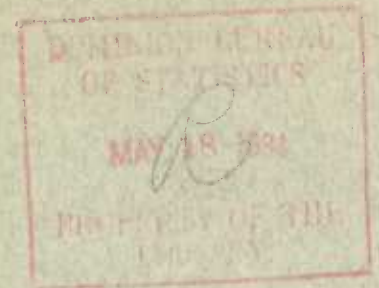


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CANADA

DEPARTMENT OF TRADE AND COMMERCE

DOMINION BUREAU OF STATISTICS

AGRICULTURAL BRANCH

THE PRODUCTION AND DISTRIBUTION OF CANADIAN GRAINS AND SEEDS.

IV. FLAXSEED

A survey of statistical and other data relating
to Canadian flaxseed and its place in world
production and trade.

Published by Authority of the HON. H. H. STEVENS, M.P.,
Minister of Trade and Commerce.

DEPARTMENT OF TRADE AND COMMERCE
DOMINION BUREAU OF STATISTICS - CANADA
AGRICULTURAL BRANCH

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F L A X

Flax is known to have been cultivated for about five thousand years and was associated with early civilization in Babylon and Egypt. In the history of the ancient Egyptians and of the Hebrews frequent references are made to the use of linens. At one time it appears that linen was the chief textile in Egypt and was generally used for wearing apparel. Fine linens were certainly among the possessions of the higher classes in society. The growing and processing of flax fibre comprise one of the earliest activities of the textile industry. Very little is known as to the methods utilized by early peoples in the manufacture of linen. Prior to the introduction of cotton, flax was the chief vegetable fibre and linens occupied an important place in the commerce of the world.

Geographical Distribution

Flax has been and is produced in many parts of the world indicating its ability to grow under diverse climatic and soil conditions. A study of production statistics indicates that flax is cultivated on a small scale throughout many countries in Europe. Canada and United States produce flax and India is interested in its cultivation. Production of flax has assumed large proportions in the more southerly areas of South America particularly in Uruguay and the Argentine. The latter country now produces a large percentage of the world's flaxseed which enters into international trade. While the annual surplus for export is largely concentrated in the Argentine, import demand comes from a large number of countries. It is interesting to note that in the case of flaxseed the United States is one of the large importing countries of the world.

Types of Flax

In the main there are two chief types of flax produced in the world today. One type of flax is cultivated for the production of fibre, while the other type is cultivated for the production of flaxseed. In general a good type of fibre flax grows thickly and produces a long slender straw which yields a maximum of fibre after being subjected to appropriate treatments. Varieties for the production of seed are very short in straw with heavy branches bearing a large number of seeds. Flaxseed is one of the useful oil seeds and the chief products made from flaxseed of this type are linseed oil, oil cake and oil cake meal. In Canada flax has been cultivated mainly for the production of flaxseed and has been localized largely in the the three Prairie Provinces. At the same time, however, some fibre flax is produced and Canada is interested to a small degree in the production of fibre flax seed. Generally speaking, Canada produces flaxseed for its oil content.

Uses of Flax

As indicated in the preceding paragraphs flax has many uses. Fibre flax is used in the manufacture of linen goods of all kinds and constitutes an important element in the textile industry. From seed flax fibre, certain varieties of yarns, threads and textile fabrics are produced. Seed flax straw is also used in upholstering types of furniture, in manufacturing rugs, matting, towelling, insulating boards and building paper. Seed flax however is chiefly used for the production of linseed oil, oil cake and oil cake meal. Linseed oil is used extensively in the manufacture of paints and varnishes and is valuable for its drying and preserving qualities. Linseed oil is also used in the manufacture of linoleum oil cloth and other manufactured products. After the linseed oil has been extracted from the flaxseed the residue is manufactured into oil cake and oil cake meal. These latter products are rich in protein and constitute an important factor in balancing live-stock rations.

Production in the Prairie Provinces

Flaxseed was first introduced to Western Canada about 1875. Only the low bushy variety is grown in the Prairie Provinces and the fibre is not used commercially to any extent. Flaxseed produced in the western provinces is high in oil content and constitutes a satisfactory industrial product. Flaxseed was an important crop during the years of rapid development prior to the war. The usefulness of flaxseed as a field crop at that time was based upon its ability to yield well on new breaking. The absence of weeds in the newly developing areas contributed to the success of flaxseed production. The cultivation of flaxseed reached its peak in the Prairie Provinces in 1912, declined sharply during the war and early post-war years, recovered slightly in 1920 and 1924, and during the past eight years has fallen to extremely low levels. The popularity of flaxseed as a field crop in the Prairie Provinces has declined as the weed problem has become more serious. Flaxseed requires a clean seed bed and this fact serves to limit acreage at the present time.

The Present Position of the Industry

In 1933 the area sown to flaxseed amounted to 243,000 acres and production amounted to 632,000 bushels. Production in 1933 fell below normal domestic requirements and were it not for a carry-over of slightly over one million bushels on July 31, 1933 Canada would have had to import considerable quantities of flaxseed during the present crop year. The farmers' acreage intentions report issued by the Dominion Bureau of Statistics on May 9, 1934 indicates a still smaller flaxseed acreage for 1934 and unless phenomenal yields are harvested this year imports of flaxseed into Canada during 1934-35 will be substantial. It is evident that acreage and production of flaxseed in Canada have declined to abnormally low levels. Crushing plants in Canada require about two million bushels of flaxseed annually, or about three times the amount produced in 1933.

