CANADA

DEPARTMENT OF TRADE AND COMMERCE

DOMINION BUREAU OF STATISTICS

CENSUS OF INDUSTRY

REPORT

on the

STARCH & GLUCOSE INDUSTRY

in

CANADA

1928

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CENSUS OF INDUSTRY

OTTAWA - CANADA

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THE STARCH AND GLUCOSE INDUSTRY IN CANADA, 1928.

Ottawa, October, 1929. A report on the starch and glucose industry is herewith presented for the calendar year 1928. Returns were received from 6 individual factories, located by provinces as follows:- Prince Edward Island 4 and Ontario 2. Statistics of the industry are given for Canada only in this report to avoid the disclosure of the operations of individual plants.

Principal Statistics, 1928.

A summary of the principal statistics relating to this industry is shown in Table 1. The total value of production increased from $4,936,025 in 1927 to $5,455,035 in 1928, an increase of $519,010 over the two year period.

Table 1. Principal statistics of the starch and glucose industry compared for 1927 and 1928.

Principal Statistics		CANADA	
		1927	1928
Establishments reporting	No.	4	6
Capital invested	$	5,121,901	5,446,548
Employees on salaries -			
Males	No.	40	39
Females	No.	19	19
Total salaries	$	155,769	156,509
Employees on wages, average -			
Males	No.	418	420
Females	No.	16	17
Total wages	$	456,124	457,291
Cost of fuel	$	249,822	218,385
Power equipment -			
Units	No.	230	228
Capacity	H.P.	4,465	3,062
Cost of materials	$	3,379,075	3,778,927
Gross value of products	$	4,936,025	5,455,035
Net value of products	$	1,556,950	1,676,108

Size of Establishments

Owing to the limited number of firms reporting in this industry, particulars relating to the size of establishments cannot be given without disclosing statistics of individual plants.

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Production Statistics

The quantity and selling value at the factory of the various products of this industry are shown in Table 2, for Canada during the calendar years 1927 and 1928.

Table 2. Production in Canada, 1927 and 1928.

Classes of products		CANADA			
		1927		1928	
		Quantity	Selling Value	Quantity	Selling Value
			$		$
Edible corn starch	lb.	17,802,434	919,333	18,265,559	1,003,882
Laundry starch (corn)	"	9,014,869	461,174	8,190,392	407,616
Potato starch	"	419,587	20,570	2,410,601	96,732
Glucose or dextrose	"	40,621,391	1,420,448	43,202,804	1,627,652
Grape sugar	"	4,831,359	154,784	4,946,381	172,998
Corn syrup	"	17,233,966	761,047	17,046,631	780,080
Corn oil (crude)	"	3,310,042	277,545	3,314,111	295,899
" " (refined)	"	1,843,068	281,805	1,851,594	307,365
Gluten	"	36,680,568	627,700	38,807,725	750,504
All other products	-	-	11,609	-	12,307
Total value	-	-	4,936,025	-	5,455,035

Capital Investment

The amount of capital invested in the industry during the calendar year 1928 is shown for Canada in Table 3, divided as between fixed capital (including land, buildings, machinery and tools) and working capital (including materials on hand, finished products on hand, fuel and miscellaneous supplies on hand and cash, trading and operating accounts, etc.) Compared with 1927 there was an increase in total capital invested of $324,647.

Table 3. Capital investment, compared for 1927 and 1928.

Items of Capital	CANADA	
	1927	1928
	$	$
Fixed capital -		
Land, buildings and fixtures, machinery and tools	2,922,966	3,231,422
Working capital -		
Materials and stocks on hand, fuel, etc.	1,022,807	931,670
Cash, trading and operating accounts, etc.	1,176,128	1,283,456
Total working capital	2,198,935	2,215,126
Grand total of capital	5,121,901	5,446,548

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Employment Statistics

Tables 4, 5 and 6 present statistics of employment under three heads. Table 4 shows the number of persons employed according to classes, sex and remuneration. Table 5, the number of wage-earners employed by months according to sex and Table 6, the operating time of plants and employees.

Employees, salaries and wages: The number of persons employed in the industry in the Dominion in 1928 on salaries was 58 with salaries totalling $156,509. Wage-earners totalled 437 in number and $457,291 was paid for wages.

