

# CROP COSTS AND RETURNS



## FLAXSEED

NORTH DAKOTA  
STATE UNIVERSITY

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North Dakota ranks first in the nation in the production of flaxseed. Fifty-three per cent of total United States flaxseed production in the three-year period, 1968 to 1970, was produced in North Dakota.

Flaxseed is undergoing an adjustment period in its ability to compete with other crops for farm resources. A declining price since World War II has weakened its ability to compete with other crops in early plantings during favorable weather seasons but flaxseed is still a profitable alternative in years when unfavorable weather forces late plantings and for use as a late crop for weed control.

Table 1 shows the planted acreage, yield per planted acre, and production of flaxseed in North Dakota for the five-year period, 1966 to 1970.

TABLE 1. PLANTED ACREAGE, YIELD PER PLANTED ACRE, AND PRODUCTION OF FLAXSEED IN NORTH DAKOTA, 1966-1970

Year	Planted Acreage	Yield Per Planted Acre	Production In Bushels
1966	1,521,000	8.7	13,203,000
1967	1,202,000	7.8	9,381,000
1968	1,190,000	11.6	13,860,000
1969	1,488,000	12.2	18,188,000
1970 <sup>a</sup>	1,711,000	9.6	16,440,000

<sup>a</sup>Preliminary.

Source: Statistical Reporting Service, United States Department of Agriculture, Fargo, North Dakota.

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During the ten-year period, 1961 to 1970, total use of flaxseed has declined, while the total production has increased (Table 2). In six of the 10 years production has exceeded disappearance. Linseed oil, the major use for flaxseed, contributed four-fifths of total oils used in drying-oil products during World War II. It currently supplies less than two-fifths to a 20 per cent smaller market. The major market losses were to soybean oil and tall oil, a resinous by-product from the manufacture of chemical wood pulp.

The build up in total supplies in recent years has made it necessary for the Commodity Credit Corporation to acquire stocks of flaxseed under the nonrecourse loan program, so, the price support loan rate has tended to set the market price.

TABLE 2. FLAXSEED: SUPPLY AND DISAPPEARANCE IN THE UNITED STATES, 1961-1971

Year	Supply			Disappearance		Total Disappearance
	July 1 Stocks	Production	Total Supply	Domestic Use	Exports	
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1961	5.3	22.2	27.5	22.4	1.5	23.9
1962	3.6	32.2	35.8	23.1	4.3	27.4
1963	8.4	31.0	39.4	22.7	3.6	26.3
1964	13.1	24.4	37.5	20.1	6.5	26.6
1965	10.9	35.4	46.3	25.7	5.3	31.0
1966	15.3	23.4	38.7	21.9	7.5	29.4
1967	9.3	20.0	29.3	17.3	5.0	22.3
1968	7.0	27.0	34.0	14.5	9.7	24.2
1969	9.8	35.1	44.9	17.2	5.7	22.9
1970	22.0	30.0	52.0	20.0	4.0	24.0
1971	28.0 <sup>a</sup>					

<sup>a</sup>Preliminary.

Source: United States Department of Agriculture, Economic Research Service, *Fats and Oils Situation*, FOS-256, Washington, D. C., January, 1971, p. 19.

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TABLE 3. FLAXSEED: COSTS AND RETURNS BY AREAS OF NORTH DAKOTA

Crop Production and Cost Inputs	WESTERN		WEST CENTRAL		EAST CENTRAL		RED RIVER VALLEY	
	Continuous Crop <sup>b</sup>		Continuous Crop <sup>b</sup>		Continuous Crop <sup>b</sup>		Continuous Crop <sup>b</sup>	
	Budget	Yours	Budget	Yours	Budget	Yours	Budget	Yours
1 Yield Per Acre	12.5		14.0		15.0		17.0	
2 Unit Price	\$ 2.36		\$ 2.41		\$ 2.46		\$ 2.50	
3 GROSS RETURNS	29.50		33.74		36.90		42.50	
Direct Production Costs								
4 Seed	\$ 3.75		\$ 3.75		\$ 3.75		\$ 3.75	
5 Fertilizer	2.62		2.98		3.50		3.68	
6 Spray	.40		.40		.40		.40	
7 Repairs	2.84		3.23		3.29		3.35	
8 Fuel and Oil	.90		1.19		1.18		1.22	
9 Interest on Operating Capital	.62		.65		.68		.68	
10 Crop Insurance	1.59		1.37		1.33		.96	
11 Custom Cost	1.65		1.65		1.65		1.65	
12 TOTAL DIRECT COSTS	\$14.37		\$15.22		\$15.78		\$15.69	
13 RETURN OVER DIRECT COSTS	\$15.13		\$18.52		\$21.12		\$26.81	
Fixed Costs								
14 Land Cost	\$ 6.70		\$ 8.00		\$10.55		\$17.60	
15 Machinery Depreciation	3.26		3.62		3.72		3.76	
16 Interest on Machinery, Housing and Insurance	2.75		3.87		3.00		3.61	
17 TOTAL FIXED COSTS	\$12.71		\$15.49		\$17.27		\$24.97	
18 OPERATOR LABOR & MANAGEMENT RETURN	\$ 2.42		\$ 3.03		\$ 3.85		\$ 1.84	
19 LABOR REQUIREMENT PER ACRE IN HOURS	1.27		1.71		1.71		1.77	

<sup>a</sup>These costs and returns should not be construed to be the average for North Dakota farmers. Yields and input levels used are higher than the average for each area.