PRODUCTION OF FLAXSEED IN CANADA

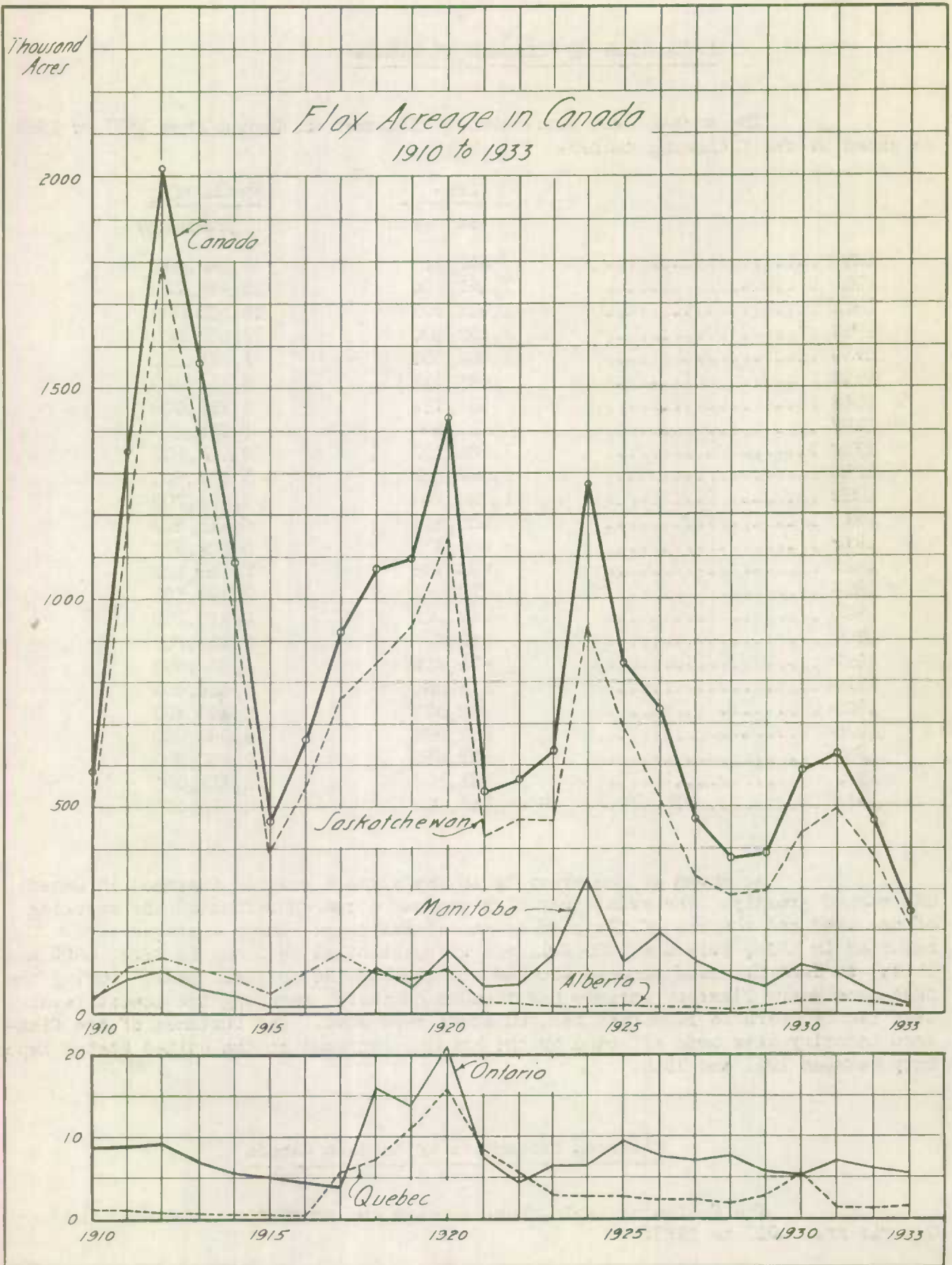
The acreage and production of flaxseed in Canada from 1910 to 1933 is shown in the following table:-

	<u>Area</u> (acres)	<u>Production</u> (bushels)
1910	582,326	4,244,566
1911	1,351,000	15,443,000
1912	2,021,900	26,130,000
1913	1,552,800	17,539,000
1914	1,084,000	7,175,200
1915	463,359	6,114,000
1916	657,781	8,259,800
1917	919,500	5,934,900
1918	1,068,120	6,055,200
1919	1,093,115	5,472,800
1920	1,428,164	7,997,700
1921	533,147	4,111,800
1922	565,479	5,008,500
1923	629,938	7,139,500
1924	1,276,667	9,694,700
1925	842,527	6,237,100
1926	738,397	5,994,700
1927	475,852	4,884,600
1928	378,081	3,614,400
1929	382,359	2,060,400
1930	581,800	5,069,000
1931	627,430	2,465,000
1932	461,500	2,719,000
1933	243,600	632,000

As shown by the above table the acreage sown to flaxseed in Canada has varied greatly. The relatively high pre-war acreages reflected the breaking of new land and the use of flaxseed as an initial crop. Large acreages were reported in 1918, 1919 and 1920 followed by substantial declines in 1921, 1922 and 1923. In 1924 flaxseed acreage doubled and reached the post-war peak. During the past nine years flaxseed acreage has trended downward, reaching the lowest level in over twenty years in 1933 when 243,600 acres were sown. The fortunes of the flaxseed industry have been affected by the gradual increase in the United States import duty between 1921 and 1930.

Flaxseed Production in Eastern Canada

The following table shows acreage and production in Quebec and Ontario from 1910 to 1933:-



	Quebec		Ontario		Total	
	Area (acres)	Production (bushels)	Area (acres)	Production (bushels)	Area (acres)	Production (bushels)
10	1,361	13,350	8,780	82,901	10,141	96,251
11	1,146	13,000	8,790	124,000	9,936	137,000
12	900	9,000	9,000	143,000	9,900	152,000
13	800	9,000	7,000	164,000	7,800	173,000
14	700	8,200	5,300	84,000	6,000	92,200
15	600	7,000	5,000	62,000	5,600	69,000
16	500	5,300	4,500	42,000	5,000	47,300
17	5,700	47,000	4,000	52,000	9,700	99,000
18	7,357	83,000	15,925	196,200	23,282	279,200
19	11,384	111,000	13,717	129,500	25,101	240,500
20	16,035	184,000	21,053	224,900	37,088	408,900
21	8,641	99,400	7,534	66,700	16,175	166,100
22	5,880	58,200	4,556	48,600	10,436	106,800
23	3,000	26,000	6,766	68,700	9,766	94,700
24	2,800	24,000	6,619	78,000	9,419	102,000
25	2,700	24,000	9,789	123,100	12,489	147,100
26	2,500	28,000	7,712	75,700	10,212	103,700
27	2,400	27,000	7,080	68,000	9,480	95,000
28	2,000	16,000	7,964	67,000	9,964	83,000
29	2,996	36,400	5,492	47,000	8,488	83,400
30	5,300	51,000	5,200	51,000	10,500	102,000
31	1,529	16,000	7,065	76,000	8,594	92,000
32	1,400	14,000	6,300	62,000	7,700	76,000
33	1,800	15,000	5,500	50,000	7,300	65,000

The above table shows that acreage sown to flaxseed in Quebec and Ontario followed the same general trend. Apart from rapid expansion in 1917, 1918, 1919 and 1920, the acreage sown to flaxseed in Ontario and Quebec has been relatively stable. Since 1920 acreages have been slowly declining. These provinces only produce a small percentage of total Canadian flaxseed production.