Table 4. Employees, salaries and wages, in Canada, 1927 and 1928.

	Salaried employees			Wage-earners			Total employees		
	Male	Female	Total Salaries	Male	Female	Total Wages	Male	Female	Total Salaries and Wages
	No.	No.	$	No.	No.	$	No.	No.	$
Canada, 1927	40	19	155,769	418	16	456,124	458	35	611,893
Canada, 1928	39	19	156,509	420	17	457,291	459	36	613,800

Employment by months: The number of persons at employment by months is shown in Table 5, for the Dominion. The month of highest employment was October with 459 and that of lowest employment July with 380. The average male employment throughout the year was 420 and female employment 17.

Table 5. Employment by months, 1928.

Months	Wage-earners		Months	Wage-earners	
	Male	Female		Male	Female
January	374	15	July	363	17
February	379	15	August	379	17
March	377	17	September	417	14
April	375	17	October	442	17
May	378	17	November	417	18
June	367	17	December	389	17
			Total by months	4,657	198
			Average monthly employment during year	420	17

Working time: Table 6 shows the totals and averages of the working time of plants and employees during the calendar year 1928. Owing to the seasonal nature of the plants making potato starch the average working time of plants is greatly reduced.

Table 6. Working time of plants and employees, 1928.

Establishments in operation	6	
	Total	Average
Days in operation on full time	727	121.17
Days in operation on part time	42	7.00
Days idle	1,055	175.83
Hours worked per day or shift by wage-earners	59	9.83
Hours worked per week by wage-earners	354	59.00

Other Employment Statistics

The number and percentage of wage-earners in months of highest employment working specified hours per day is shown in Table 6(a) for Canada and the provinces. For the Dominion, the number working specified hours was distributed between the classes, the percentage working 10 hours and over being highest. In Ontario over 39 per cent of the employees worked 10 hours per day, and in Prince Edward Island 76.56 per cent worked 9 hours. More than 20 per cent of the wage-earners in the Dominion worked over 10 hours per day.

Table 6(a). Hours worked by wage-earners in month of highest employment, 1928.

Provinces	Wage-earners in month of highest employment working per day of				Percentage of wage-earners working per day of			
	8 hours or less	9 hours	10 hours	Over 10 hours	8 hours or less	9 hours	10 hours	Over 10 hours
	No.	No.	No.	No.	p.c.	p.c.	p.c.	p.c.
CANADA	12	187	175	97	2.55	39.70	37.15	20.60
Ontario	12	138	160	97	2.95	33.91	39.31	23.83
Prince-Edward Island	-	49	15	-	-	76.56	23.44	-

The number of hours worked per day in the month of highest employment and the standard working hours per week are shown in Table 6(b). It should be noted that whilst the statistics relating to hours of labour in columns 1, 2 and 3 are based on figures compiled for the month of highest employment, those in columns 4 and 5 represent the total and average of standard weekly hours of labour for the number of establishments reporting to the Bureau. For this reason the relation between daily and weekly hours of labour is to some extent impaired. The average daily hours of labour on the above basis was for the Dominion 9.66, whilst the average standard weekly hours worked out at 59 per plant.

Table 6(b). Hours of labour per day and per week, 1928.

Provinces	Total daily hours and number of wage-earners in month of highest employment			Standard working hours per week	
	Total hours	Total Wage-earners	Average hours per day per wage-earner	Total	Average
	No.	No.	No.	No.	No.
CANADA	4,548	471	9.66	354	59.00
Ontario	3,957	407	9.72	132	66.00
Prince-Edward Island	591	64	9.23	222	55.50

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Fuel Consumption

The consumption of fuel is shown in Table 7 by classes, quantity and cost value delivered at the factory. Coal of all kinds represented over 97 per cent of the cost of all fuel used during the year. The other principal item reported was fuel oil, to the value of $6,010.

Table 7. Fuel consumption, 1928.