<sup>b</sup>Continuous cropping assumes summerfallow every third year in western North Dakota to every fifth or sixth year in the Red River Valley.

The state has been divided into four areas--western, west central, east central, and the Red River Valley (Figure 1). Costs and returns are presented in Table 3 for each of the four areas. The input and output data used are what is being achieved on well-managed farms in each area. It is assumed in the flaxseed budgets that the crop would be planted at the optimum time and put on relatively clean land. Farmers in localized areas of the state bale flaxseed straw which is sold to the paper making industry, but no allowance is made for this in the costs and returns budgets.

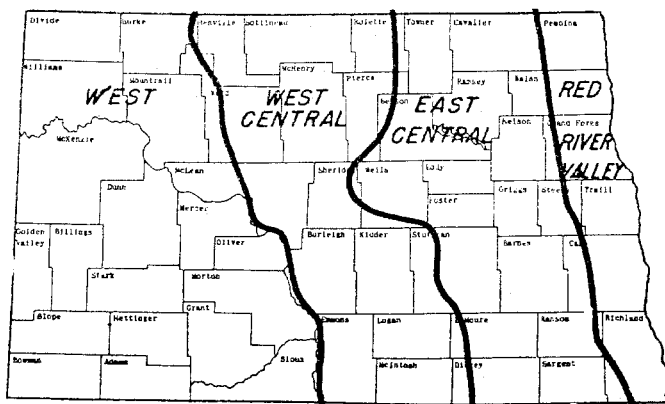


FIGURE 1. State Areas Used in Costs and Returns Data

The costs and returns data presented in Table 3 can help serve as a guide in making production decisions. The size of farm in cropland acres used in determining the production costs was 1,159 in the western area, 1,065 in the west central and east central areas, and 855 in the Red River Valley.

#### EXPLANATION OF COST AND RETURN DATA IN TABLE 3

Line 1, Yields: The yields shown are what can be expected using recommended practices and the levels of inputs shown in Table 3.

Line 2, Price: The flaxseed price used is the estimated support level for 1971 in each of the areas. Since production is expected to exceed disappearance, the market price will be closely tied to the price support loan rate.

Line 4, Seed: The cost of seed includes purchasing certified seed each year.

Line 5, Fertilizer: Rates used were recommended rates for flaxseed based on very low to low phosphate test and low nitrogen fertility rating. Although only about 25 to 30 per cent of the farmers fertilize flax, the crop does remove fertility from the soil which needs to be replaced and should be charged against the crop grown.

Line 6, Spray: The cost of spray is for spraying once with MCP.

Line 7, Repairs: Machinery repair costs were estimated on a percentage of the new cost based on agricultural engineering studies.

Line 8, Fuel and Oil: Nebraska tractor tests were used to calculate fuel consumption. Local fuel prices were used in arriving at the value. Diesel tractors and gasoline self-propelled harvesting machines were assumed in calculating fuel costs.

Line 9, Interest on Operating Capital: This cost was figured at 9 per cent of the direct production costs. The time period was six months.

Line 10, Crop Insurance: The crop insurance premium used insures 45 per cent of the gross returns. The premium rate used varied by area of the state depending upon the risk as established by insurance companies.

Line 11, Custom Cost: This cost is the application of herbicides by airplane and one broadcast operation of nitrogen fertilizer.

Line 14, Land Cost: The charge for land is the average net return that North Dakota landlords received in 1969. This amounted to 7.3 per cent of the current market value of cropland (Table 4).

TABLE 4. CROPLAND VALUE, LAND CHARGE, AND LAND TAXES USED IN CALCULATING LAND COSTS BY AREAS OF NORTH DAKOTA

Area	Land Value	Land Charge	Land Taxes	Total Land Cost
Western	\$ 80	\$ 5.85	\$ .85	\$ 6.70
West Central	95	6.95	1.05	8.00
East Central	125	9.15	1.40	10.55
Red River Valley	210	15.35	2.25	17.60

Line 15, Depreciation: Depreciation is based on normal machinery life using the straight line method of calculating depreciation.

Line 16, Interest on Machinery, Housing, and Insurance: These fixed costs were calculated on the basis of 10 per cent of the average machinery investment.

Line 18, Operator Labor and Management Return: Costs are included for all the resources required to produce flaxseed except labor and management. When the total costs--direct plus fixed--are subtracted from the gross income, this gives a return to the farm operator for his labor and management. No hired labor is assumed in the costs presented.

Line 19, Labor Requirement Per Acre in Hours: The labor requirements include the direct hours of labor to prepare the seedbed, seed, harvest, and market the crop.