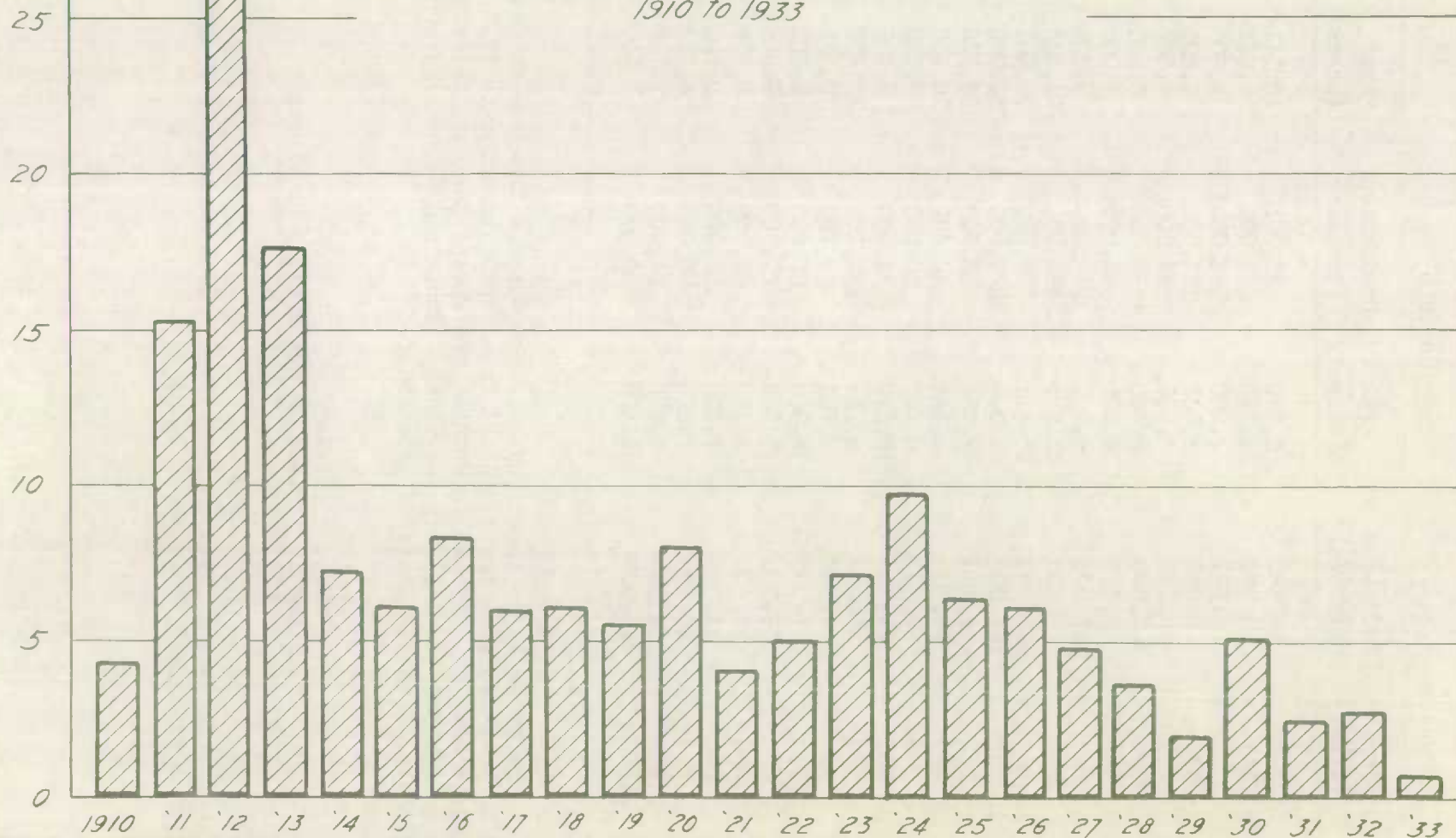
Flaxseed Production in the Prairie Provinces

The following table shows acreage and production of flaxseed in the Prairie Provinces from 1910 to 1933:-

Million
Bushels

Production of Flax in Canada

1910 to 1933



	Manitoba		Saskatchewan		Alberta		Total	
	Acreage (acres)	Production (bush.)	Acreage (acres)	Production (bush.)	Acreage (acres)	Production (bush.)	Acreage (acres)	Production (bush.)
1910 ...	34,684	176,675	506,425	3,893,160	31,076	78,480	572,185	4,148,315
1911 ...	79,765	1,149,000	1,153,861	13,039,000	107,273	1,116,000	1,340,899	15,304,000
1912 ...	100,000	1,252,000	1,780,000	23,033,000	132,000	1,693,000	2,012,000	25,978,000
1913 ...	54,000	632,000	1,386,000	15,579,000	105,000	1,155,000	1,545,000	17,366,000
1914 ...	40,000	338,000	958,000	6,131,000	80,000	614,000	1,078,000	7,083,000
1915 ...	14,505	120,000	395,254	5,255,000	48,000	670,000	457,759	6,045,000
1916 ...	15,684	210,000	542,034	6,692,000	95,063	1,310,500	652,781	8,212,500
1917 ...	16,300	146,700	753,700	4,710,600	139,800	978,600	909,800	5,835,900
1918 ...	107,961	1,091,000	840,957	4,205,000	95,920	480,000	1,044,838	5,776,000
1919 ...	57,379	520,300	929,945	4,490,000	80,690	222,000	1,068,014	5,232,300
1920 ...	146,455	1,157,800	1,140,921	5,705,000	103,700	726,000	1,391,076	7,588,800
1921 ...	61,689	544,700	426,849	3,230,000	28,434	171,000	516,972	3,945,700
1922 ...	66,680	734,000	466,177	4,079,000	22,186	88,700	555,043	4,301,700
1923 ...	139,519	1,395,000	465,653	5,493,800	15,000	156,000	620,172	7,044,800
1924 ...	323,813	3,403,000	927,082	6,119,000	15,000	55,900	1,265,895	9,577,900
1925 ...	118,937	1,125,000	692,136	4,870,000	17,780	83,000	828,853	6,078,000
1926 ...	195,364	2,051,000	519,934	3,744,000	11,856	83,000	727,204	5,878,000
1927 ...	122,179	1,198,000	330,675	3,373,000	12,597	202,000	465,451	4,773,000
1928 ...	81,789	804,400	279,414	2,654,000	6,182	61,000	367,385	3,519,400
1929 ...	62,474	445,000	298,302	1,462,000	12,639	63,000	373,415	1,970,000
1930 ...	112,000	728,000	431,000	3,900,000	28,000	335,000	571,000	4,963,000
1931 ...	97,562	350,000	492,168	1,820,000	28,831	200,000	618,561	2,370,000
1932 ...	49,300	240,000	381,200	2,200,000	23,000	200,000	453,500	2,643,000
1933 ...	20,200	110,000	205,000	410,000	10,700	43,000	235,900	563,000

