the last work-day of each month)

Month	1941			1942		
	Male	Female	Total	Male	Female	TOTAL
January	1,502	9	1,511	1,306	2	1,308
February	1,340	6	1,346	1,451	4	1,455
March	1,448	8	1,456	1,844	5	1,849
April	2,160	6	2,166	1,827	5	1,832
May	1,620	8	1,628	1,886	3	1,889
June	1,230	6	1,236	1,445	3	1,448
July	1,246	6	1,252	1,529	3	1,532
August	1,294	6	1,300	1,456	3	1,459
September	1,245	6	1,251	1,461	2	1,463
October	1,237	6	1,243	1,470	2	1,472
November	1,239	6	1,245	1,634	2	1,636
December	1,217	6	1,223	1,785	2	1,787
AVERAGE	1,399	8	1,407	1,591	3	1,594

Table 6 - Hours worked Per Week by Wage-earners, 1941 and 1942 (In one week of month of highest employment, overtime included)

Hours worked per week	Number of Wage-earners			
	1941		1942	
	Male	Female	Male	Female
50 hours or less	323	6	214	1
31-43 hours	94	2	70	3
44 hours	12	..	1,077	..
45-47 hours	18	..	71	..
48 hours	966	..	194	..
49-50 hours	191	..	41	..
51-54 hours	162	..	126	..
55 hours	39	..	55	..
56-64 hours	358	..	264	..
65 hours and over	336	..	437	..
TOTAL	2,499	8	2,549	4
Total wages paid during week	\$ 64,249	234	78,247	41

Table 7 - FUEL AND ELECTRICITY USED, 1941 and 1942

Kind	Unit of measure	1941		1942	
		Quantity	Cost at works	Quantity	Cost at works
			\$		\$
Anthracite coal	ton	1,270	5,597	1,230	6,675
Bituminous coal - Canadian	ton	6,268	31,038	7,010	36,374
Imported	ton	1,036	7,384	1,074	8,554
Coke	ton	63	657	14	161
Gasoline	Imp. gal.	39,494	9,973	42,712	12,496
Fuel oil	Imp. gal.	7,314	879	2,870	301
Other fuel .....	..	..	133	..	259
Electricity purchased	K.W.H.	627,837,390	1,009,157	669,755,247	1,099,870
TOTAL	1,064,818	..	1,164,650

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Table 8 - POWER EQUIPMENT, 1941 and 1942

	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 1</u>				
Steam engines and turbines	1	25	...	...
Gasoline, gas and oil engines .	2	95	1	20
Total primary equipment ..	3	120	1	20
Electric motors operated by purchased power	1,589	52,240	173	3,247
TOTAL	1,592	52,360	174	3,267
Stationary boilers	1	15	...	...
<u>1 9 4 2</u>				
Steam engines and turbines	2	55	...	...
Gasoline, gas and oil engines .	3	180	1	20
Total primary equipment ..	5	235	1	20
Electric motors operated by purchased power	1,552	37,937	175	3,195
TOTAL	1,557	38,172	176	3,215
Stationary boilers	2	16	...	...

Table 9 - MATERIALS USED IN THE FERTILIZER MANUFACTURING INDUSTRY, 1941 and 1942

Material	1 9 4 1		1 9 4 2	
	Quantity	Cost at works	Quantity	Cost at works
	Short tons	\$	Short tons	\$
Ammonium phosphate	3,122	190,100	3,358	179,240
Ammonium sulphate (sulphate of ammonia)	29,488	969,856	38,590	1,237,326
Bone char	643	23,992	251	10,453
Bone meal and bone flour	673	22,345	542	19,743
Calcium cyanamide (cyanamid)	4,082	132,298	6,584	264,245
Calcium nitrate and nitrochalk	89	2,631	...	...
Dried blood	907	45,021	846	41,757
Fish meal and scrap	141	7,784	840	10,720
Lime or land plaster	7,541	38,448	5,417	17,619
Kainite and potash manure salts	3,280	59,232	30,182	587,489
Phosphate rock	156,038	1,573,165	207,842	2,253,517
Potassium chloride (muriate of potash)-				
50%	11,360	358,747	3,519	121,762
60%	31,455	1,182,036	38,129	1,564,962
Potassium nitrate (nitrate of potash)	4	566	90	876
Potassium sulphate (sulphate of potash)	2,988	134,839	4,525	196,754
Sodium nitrate (nitrate of soda)	9,131	282,001	7,590	283,700
Sulphuric acid, 66° Be	189,034	1,675,133	256,203	2,178,155
Superphosphate, 16 to 20%	142,878	1,693,354	175,310	2,632,765
Superphosphate, 38% - 45%	542	26,320	2,911	115,525
Tankage	2,852	71,969	2,138	75,143
Whale meat, bone and blood	126	4,860	91	3,835
All other materials .....	...	314,347	...	381,645
Containers and shipping materials	610,540	...	935,091
TOTAL	9,419,584	...	13,112,322

