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REPORT  
on the  
STARCH & GLUCOSE INDUSTRY  
in  
CANADA  
1921 and 1922

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Published by Authority of the Hon. Thos. A. Low, M. P.,

Minister of Trade and Commerce.

+ + +

OTTAWA

1924

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DEPARTMENT OF TAXATION

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CENSUS OF INDUSTRY

OTTAWA, CANADA.

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THE STARCH AND GLUCOSE INDUSTRY IN CANADA

1921 and 1922

Ottawa, April, 1924.- The Dominion Bureau of Statistics presents herewith a report on the Starch and Glucose industry in Canada for the calendar years 1921 and 1922. In 1921 there were 7 active establishments, 3 in the province of Ontario and 2 each in Quebec and Prince Edward Island. In 1922 the total operating plants had risen to 9, of which Prince Edward contributed 3 additional factories making 5 in all, Ontario remained the same as the previous year with 3, and Quebec reported only one establishment. In order not to divulge the operations of any individual establishment statistics relating to Prince Edward Island and Quebec have been combined and are shown throughout this report under the heading of "other provinces".

PRINCIPAL STATISTICS

Table 1 gives the principal statistics of the industry by provinces for the years 1921 and 1922.

Table 1.- Principal Statistics by Provinces, 1921-1922

Statistics	CANADA	Ontario	Other Provinces
<u>1921</u>			
Establishments . . . . . No.	7	3	4
Capital investment . . . . . \$	5,887,210	5,829,153	58,057
Employees on Salaries -			
Male . . . . . No.	39	35	4
Female . . . . . No.	29	27	2
Salaries . . . . . \$	113,610	100,460	13,150
Employees on Wages (Av.No.) -			
Male . . . . . No.	571	556	15
Female . . . . . No.	58	58	-
Wages . . . . . \$	667,498	657,726	9,772
Cost of fuel . . . . . \$	379,778	376,887	2,891
Power installed -			
Units . . . . . No.	139	133	6
Capacity . . . . . H.P.	7,215	7,128	87
Miscellaneous expenses . . . . . \$	772,523	749,915	22,608
Cost of materials . . . . . \$	2,716,292	2,643,615	70,277
Value of products . . . . . \$	4,436,328	4,318,988	117,340
Value added by manufacture . . . . . \$	1,720,036	1,672,973	47,063
<u>1922</u>			
Establishments . . . . . No.	9	3	6
Capital investment . . . . . \$	5,674,843	5,586,811	88,032
Employees on Salaries -			
Male . . . . . No.	48	41	7
Female . . . . . No.	32	30	2
Salaries . . . . . \$	120,402	102,036	18,366
Employees on Wages (Av.No.) -			
Male . . . . . No.	442	424	18
Female . . . . . No.	29	28	1
Wages . . . . . \$	422,754	413,463	9,288
Cost of fuel . . . . . \$	289,684	287,412	4,272
Power Installed: Units . . . . . No.	179	170	9
Capacity . . . . . H.P.	5,652	5,482	170
Miscellaneous expenses . . . . . \$	523,702	511,193	15,309
Cost of materials . . . . . \$	2,242,282	2,166,420	75,862
Value of products . . . . . \$	3,871,977	3,736,701	135,276
Value added by manufacture . . . . . \$	1,629,695	1,570,281	59,414

THE STARCH AND GLUCOSE INDUSTRY IN CANADA, 1921-22.

PRODUCTION

The quantity and selling value at the factory of the principal products of the industry is shown in Table II by provinces for the calendar years 1921 and 1922. Although there was a net increase of two factories over the two year period, there was a considerable reduction in both the quantity produced and the value, which fell from \$4,436,328 in 1921 to \$3,871,977 in 1922, being an increase of \$564,351. The only individual item of products which showed an increase was "laundry starch" which rose from 6,619,667 pounds valued at \$386,402 in 1921 to 8,179,988 pounds valued at \$424,425 in 1922, being an increased output of 1,560,321 pounds worth \$38,023.

Table II - Production by Provinces, 1921-22.