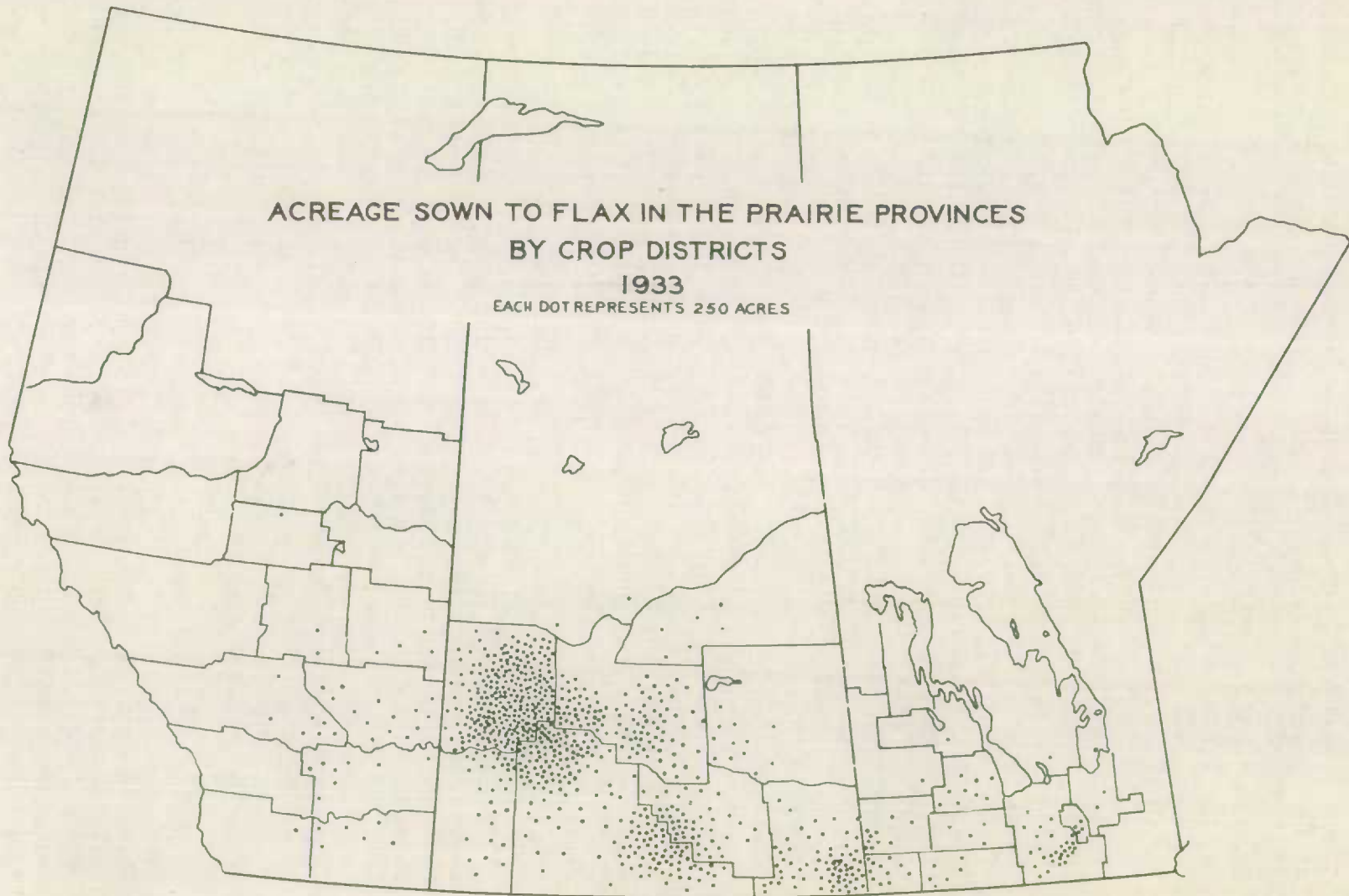
Flaxseed acreage in Manitoba has varied greatly in the past twenty years but has not constituted a very high proportion of the area sown to field crops. The largest acreage was reported in 1924 when 323,813 acres were sown. In this year production amounted to 3.4 million bushels. In Manitoba flaxseed acreage increased sharply in 1911 and 1912 followed by an even sharper decrease in the next three years. Relatively large acreages were reported in 1918, 1919 and 1920. After a recession in 1921 and 1922, flaxseed acreage increased sharply in 1923 and 1924, reaching record levels in the latter year. Since 1925 acreage has gradually decreased in Manitoba reaching the small figure of 20,200 acres in 1933. Production in 1933 amounted to only 110,000 bushels, the smallest yield since 1910.

Flaxseed acreage increased steadily in the early period of development in Saskatchewan, reaching a total of 1,386,000 acres in 1912. Acreage declined rapidly in 1913, 1914 and 1915, but moved upward in the ensuing five years again exceeding 1 million acres in 1920. In 1921, 1922 and 1923 flaxseed acreage ranged between 400,000 and 500,000 acres. The peak post-war area was sown in 1924, but since that year acreage has been declining steadily reaching the lowest point in the past twenty years in 1933 when 205,000 acres were sown. Production has varied greatly in Saskatchewan, the peak acreage of 1912 yielding slightly more than 23 million bushels. The largest production since the war amounted to 6,119,000 bushels in 1924. Production in 1933 amounted to only 410,000 bushels.

ACREAGE SOWN TO FLAX IN THE PRAIRIE PROVINCES
BY CROP DISTRICTS

1933

EACH DOT REPRESENTS 250 ACRES



Flaxseed production has never occupied an important place in Alberta. Acreage has ranged well under a maximum of 150,000 acres and since 1921 has ranged under 50,000 acres. In 1933 only 10,700 acres of flaxseed were sown. Only in three years since 1910 has Alberta produced over one million bushels of flaxseed.

Taking the Prairie Provinces as a whole flaxseed acreage reached its peak in 1912 when slightly over 2,000,000 acres were sown and a yield of 25,978,000 bushels were reported. Since that time flaxseed acreage has varied greatly. A sharp increase is noted during the war followed by a recession in 1921, 1922 and 1923. Acreage in 1924 was relatively high, amounting to over 1 million acres. Acreage in 1933 amounted to 235,900 acres, while production was estimated at 563,000 bushels. Flaxseed production in the Prairie Provinces has been very irregular.

The Distribution of Flaxseed Acreage in Western Canada

The following table shows the distribution of flaxseed acreage in the Prairie Provinces by crop districts.

Acreage Sown to Flaxseed - Prairie Provinces - 1933.
By Crop Districts

Crop District	Manitoba (acres)	Saskatchewan (acres)	Alberta (acres)
1	2,500	17,300	1,600
2	1,500	11,600	100
3	7,500	44,900	1,800
4	1,000	7,900	10
5	1,100	3,100	3,600
6	80	54,800	1,600
7	2,540	63,400	1,000
8	1,000	1,400	400
9	2,500	600	40
10	100	-	200
11	220	-	100
12	100	-	10
13	40	-	20
14	20	-	100
15	-	-	10
16	-	-	100
17	-	-	10
T o t a l	20,200	205,000	10,700

The map on page eight shows the distribution of flaxseed acreage by crop districts in the Prairie Provinces. In Manitoba, acreage is relatively heavy in District 3. Crop districts 1, 7 and 9 reported flaxseed acreage of about 2,500 acres. In Saskatchewan crop districts 7, 6, 4 and 1 contain the bulk of flaxseed acreage. Acreage in Alberta is scattered widely with the largest acreage found in districts 5, 3, 1 and 2.

British Columbia

The following table shows flaxseed acreage and production in British Columbia from 1924 to 1933:

	<u>Area</u> (acres)	<u>Production</u> (bushels)
1924	1,353	14,800
1925	1,185	12,000
1926	981	13,000
1927	921	16,600
1928	732	12,000
1929	456	7,000
1930	300	4,000
1931	275	3,000
1932	300	3,000
1933	400	4,000

Flaxseed production in British Columbia has never constituted an important factor in Canadian production.

GRADING OF FLAXSEED

The following are the statutory grades for flaxseed as established under the Canada Grain Act:

Number and name of grade	Minimum weight per bush. in pounds	Maximum of damaged grains by weight %	Standard of quality	Standard of cleanness
No. 1 C.W.	51	12 1/2	Matured, dry and sweet	Clean, commercially pure seed.
No. 2 C.W.	50	25	Matured, dry and sweet	Clean, commercially pure seed.
No. 3 C.W.	47	-	Dry, may contain 5% heat damage	Clean, commercially pure seed.
No. 4 C.W.	-	-	Dry, may contain 10% heat damage	Clean, commercially pure seed.