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Table 10 - PRODUCTS OF THE FERTILIZER MANUFACTURING INDUSTRY, CALENDAR YEARS 1941 and 1942

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	1941		1942	
	Quantity	Selling value at works	Quantity	Selling value at works
	tons	\$	tons	\$
Mixed fertilizers	291,635	8,383,862	402,520	12,317,340
Superphosphate, ammonium phosphate and ammonium sulphate (completely manufactured) (1)	226,100	5,667,644	258,766	6,971,096
Superphosphate, milled and screened only	1,060	22,832	295	6,200
16%-18% ..	34,225	680,488	35,701	790,424
20%	43	817	26	1,159
38%-45% ..	1,928	72,372	2,085	84,823
Ammonium sulphate, milled and screened only	4,272	186,473	4,741	233,277
Muriate of potash, milled and screened only	681	28,971	843	36,030
Nitrate of soda, milled and screened only .....	...	145,186	...	700,048
All other products .....	...	15,188,645	...	21,140,397
TOTAL .....	...	15,188,645	...	21,140,397

(1) 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 11 - TOTAL PRODUCTION OF MIXED FERTILIZERS IN CANADA, FROM ALL INDUSTRIAL GROUPS, CALENDAR YEARS 1922-1942

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

Calendar year	Quantity	Selling value at works	Calendar year	Quantity	Selling value at works
1922	40,843	1,818,136	1933	106,421	2,777,702
1923	37,587	1,366,343	1934	138,750	3,517,193
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	7,228,177
1929	75,164	3,098,567	1940	302,842	8,154,305
1930	78,158	2,548,226	1941	297,539	8,617,040
1932	95,857	2,447,407	1942	406,141	12,480,300

Table 12 - SALES OF FERTILIZERS IN CANADA, EXCEPT FOR MANUFACTURING PURPOSES, DURING THE YEAR ENDED JUNE 30, 1943
(Preliminary figures)

Kind	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba, Saskatchewan & Alberta	British Columbia	TOTAL SOLD IN CANADA
(Tons of 2,000 pounds)								
Nitrate of soda	296	44	331	353	784	9	238	1,956
Sulphate of ammonia	1,368	1,049	924	179	380	168	1,532	5,600
Cyanamide	90	737	55	28	661	...	168	1,739
Superphosphate	7,414	2,161	5,011	13,549	10,555	543	1,086	40,319
Natural phosphate rock .....	...	...	...	111	11	...	58	180
Basic slag .....	...	...	...	14	...	...	3	17
Bone meal or bone flour .....	...	17	7	19	130	32	370	575
Muriate of potash	2,271	108	1,386	100	1,266	1	244	5,376
Sulphate of potash .....	...	1	7	1	33	1	56	99
Tankage .....	...	10	...	1	197	48	570	826
Sheep manure .....	...	...	...	105	413	17	93	626
Dried blood .....	...	...	...	...	55	132	190	377
Whale products .....	...	...	...	...	...	...	281	281
Fish meal .....	...	...	...	...	...	...	79	79
Ammonium phosphate .....	...	...	...	7	1,265	8,778	1,934	11,984
Other fertilizer materials ..	3	...	...	212	1,018	...	227	2,035
Total Fertilizer Materials	11,442	4,127	8,296	14,579	16,768	9,729	7,129	72,070
Total Mixed Fertilizers	27,858	34,119	53,377	127,960	159,713	1,085	13,587	417,699
GRAND TOTAL, 1943	39,300	38,246	61,673	142,539	176,481	10,814	20,716	489,769
GRAND TOTAL, 1942	22,556	32,826	44,431	110,142	190,380	11,281	15,528	427,143

Fertilizers

Table 13 - TOTAL SALES IN CANADA OF FERTILIZER MATERIALS AND MIXED FERTILIZERS FOR THE YEARS ENDED JUNE 30, 1942 and 1943

Province	1 9 4 2	1 9 4 3 (Preliminary figures)
	(Tons of 2,000 pounds)	
<u>Fertilizer Materials</u>		
Prince Edward Island	6,690	11,442
Nova Scotia	5,721	4,127
New Brunswick	10,618	8,296
Quebec	15,424	14,579
Ontario	25,821	16,768
Manitoba, Saskatchewan and Alberta .	9,398	9,729
British Columbia	6,060	7,129
CANADA	79,732	72,070
<u>Mixed Fertilizers</u>		
Prince Edward Island	15,866	27,858
Nova Scotia	27,104	34,119
New Brunswick	33,813	53,377
Quebec	94,718	127,960
Ontario	164,559	159,713
Manitoba, Saskatchewan and Alberta .	1,883	1,085
British Columbia	9,468	13,587
CANADA	347,411	417,699



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