Products	CANADA		Ontario		Other Provinces	
	Quan. lb.	Value \$	Quan. lb.	Value \$	Quan. lb.	Value \$
<u>1921</u>						
Edible corn starch	15,311,911	886,737	15,253,786	881,989	78,125	4,748
Laundry starch(corn)	6,619,667	386,402	6,619,667	386,402	-	-
Potato starch .....	578,900	28,088	-	-	578,900	28,088
Glucose or dextrose	36,011,690	1,138,203	36,011,690	1,138,203	-	-
Grape sugar .....	2,698,861	95,141	2,698,861	95,141	-	-
Corn syrup .....	14,065,532	894,962	14,065,532	894,962	-	-
Corn oil .....	3,568,940	459,636	3,568,940	459,636	-	-
Gluten .....	27,570,222	432,643	27,570,222	432,643	-	-
Soap stock .....	191,792	4,263	191,792	4,263	-	-
Other stock feeds ..	-	36,259	-	-	-	36,259
Chinese starch .....	-	75,994	-	27,749	-	48,245
All other products ..	-	-	-	-	-	-
<b>TOTAL</b>		<b>4,436,328</b>		<b>4,318,988</b>		<b>117,340</b>
<u>1922</u>						
Edible corn starch	15,002,823	777,746	15,002,823	777,746	-	-
Laundry starch(corn)	8,179,988	424,425	8,179,988	424,425	-	-
Potato starch .....	1,010,000	46,816	-	-	1,010,000	46,816
Glucose or dextrose	35,422,747	1,061,875	33,422,747	1,061,875	-	-
Grape sugar .....	2,229,111	69,358	2,229,111	69,358	-	-
Corn syrup .....	13,320,846	671,904	13,320,846	671,904	-	-
Corn oil .....	1,664,779	133,322	1,664,779	133,322	-	-
Refined corn oil ...	811,138	129,376	811,138	129,376	-	-
Gluten .....	26,864,855	435,806	26,864,855	435,806	-	-
Soap stock .....	88,288	2,389	88,288	2,339	-	-
Other stock feeds ..	-	47,727	-	5,500	-	42,227
Chinese starch .....	-	46,233	-	-	-	46,233
All other products ..	-	25,000	-	25,000	-	-
<b>TOTAL</b>		<b>3,871,977</b>		<b>3,736,701</b>		<b>135,276</b>

THE STARCH AND GLUCOSE INDUSTRY IN CANADA, 1921-22.CAPITAL INVESTMENT

The amount of capital employed in the industry is shown by items for the provinces during the calendar years 1921-22 in Table III. Over the two year period there was a net decrease of \$212,367 in the amount of capital employed. Dividing this into two parts, viz., fixed and working capital, it will be seen that the former expanded to the extent of \$140,185, whilst the latter suffered a reduction amounting to \$352,552.

Table III.- Capital Employed by Provinces, 1921-22.

Items of Capital	CANADA	Ontario	Other Provinces
	\$	\$	\$
<u>1921</u>			
Land, buildings and fixtures .....	2,005,920	1,993,120	12,800
Machinery and tools .....	1,734,589	1,719,147	15,442
Materials on hand, stocks in process, etc.....	1,506,101	1,490,213	15,888
Cash, trading and operating accounts & bills receivable .....	640,600	626,673	13,927
<b>TOTAL CAPITAL</b>	<b>5,887,210</b>	<b>5,829,153</b>	<b>58,057</b>
<u>1922</u>			
Land, buildings and fixtures .....	2,110,623	2,081,167	29,456
Machinery and tools .....	1,770,071	1,748,611	21,460
Materials on hand, stocks in process, etc.....	1,178,843	1,157,134	21,709
Cash, trading and operating accounts and bills receivable ..	615,306	599,899	15,407
<b>TOTAL CAPITAL</b>	<b>5,674,843</b>	<b>5,586,811</b>	<b>88,032</b>

EMPLOYEES, SALARIES AND WAGES

Table IV presents the number of persons employed in the industry, by classes of employment and sex, and also gives the amount paid in salaries and wages during the calendar years 1921-22. The office force was augmented by 9 and the salary list increased by \$1,576 during the two year period, but in spite of the fact that two additional establishments reported operations during 1922, there was a considerable reduction in the average number of wage earners. The number of male workers fell from 556 in 1921 to 424 in 1922 and the female workers, 28 in number, employed during the latter year was a little less than 50 per cent of the previous year's total of 58. The payroll also diminished to the extent of \$244,260.

Table IV.- Employees, Salaries and Wages, 1921-22.