Grading of Western Flaxseed Crops

The following table shows the grading of the western flaxseed crops in 1928-29, 1929-30, 1930-31, 1931-32 and 1932-33:-

Grade	1928-29		1929-30		1930-31		1931-32		1932-33	
	Cars	% of Total Inspections	Cars	% of Total Inspections	Cars	% of Total Inspections	Cars	% of Total Inspections	Cars	% of Total Inspections
No. 1 C.W.	1,829	71.8	1,365	96.7	2,984	85.9	1,508	86.3	1,433	94.0
No. 2 C.W.	488	19.2	26	1.8	168	4.8	127	7.3	19	1.3
No. 3 C.W.	173	6.8	6	.4	67	1.9	21	1.2	20	1.3
No. 4 C.W.	-	-	-	-	15	.4	4	.2	3	.2
Tough	-	-	-	-	-	-	-	-	44	2.9
No Grade	37	1.5	4	.3	228	6.6	81	4.6	-	-
Rejected	19	.7	11	.8	3	.1	2	.1	-	-
Sample	-	-	-	-	7	.2	4	.2	5	.3
TOTAL (Cars)	2,546	100.0	1,412	100.0	3,472	100.0	1,747	100.0	1,524	100.0
"(Bushels)	2,991,600	-	1,540,000	-	4,131,500	-	1,913,000	-	1,714,409	-

The above figures show that a large percentage of inspections in the Western Inspection Division grade No. 1 C.W. and relatively few cars are graded below No. 2 C.W.

Estimated Disposition of Canadian Flaxseed Production
1923-24 to 1932-33.

	Available Supplies				Stocks accounted for			
	Inward carry- over	New crop	Imports 1/	Total Supplies	Exports	Outward carry- over	Total	Domestic Disappearance 2/ in Canada.
	(bushels)				(bushels)			
1923-24	203,090	7,140,000	761,479	8,104,569	3,374,000	498,509	3,872,509	4,232,060
1924-25	498,509	9,694,700	394,977	10,588,186	4,966,000	1,540,414	6,506,414	4,081,772
1925-26	1,540,414	9,297,100	19,032	10,856,546	2,953,000	2,594,056	5,547,056	5,309,490
1926-27	2,594,056	5,994,700	831,675	9,420,431	3,278,000	2,056,106	5,334,106	4,086,325
1927-28	2,056,106	4,884,600	313,830	7,254,536	2,386,000	1,296,347	3,682,347	3,572,189
1928-29	1,296,347	3,614,400	399,464	5,310,211	1,935,000	561,487	2,496,487	2,813,724
1929-30	561,487	2,860,400	1,558,993	4,980,880	415,000	636,658	1,051,658	3,929,222
1930-31	636,658	5,069,000	525,295	6,230,953	1,998,018	833,954	2,831,972	3,398,981
1931-32	833,954	2,465,000	383,720	3,682,674	250,635	1,321,358	1,571,993	2,110,681
1932-33	1,321,358	2,719,000	416,859	4,457,217	794,391	1,179,575	1,973,966	2,483,251
10 Year Average ...	1,154,198	5,373,890	560,532	7,088,620	2,235,004	1,251,846	3,486,850	3,601,770

1/ Fiscal year.

2/ Includes the factor of error in crop estimating.

Disposition of Flaxseed Production

The table on the preceding page shows the estimated disposition of Canadian flaxseed crops from 1923-24 to 1932-33. The following points may be noted:

1. Inward carry-overs were relatively large in 1925-26, 1926-27 and 1927-28 reflecting the fairly large crops harvested in 1924 and 1925. Since July 1929 initial stocks have been low, increasing in July 1932, following the exceptionally small export movement during 1931-32. The small crop in 1933 will again reduce the flaxseed carry-over to a relatively low level on July 31, 1934.

2. Production has been trending downward during the past ten years with the exception of 1930 when slightly over 5 million bushels were harvested. In 1933 production amounted to only 632,000 bushels.

3. Owing to the rather close relationship between production and consumption in Canada, imports of small amounts of flaxseed are made each year. Following the small crop of 1929, flax imports into Canada amounted to over 1 million bushels. During the past ten cereal years, flaxseed imports have averaged slightly over 500,000 bushels per year.

4. During the past ten crop years total supplies of flaxseed available for disposition have averaged 7.1 million bushels. Total supplies from 1928-29 to 1932-33 were sharply lower than from 1923-24 to 1927-28.

5. Exports of flaxseed have shown a distinct downward tendency during the past ten years. The largest exports of the past decade took place in 1924-25 when nearly five million bushels were sold externally. Since that year exports have been small.

The following table shows the trend of flaxseed supplies, exports and carry-overs during the five year periods from 1923-24 to 1927-28 and from 1928-29 to 1932-33:

<u>Crop Year</u>	<u>Total Supplies</u>	<u>Exports</u> (bushels)	<u>Carry-overs</u>
1923-24 to 1927-28	9,244,853	3,391,400	1,597,086
1928-29 to 1932-33	4,932,387	1,078,609	906,606

From 1923-24 to 1927-28 exports amounted, on the average, to 37 per cent of total available supplies while from 1928-29 to 1932-33 exports amounted to 22 per cent of total available supplies. Average carry-overs have decreased with the total supply and about the same percentage of available supplies have been carried over in the latter period as in the former.

6. The utilization of flaxseed in Canada has decreased somewhat over the past ten years. The violent fluctuations in acreage have of course affected the volume of flax needed for seed purposes, and there have been variations in the production of merchantable quality. The largest item in domestic disappearance has been the use of flaxseed in crushing plants in Canada.

Industrial Uses of Flaxseed

The following table shows the amount of flaxseed used by crushing plants in Canada^{1/}:-

	(bushels)
1928	2,592,787
1929	2,466,881
1930	2,589,605
1931	1,938,124
1932	1,861,664

1/ Data by General Manufactures Division, Dominion Bureau of Statistics.

Flaxseed Prices - No. 1 C.W. - Price per bushel at Winnipeg.

(Monthly average prices of 1 C.W. flaxseed at Winnipeg from 1907 to 1933 inclusive)

	1907	1908	1909	1910	1911	1912	1913
	(Dollars per Bushel)						
January	-	1.06	1.23	1.89	2.33	1.94	1.05
February ...	-	1.05	1.31	1.20	2.45	1.83	1.13
March	-	1.06	1.32	1.93	2.42	1.86	1.09
April	-	1.11	1.36	2.14	2.39	1.94	1.11
May	-	1.17	1.43	2.10	2.29	1.99	1.15
June	-	1.20	1.50	-	2.14	2.05	1.15
July	-	1.19	1.45	2.05	1.99	1.88	1.23
August	-	1.22	1.29	2.20	2.10	1.67	1.32
September ..	1.24	1.20	1.30	2.33	2.26	1.62	1.27
October	1.30	1.18	1.47	2.30	2.20	1.44	1.17
November	1.13	1.23	1.56	2.41	1.88	1.22	1.14
December ...	1.03	1.20	1.65	2.16	-	1.06	1.21
Average	1.23	1.16	1.38	2.04	2.22	1.71	1.15