Kinds of fuel	Unit of measure	Quantity	Cost Value
			$
Bituminous coal	ton	40,015	208,282
Anthracite coal	ton	758	3,942
Fuel oil	gal.	64,976	6,010
All other fuel	-	-	151
Total cost of fuel used	-	-	218,385

Power Equipment

The power equipment employed in the Starch and Glucose industry in the Dominion in 1928 is shown in Table 8, according to manufacturers' rating. There was an increase of 4 in the total number of motors operated by power owned and an increase of 542 in rated horsepower as compared with 1927.

Table 8. Power equipment, 1928.

Description	Number of Units	Horse power according to manufacturers' rating
Steam engines	8	2,020
Gas engines	1	10
Total primary power equipment	9	2,030
Electric motors operated by power generated by establishment	228	3,062
Total power installation	237	5,092

There were 17 boilers installed for steam heating and other purposes with an aggregate boiler h.p. capacity of 2,930.

Materials Used

The quantity and value of the principal materials used during the year 1928 is given in Table 9.

Table 9. Materials used compared for 1927 and 1928.

Principal Materials	1927		1928	
	Quantity	Cost Value	Quantity	Cost Value
	Lb.	$	Lb.	$
Corn	135,993,032	2,272,960	140,208,666	2,652,432
Corn starch	794	41	45,941	2,129
Potatoes	2,460,000	8,802	15,912,220	48,229
Sugar	123,700	8,180	114,800	6,951
Cane syrup for mixing	1,552,708	39,250	1,476,157	43,560
Crude corn oil	2,195,565	189,012	2,065,230	185,292
Boneblack (purchased)	250,137	15,116	353,135	18,362
Hydrochloric acid	489,603	7,072	605,419	9,152
Sulphuric acid 50°Be	11,396	342	7,876	236
Other chemicals, soda ash, etc.	-	24,737	-	26,869
Containers and labels	-	653,527	-	671,205
All other materials	-	160,036	-	114,514
Total	-	3,379,075	-	3,778,927

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Imports and Exports

The quantity and value of starch and similar preparations are shown in Table 10 for imports and in Table 11 for exports. The total value of imports for consumption in Canada for the calendar year 1928 was $789,110 as compared with $703,648 in 1927. Exports of goods the produce of Canada were valued at $53,747 in 1928 and $38,266 in 1927.

Table 10. Imports by Classes, Countries, Quantity and Value, calendar year 1928.

Articles imported by countries		Quantity	Value $
Starch, including corn starch and similar preparations -			
United Kingdom	lb.	200,363	11,692
United States	"	2,026,530	112,059
Other Countries	"	64,060	3,098
Total	"	2,290,953	126,849
Starch, potato and potato flour -			
United Kingdom	lb.	7,250	344
United States	"	1,365,022	96,114
Netherlands	"	3,549,908	118,903
Other Countries	"	32,061	1,871
Total	"	4,954,241	217,232
British gum, dry sizing cream and enamel sizing -			
United Kingdom	Cwt.	953	4,605
United States	"	6,356	41,817
Other Countries	"	23	587
Total	"	7,332	47,009
Dextrine, dry -			
United Kingdom	Cwt.	101	645
United States	"	42,006	181,587
Netherlands	"	6,580	28,848
Total	"	48,687	211,080
Glucose or grape sugar, glucose syrup and corn syrup or any syrups containing admixtures thereof -			
United Kingdom	Cwt.	631	5,195
United States	"	52,937	181,745
Total	"	53,568	186,940

Table 11. Exports of Canadian Produce by Countries, Quantity and Value, 1928.

Articles Exported by Countries	Quantity Lb.	Value $
Corn Starch -		
United States	-	-
New Zealand	1,025,240	53,474
Other Countries	180	12
Total	1,025,420	53,486
Potato Starch -		
United States	500	31
Other Countries	3,000	230
Total	3,500	261

APPENDIX

STARCH AND GLUCOSE MANUFACTURERS, 1928.

Canada Starch Co. Ltd.,	Cardinal, Ontario.
St. Lawrence Starch Co. Ltd.,	Port Credit, Ontario.
Geo. E. Full & Son,	Hunter River, Prince Edward Island.
St. Peter's Starch Co. Ltd.,	St. Peter's, Prince Edward Island.
The Canadian Denatured Alcohol Co. Ltd.,	East Baltic, Prince Edward Island.
Murray Harbour Starch Co.,	Murray Harbour, Prince Edward Island.