Classes of Employment	No. of Employees		Salaries & Wages
	Male	Female	
<u>1921</u>			\$
Salaried officers of corporations .....	3	-	16,300
General superintendents, managers .....	1	-	3,850
Technical experts, chemists, accountants	14	-	36,164
Clerks, stenographers, salesmen, etc....	17	27	44,146
Employees on wages, average number .....	556	58	657,726
<b>TOTAL</b>	<b>591</b>	<b>85</b>	<b>758,186</b>
<u>1922</u>			
Salaried officers of corporations .....	8	-	32,390
General superintendents, managers, etc..	2	-	5,600
Technical experts, chemists, accountants	14	-	32,000
Clerks, stenographers, salesmen, etc....	17	30	32,046
Employees on wages, average number .....	424	28	413,466
<b>TOTAL</b>	<b>465</b>	<b>58</b>	<b>515,502</b>

THE STARCH AND GLUCOSE INDUSTRY IN CANADA, 1921-1922.OTHER LABOUR STATISTICS

Statistics regarding the number of days the plants were in operation and the number of hours normally worked by wage earners are given in Table V for the calendar years 1921 and 1922. The outstanding feature is the marked increase in the number of days the plants were entirely idle, viz., from an average of 107.85 days per establishment in 1921 to 156.55 days in 1922.

Table V.- Other Labour Statistics.

	1 9 2 1		1 9 2 2	
	Total	Average	Total	Average
Number of establishments .....	7		9	
Number of days plants were in operation:-				
On full time .....	1,373	196.14	1,327	147.44
Idle .....	755	107.85	1,409	156.55
Number of hours worked by employees:-				
Per day .....	66	9.4	86	9.5
Per week .....	392	56.0	510	56.6

POWER STATISTICS

Table VI gives the number of units and the horse-power capacity according to manufacturers rating of the various classes of power employed in the industry, for the two years 1921-22. Electrical energy takes first place in each year with 127 motors with a total capacity of 2,678 indicated horsepower in 1921 and 166 motors with 2,467 horsepower capacity during 1922.

Table VI.- Power Employed, 1921-1922

Classes of Power	1 9 2 1		1 9 2 2	
	Units No.	H.P.Capacity	Units No.	H.P.Capacity
Steam engines and turbines	10	2,780	13	3,185
Electric motors .....	127	2,678	166	2,467
Electric generators or dynamos .....	2	1,757	-	-
TOTAL	139	7,215	179	5,652

FUEL CONSUMPTION

The quantity and value of the different kinds of fuel used in the industry is given in Table VII for the calendar years 1921 and 1922. Bituminous coal takes first place during both years, although there was a reduction in the quantity consumed during 1922, of 6,379 tons with a decreased valuation of \$124,333.

Table VII.- Fuel Consumption, 1921-22

Classes of Fuel	Unit of measure	1 9 2 1		1 9 2 2	
		Quanl	Cost Val.	Quan.	Cost Value
Bituminous coal ..	ton	39,870	368,832	33,491	244,499
Anthracite coal ..	"	464	6,786	887	14,291
Gasoline .....	gal.	1,000	420	2,000	600
Oil (fuel) .....	"	39,344	3,715	342,897	30,113
Wood .....	cd.	-	-	41	181
Gas .....	m.c.ft.	18	25	-	-
TOTAL		-	379,778	-	289,684

THE STARCH AND GLUCOSE INDUSTRY IN CANADA, 1921-22

MISCELLANEOUS EXPENSES

The total amount expended during the calendar years 1921 and 1922 for overhead charges or miscellaneous expenses is given in Table VIII. Owing to changes in the general schedule, manufacturers were not required to itemize their expenses during 1922.

Table VIII.- Miscellaneous Expenses, 1921-1922

Items of Expense	1921	1922
Rent of offices, works and machinery	2,006	526,502
Rent of power .....	386	
Insurance (premiums for year only) .	41,276	
Taxes, all kinds .....	50,279	
Royalties, use of patents, etc.....	4,075	
Advertising expenses .....	67,770	
Travelling expenses .....	30,518	
Repairs to buildings and machinery .	134,244	
All other sundry expenses .....	441,969	
TOTAL	772,523	526,502

MATERIALS USED

The quantity and cost value delivered at the factory of the principal materials used in the industry during the calendar years 1921 and 1922, are given in Table IX. Corn takes first place during the two-year period, although there was a considerable reduction in both the quantity and the value. The quantity and value reported for the year 1921 was 109,067,144 pounds at a cost of \$1,467,809; during the following year this fell to 104,782,816 pounds, worth \$1,422,435, being a decrease of 4,284,328 pounds valued at \$45,344.

Table IX.- Materials Used, 1921-1922.