	1914	1915	1916	1917	1918	1919	1920
	(Dollars per Bushel)						
January	1.26	1.54	2.09	2.62	3.19	3.12	4.95
February ...	1.31	1.61	2.05	2.54	3.39	3.13	5.17
March	1.36	2.14	2.02	2.62	3.84	3.48	5.38
April	1.36	1.77	1.88	2.91	3.83	3.79	4.96
May	1.36	1.76	1.70	3.08	3.76	4.02	4.96
June	1.40	1.55	1.58	2.92	3.70	4.86	4.26
July	1.44	1.48	1.73	2.88	4.21	6.08	3.66
August	1.42	1.41	1.92	3.42	4.29	6.0	3.50
September ..	1.30	1.46	1.90	3.26	4.05	4.74	3.36
October	1.13	1.63	2.35	3.02	3.42	4.25	2.92
November ...	1.25	1.79	2.61	3.16	3.63	4.74	2.31
December ...	1.29	1.85	2.58	3.05	3.33	5.01	2.03
Average	1.32	1.66	2.03	2.95	3.73	4.42	4.00

Flaxseed Prices - No. 1 C.W. - Price per bushel at Winnipeg

(Monthly average prices of 1 C.W. flaxseed at Winnipeg from 1907 to 1933 inclusive)

	1921	1922	1923	1924	1925	1926	1927
(Dollars per Bushel)							
January	1.99	1.80	2.16	2.14	2.69	2.14	1.87
February ...	1.79	2.25	2.34	2.29	2.64	2.05	1.91
March	1.76	2.34	2.44	2.13	2.50	1.92	1.90
April	1.50	2.35	2.86	2.10	2.36	1.96	1.92
May	1.68	2.45	2.49	2.16	2.44	1.93	2.00
June	1.81	2.35	2.36	2.14	2.37	1.95	1.99
July	1.90	2.40	2.23	2.28	2.22	2.08	1.95
August	2.00	2.03	2.10	2.34	2.40	2.11	2.01
September ..	1.99	2.02	2.09	2.21	2.37	2.05	1.95
October	1.78	2.13	2.11	2.33	2.33	1.94	1.88
November ...	1.75	2.08	2.08	2.35	2.29	1.91	1.83
December ...	1.73	2.08	2.00	2.49	2.26	1.88	1.80
Average	1.81	2.19	2.27	2.25	2.40	1.99	1.92

	1928	1929	1930	1931	1932	1933
(Dollars per Bushel)						
January	1.83	1.92	2.52	0.95	0.99	0.77
February	1.84	2.05	2.50	0.97	1.02	0.78
March	1.90	2.08	2.44	1.03	1.02	0.79
April	1.94	2.02	2.43	1.04	0.99	0.84
May	2.01	2.06	2.19	1.06	0.84	1.10
June	1.97	2.12	2.12	1.07	0.72	1.35
July	1.87	2.54	1.79	1.18	0.68	1.63
August	1.82	2.61	1.62	1.04	0.72	1.41
September	1.86	2.84	1.43	0.97	0.79	1.47
October	1.93	2.91	1.29	0.94	0.71	1.31
November	1.96	2.72	1.05	1.06	0.70	1.39
December	1.91	2.64	.98	.99	0.70	1.42
Average	1.90	2.38	1.86	1.00	0.82	1.19

The Export Market

The early history of Canadian exports of flaxseed is shown in the following table giving exports from 1868 to 1911:

Canadian Exports of Flaxseed

Fiscal Year	Quantities			Totals
	United Kingdom	United States	Other Countries	
				(Bushels)
1868	3,266	42,477		45,743
1869		27,108		27,108
1870	39	53,836		53,875
1871		29,314		29,314
1872		8,118		8,118
1873		887		887
1874		15,257		15,257
1875		4,648		4,648
1876		5,981		5,981
1877		4,543		4,543
1878		323		323
1879		6,584		6,584
1880	8	32,543		32,551
1881	12	14,947		14,959
1882		29		29
1883				
1884		431	6	437
1885				
1886			2	2
1887	325	364		689
1888		32		32
1889		8,284		8,284
1890				
1891		92		92
1892				
1893				
1894	390	7		397
1895	22,891	42,261		65,152
1896	51,741	10,381	696	62,818
1897	76,877	1,976		78,853
1898	9,811	5,970		15,781
1899	8,811			8,811
1900		301		301
1901	714	239		953
1902		868		868
1903				
1904		1,411		1,411
1905		314		314
1906		2,824		2,824
1907 ^x	120,132	1,450		121,582
1908	10,993	1	3	10,997
1909	626,835	12,395	54,549	693,779
1910	1,476,769	449,739	71,140	1,997,648
1911	1,019,057	1,677,062	-	2,696,119

x 9 months.

The foregoing table shows exports of flaxseed over a long period of years. It will be noted that exports were insignificant up to 1909. In these early years the United States afforded a market for the small quantities that moved abroad. In 1909, the United Kingdom became a market and in 1910 and 1911 exports of flaxseed to the United Kingdom amounted to over one million bushels. The increase in exports at this time reflected the opening up of western Canada and the cropping of "breaking" to flaxseed.

Exports During Recent Years

The following table shows exports of flaxseed from 1915-16 to 1932-33:

	<u>Bushels</u>
1915-16	3,438,784
1916-17	6,274,002
1917-18	4,589,457
1918-19	1,147,577
1919-20	801,492
1920-21	2,833,862
1921-22	2,630,623
1922-23	2,321,648
1923-24	3,374,000
1924-25	4,966,000
1925-26	2,953,000
1926-27	3,278,000
1927-28	2,386,000
1928-29	1,935,000
1929-30	415,000
1930-31	1,998,018
1931-32	250,635
1932-33	794,391

Exports of flaxseed during recent years have not been large. In 1924-25 exports amounted to 4,966,000 bushels, a record figure for post-war years. In 1926-27 exports amounted to 3,278,000 bushels. During three of the past four cereal years flaxseed exports have amounted to less than half a million bushels. The decline in exports has followed the decline in flaxseed acreage and production in Canada.

External Markets

Canada has exported flaxseed in larger proportions to the United States than to any other country. The movement of Canadian flaxseed has been affected by the following tariffs enacted by the United States:

- Underwood Tariff, October 3, 1913 to May 27, 1921 - 20 cents per bushel.
- Emergency Tariff, May 27, 1921 to September 21, 1922 - 30 cents per bushel
- Fordney-McCumber Tariff, September 21, 1922 to June 18, 1930 - 40 to 56 cents
per bushel.
- Hawley-Smoot Tariff, June 18, 1930 to date - 65 cents per bushel.

WORLD TRADE IN FLAXSEED

Flaxseed is unique in that a very large percentage of world production moves into international trade. In other words, the bulk of the world's flaxseed crop is consumed outside the country of production.

Another characteristic of trade in flaxseed is that the bulk of world exports originate in one country - the Argentine. There are only four countries which export flaxseed in significant quantities.

Import trade is not as highly concentrated as export trade, there being seven or eight countries which import in steady volume. The United Kingdom, the United States, the Netherlands, Germany and France import substantial quantities of flaxseed.

World Exports of Flaxseed

The following table shows world exports of flaxseed from 1928 to 1932:

	1928	1929	1930	1931	1932
	(bushels)				
Canada	2,949,968	850,470	1,396,818	1,044,620	367,450
India	6,835,041	10,005,461	10,455,222	4,499,949	3,087,979
New Zealand	4,102	10,397	11,641	10,476	7,866
United Kingdom	49,762	17,239	17,362	9,720	7,200
Algeria	2,275	3,748	8,039	7,744	11,118
Argentina	76,548,190	63,678,037	46,047,799	74,023,567	79,823,925
Belgium	326,074	373,229	121,389	366,316	248,459
China	9,649	1,268	22,700	169,674	18,247
Eritrea	106,610	19,515	36,975	18,574	52,722
Estonia	11,783	112,688	98,567	6,795	2,086
France	14,637	28,940	26,609	30,373	13,472
French Morocco	378,520	358,710	317,944	670,662	528,731
Germany	66,777	147,872	47,179	24,519	34,680
Hungary	25,109	77,828	263,407	21,590	16,842
Latvia.....	379,304	604,385	422,648	188,303	95,189
Lithuania	275,316	970,819	792,244	439,242	303,507
Netherlands	164,482	255,974	259,871	87,556	134,790
Poland	317,176	572,977	53,773	13,389	6,055
Roumania	6,346	42,557	77,698	384,359	206,724
Tunis	64,147	39,345	24,582	14,858	59,061
Union of Socialist Soviet Republics.	2,638	-	27,597	32,518	37,124
Uruguay	2,373,932	2,177,877	3,115,966	5,235,822	3,086,609
TOTAL	90,916,838	80,349,336	63,646,030	87,300,626	88,149,836

The foregoing table shows world exports of flaxseed from 1928 to 1932. The table shows clearly the position of the Argentine as a source of supply for importing countries. Exports of flaxseed from India have ranged from 3 to 10 million bushels. Canadian exports in recent years have constituted a very small percentage of total world trade. Uruguay exports from 2 to 5 million bushels per year.

World exports during the five years from 1928 to 1932 ranged from 91 million bushels to 64 million bushels. The extent of world trade in flaxseed has been governed by Argentine production as there is no other source where a large volume is available.

World Imports of Flaxseed

The following table shows world imports of flaxseed from 1928 to 1932:

	1928	1929	1930	1931	1932
	(bushels)				
Canada	299,736	1,374,272	809,046	346,396	455,269
Australia	796,551	1,497,861	605,043	555,352	844,954
India	632,459	875,681	736,108	-	839
United Kingdom	13,934,288	11,376,591	8,932,016	13,571,885	14,574,931
Belgium	5,007,268	4,492,387	2,991,140	6,611,093	6,579,047
Chile	146	20,267	19,507	16,724	4,724
Czechoslovakia	955,918	1,112,199	796,114	1,040,943	1,426,045
Denmark	857,493	575,697	642,931	745,025	952,718
Egypt	17,086	12,480	1,153	3,181	7,697
Estonia	75,776	41,876	2,665	1,346	8,043
Finland	241,707	314,354	141,152	123,204	135,617
France	8,271,653	8,434,382	7,498,806	10,379,836	9,265,215
Germany	17,439,663	12,428,741	9,274,057	13,404,703	17,572,264
Greece	133,971	157,568	114,362	168,509	156,324
Hungary	117,940	126,381	188,016	3,720	52,604
Italy	2,588,038	2,324,486	2,090,668	2,412,368	2,701,974
Japan ,.....	675,583	626,329	224,211	330,317	263,049
Latvia	705,141	680,016	304,496	161,222	135,278
Netherlands	16,481,504	14,195,691	10,029,574	16,524,574	17,700,235
Norway	648,206	577,666	636,557	515,294	720,857
Poland	851,450	818,404	267,426	488,260	485,173
Spain	917,550	748,100	748,946	832,486	922,341
Sweden	1,651,906	1,388,810	1,424,868	1,883,928	1,707,920
United States	17,578,535	24,242,886	12,662,410	14,480,463	7,918,820
Yugoslavia	236,081	232,522	218,275	226,011	204,378
TOTAL	91,115,649	88,685,647	61,359,547	84,826,840	84,796,316

The foregoing table shows world imports of flaxseed during the five years from 1928 to 1932. A relatively few countries import flaxseed in volume. The United Kingdom imported from 8 to 15 million bushels. The United States is a large importer, but requirements have decreased in recent years. In 1929 the United States imported 24 million bushels but in 1932 imports had decreased to 8 million bushels. Germany, France, Belgium and the Netherlands constitute the large importing countries of continental Europe. It is interesting to note that imports were well maintained in these countries in 1932. The balance of world imports of flaxseed is made up of comparatively small importations into a large number of countries. Total world imports have ranged from 91 to 61 million bushels during the five years covered by the foregoing table.

WORLD ACREAGE AND PRODUCTION OF FLAXSEED

Acreage

The following table shows the acreage sown to flaxseed in the important producing areas of the world:

	1929	1930	1931	1932	1933
	(thousand acres)				
<u>Europe</u>					
Austria	7	5	5	3	3
Belgium	68	56	36	21	27
Bulgaria	1	1	2	1	1
Estonia	79	80	45	36	41
France	109	89	25	23	27
Italy	28	24	21	12	10
Latvia	138	128	104	78	103
Lithuania	213	204	139	106	135
Poland	289	285	253	231	237
Roumania	43	44	69	54	46
Czechoslovakia	47	31	23	16	18
Total Europe ^{1/}	1,022	947	722	581	648
<u>Other Countries</u>					
Canada	382	582	627	461	244
United States	3,050	3,732	2,313	1,975	1,283
India	3,109	2,802	3,020	3,301	3,239
Argentina	5,231	7,511	8,640	7,401	6,852
Uruguay	291	402	520	337	274
Total	12,063	15,029	15,120	13,475	11,892
Grand Total ^{1/}	13,085	15,976	15,842	14,056	12,540

^{1/} Russia probably has from 5 to 7 million acres of flaxseed which are not included in the above table.

As shown by the foregoing table world acreage of flaxseed, excluding Russia, amounts to between 12 and 16 million acres. About one-half of the world's flaxseed acreage is found in the Argentine. The remaining half of world acreage is scattered throughout Europe, North America and Asia.

European flaxseed acreage is relatively small. In 1929 Europe had slightly over one million acres under flaxseed but this area has declined in the past four years. In 1933 European flaxseed acreage amounted to 648,000 acres.

Flaxseed acreage in the United States has decreased sharply during the past five years. In 1929 a total of 3,050,000 acres were sown while by 1933 flaxseed acreage had decreased to 1,283,000 acres. India has a flaxseed area of about 3,000,000 acres and last year ranked next to the Argentine as far as flaxseed acreage is concerned.