Materials	CANADA		Ontario		Other Provinces	
	Quantity	Value	Quantity	Value	Quan.	Value
<u>1921</u>	lb.	\$	lb.	\$	lb.	\$
Corn .....	109,067,144	1,467,809	103,672,144	1,429,760	395,000	18,049
Corn starch .....	1,547,540	64,340	1,547,540	64,340	-	-
Potatoes .....	4,016,040	13,872	-	-	4,016,040	13,872
Sugar.....	95,000	9,718	95,000	9,718	-	-
Cane syrup for mixing .....	1,258,598	57,088	1,258,598	57,088	-	-
Boneblack(purchased)	229,819	26,342	229,819	26,342	-	-
Hydrochloric acid .	646,242	18,655	646,242	18,655	-	-
Sulphuric acid 50' Be.	10,451	553	10,451	553	-	-
Other chemicals, soda ash, etc.....	-	23,557	-	23,557	-	-
Corn syrup .....	-	-	-	-	-	-
Borax .....	29,067	6,083	-	-	29,067	6,083
Soda .....	97,500	4,046	-	-	97,500	4,046
Crude oil .....	885,024	70,257	885,024	70,257	-	-
Glucose .....	390,407	11,223	390,407	11,223	-	-
Containers & labels	-	904,235	-	904,235	-	-
All other materials	-	38,459	-	10,507	-	27,952
TOTAL		2,716,292		2,646,015		70,271

## THE STARCH AND GLUCOSE INDUSTRY IN CANADA, 1921-22.

Table IX.- Materials Used, 1921-22 (Continued)

Materials	CANADA		Ontario		Other Countries	
	Quantity	Value	Quantity	Value	Quan.	Value
1922	lb.	\$	lb.	\$	lb.	\$
Corn .....	104,782,816	1,422,465	104,782,816	1,422,465	-	-
Corn starch .....	579,635	23,090	224,000	8,865	355,625	14,225
Potatoes .....	6,652,864	26,087	-	-	6,652,864	26,087
Sugar .....	135,000	9,283	135,000	9,283	-	-
Cane syrup for mixing .....	1,256,561	40,518	1,256,561	40,518	-	-
Boneblack(purchased)	260,314	13,664	260,314	13,664	-	-
Hydrochloric acid .	826,799	12,987	826,799	12,987	-	-
Sulphuric acid 50' Be.....	2,568	91	2,568	91	-	-
Other chemicals, soda ash, etc...	-	9,989	-	9,989	-	-
Corn syrup .....	852,720	21,866	852,720	21,866	-	-
Containers & labels	-	591,213	-	590,663	-	550
All other materials	-	71,029	-	36,029	-	35,000
TOTAL		2,242,282		2,166,420		75,862

## IMPORTS AND EXPORTS

Table X shows by countries the quantity and value of the principal items imported and exported for the calendar years 1921 and 1922.

Table X.- (A) Imports, 1921-1922.

Articles Imported	United Kingdom		United States		Other countries	
	Quan.	Value	Quan.	Value	Quan.	Value
1921	lb.	\$	lb.	\$	lb.	\$
British gum, dry sizing) cream & enamel sizing)	119,707	5,157	853,191	43,708	-	-
Dextrine, dry .....	40	4	1,612,342	81,496	121,580	6,795
Starch, including farina, corn starch, potato starch, etc.....	60,852	8,056	3,594,505	130,100	236,553	12,511
Glucose or grape sugar, glucose syrup, corn syrup, or any syrup containing any admixture thereof ...	47,650	4,822	6,046,336	206,589	50	3
TOTAL		18,039		461,893		19,307
1922						
British gum, dry sizing) cream & enamel sizing)	152,471	6,203	1,177,797	67,147	-	-
Dextrine, dry .....	9,639	905	2,470,830	109,064	75,900	4,450
Starch, including farina, corn starch, potato starch, etc.....	133,775	11,592	2,814,138	110,379	1,247,150	43,004
Glucose or grape sugar, glucose syrup, corn syrup, or any syrup containing any admixture thereof ....	29,554	2,975	5,158,079	138,388	340	36
TOTAL		21,675		425,498		47,490



THE STARCH AND GLUCOSE INDUSTRY IN CANADA,

1921 and 1922

IMPORTS AND EXPORTS (Continued).

Table X(E).- Exports, 1921,1922.

Articles Exported	United Kingdom		United States		Other countries	
	Quan. lb.	Value \$	Quan. lb.	Value \$	Quan. lb.	Value \$
<u>1921</u>						
Corn starch .....	-	-	5,160	312	6,405	637
Potato starch .....	-	-	-	-	570	63
TOTAL VALUE EXPORTS				312		700
<u>1922</u>						
Corn starch .....	-	-	-	-	16,690	1,415
Potato starch .....	-	-	-	-	30	6
TOTAL VALUE EXPORTS						1,421

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