Production

The following table shows flaxseed production in the important producing countries of the world:

	1929	1930	1931	1932	1933
<u>Europe</u>	(thousand bushels)				
Austria	44	34	32	16	17
Belgium	708	417	227	202	239
Bulgaria	4	5	19	6	11
Estonia.....	420	499	253	153	244
France	1,078	749	232	224	250
Italy	265	224	202	124	90
Latvia	904	733	582	352	485
Lithuania	1,718	1,532	1,003	626	823
Poland	3,092	2,335	1,968	1,641	1,641 1/
Roumania	278	393	523	374	394
Czechoslovakia	308	169	128	95	105
Total Europe ^{2/} ..	8,819	7,090	5,169	3,813	4,299
<u>Other Countries</u>					
Canada	2,060	5,069	2,565	2,446	632
United States	15,910	21,240	11,018	11,671	6,785
India	12,877	15,200	15,120	16,640	16,120
Argentine	50,005	70,265	82,674	52,305	52,636
Uruguay	3,216	4,599	4,837	1,493	3,322
Total	84,068	116,373	116,214	84,555	79,495
Grand Total ^{1/} ..	92,887	123,463	121,383	88,368	83,794

1/ 1932 figure.

2/ Russia probably produces from 20 to 30 million bushels of flaxseed which are not included in these totals.

The above table shows that the Argentine produces about one-half of the world's flaxseed crop. During the five year period from 1929 to 1933 Argentine production averaged 62 million bushels.

European production of flaxseed is relatively small and has decreased during the past five years. In 1929 Europe, excluding Russia, produced 3,819,000 bushels of flaxseed while in 1933 production amounted to only 4,299,000 bushels.

India is the second largest flaxseed producing country in the world, excluding Russia. Production in India ranges from 13 to 17 million bushels.

Production of flaxseed has decreased in the United States. Production in 1933 amounted to 6,785,000 bushels as compared with 21,240,000 bushels produced in 1930.

World production, excluding Russia, ranged from 93 million bushels in 1929 to 123 million bushels in 1930. In 1932, world production on the same basis ranged between 84 and 88 million bushels.

LINSEED OIL, OIL CAKE AND OIL CAKE MEAL

The chief products of flaxseed are linseed oil, oil cake and oil cake meal. The Canadian position in respect to these products is shown in the following tables.

Production of Linseed Oil 1/

The following table shows the production of linseed oil in Canada from 1928 to 1932 2/:-

	<u>Gallons</u>	<u>Value</u> \$
1928	4,456,353	3,531,834
1929	4,613,922	3,720,399
1930	4,783,160	4,761,621
1931	4,250,055	2,888,859
1932	3,637,003	1,983,296

1/ Boiled, raw and special.

Oil Cake and Oil Cake Meal

The following table shows the production of oil cake and oil cake meal in Canada from 1928 to 1932 2/:-

	<u>Oil Cake</u>		<u>Oil Cake Meal</u>	
	<u>Tons</u>	<u>Value</u> \$	<u>Tons</u>	<u>Value</u> \$
1928	4,714	198,214	42,192	1,855,833
1929	2,607	123,928	41,326	2,041,336
1930	3,126	147,347	44,917	2,066,314
1931	4,171	116,328	32,451	991,602
1932	4,516	104,869	29,291	767,269

2/ Data from General Manufactures Division, Dominion Bureau of Statistics.

Imports and Exports

Linseed Oil

The following table shows Canadian imports, exports and net imports of linseed oil from 1928 to 1933:

	<u>Imports</u>	<u>Exports</u>	<u>Net Imports</u>
		(gallons)	
1928	78,498	5,892	72,606
1929	143,502	1,995	141,507
1930	118,596	3,650	114,946
1931	112,032	1,559	110,473
1932	86,171	1,288	84,883
1933	171,508	8,446	163,062

The above table shows that Canada is a net importer of linseed oil. Net imports have ranged from 72,606 gallons in 1928 to 163,062 gallons in 1933. Exports of linseed oil from Canada have been relatively small.

Oil Cake and Oil Cake Meal

The following table shows imports, exports and net exports of oil cake and oil cake meal from 1928 to 1933:

	<u>Imports</u>	<u>Exports</u> ^{1/}	<u>Net Imports</u>
		(pounds)	
1928	490,300	44,419,100	43,928,800
1929	1,106,800	51,032,100	49,925,300
1930	618,200	35,906,900	35,288,700
1931	310,000	29,817,000	29,507,000
1932	62,200	23,307,100	23,244,900
1933	207,300	12,195,500	11,988,200

1/ Includes all oil cake but mainly manufactured from linseed.

As shown by the above table, Canada is a net exporter of oil cake and oil cake meal. Exports have been declining steadily since 1929. Exports during the past six years ranged from 49,925,300 pounds in 1929 to 11,988,200 pounds in 1933.



World Imports of Linseed Oil

	1929	1930	1931	1932
	(pounds)			
Germany	42,204,176	33,921,764	15,512,854	35,291,550
Austria	9,145,939	9,101,418	12,559,714	9,164,232
Belgium	2,942,781	1,214,184	1,517,895	1,347,746
Bulgaria	1,619,279	1,352,374	1,351,272	998,192
Denmark	2,269,900	2,423,518	1,794,276	811,733
Irish Free State	2,924,708	3,130,782	2,939,695	2,851,976
Finland	4,793,920	5,841,922	6,645,942	4,887,150
France	3,544,693	5,955,428	6,979,627	3,447,056
Great Britain and Northern Ireland.	69,523,417	96,223,334	83,165,736	57,126,358
Hungary	1,474,917	1,224,542	822,974	163,096
Italy	3,454,329	2,209,510	6,434,358	4,077,400
Norway	4,311,244	1,702,370	9,183,627	2,546,061
Netherlands	1,320,196	942,651	952,128	454,685
Portugal	2,424,400	1,627,434	1,950,540	1,856,209
Sweden	911,354	1,014,060	1,444,281	1,476,680
Switzerland	13,337,726	12,977,152	19,468,593	19,661,223
Czechoslovakia	674,424	577,668	558,053	138,852
Yugoslavia	1,079,960	1,027,725	2,176,670	1,044,696
Canada	1,341,354	1,108,612	1,047,120	805,562
United States	9,958,113	2,124,656	235,387	25,126
South America	14,546,400	11,681,200	9,036,400	5,730,400
Asia	17,411,600	14,105,600	16,530,000	14,987,200
Africa	16,530,000	11,681,200	12,122,000	15,868,800
Australia	3,030,280	1,642,862	2,276,071	3,023,447
New Zealand	3,660,403	3,006,256	3,139,157	2,351,448

World Exports of Linseed Oil

	1929	1930	1931	1932
	(pounds)			
Germany	14,273,104	9,285,011	14,675,995	6,698,617
Belgium	29,797,639	29,317,365	22,709,796	34,734,158
France	5,685,218	12,255,342	10,440,568	10,382,824
Great Britain and Northern Ireland.	44,912,671	35,146,968	32,249,148	30,213,534
Netherlands	172,654,748	171,976,798	161,388,782	125,995,407
Sweden	1,750,637	1,763,200	4,223,746	1,759,233
Czechoslovakia	1,154,896	541,964	105,572	506,920
Canada	18,734	34,162	14,546	12,122
United States	3,653,350	2,875,779	2,297,890	2,081,017
British India	1,308,735	958,740	372,256	357,048
Japan	1,422,241	1,142,994	927,443	1,352,374