

# 2022 Costs and Returns for Non-irrigated Flax in Utah



## Introduction

Enterprise budgets are created to help a grower to understand all the costs and returns associated with producing a crop and are usually expressed on a per unit basis, such as per acre. The budget in Table 1 (see Appendix: Budget Tables) contains sample costs and returns to establish and produce non-irrigated flax in Utah. It is intended to be a guide used to estimate income and expenses, list inputs and production practices, and provide a framework for the whole farm plan. The sample budget may list production practices, inputs, and services or field operations that the farm does not use. If this is the case, delete practices and refigure the totals. If a grower has additional field operations or inputs, add them to the budget along with their costs to get a more accurate production cost estimate for growing flax on the farm. Figure 1 shows estimated receipts, costs, and profit for raising dryland flax in Utah.



Figure 1. Estimated

Receipts, Costs, and Profit for a Non-irrigated Flax Enterprise

**Farm.** The 2017 Census of Agriculture shows the representative farm consists of 1,028 acres of farmland that is both leased and owned, on which 200 acres are cultivated for flax production, and the remaining acres consist of dryland wheat and safflower. The market value for dryland ground varies widely by area, rainfall, and soil type. In this budget, the land is valued at \$1,617

per acre based on values obtained from AcreTrader ([acretrader.com](http://acretrader.com)) and reports from the U.S. Department of Agriculture (USDA) National Agricultural Statistics Service (NASS).

**Receipts.** A flax production average of 1,325 pounds per acre used for the publication was determined by interviews with flax growers and crop advisors. The flax prices were determined from interviews with flax seed buyers and growers.

**Inputs and Services.** Inputs and services include crop insurance, fertilizer, pesticides, seed, and seasonal employees. Input and chemical prices are determined from interviews with seed, fertilizer, and chemical dealers.

**Seasonal Employees.** One seasonal employee is hired for 2,500 hours per year at a base wage plus FICA rate of \$19.28/hour, including the employer's share of payroll tax. The wage rate is calculated as 110% of the USDA's Farm Labor Survey reported hourly wage rate for the region to account for payroll taxes and current trends (NASS, 2022). The total annual labor cost is \$48,200 for the 1,028 acres, resulting in an average cost per acre of \$46.89.

**Field Operations and Operating Interest.** Field operations include things like tillage, seeding, harvesting, and hauling. The practices described are considered typical for a well-managed farm in the region as determined by interviews with producers and agribusiness representatives. Costs, materials, and practices do not apply to all situations, as management and cultural practices vary among growers and regions. An interest rate of 7% is charged for 6 months on the capital needed to produce this crop.

**Machinery Costs and Overhead.** Machinery operation costs are determined by using average established custom rates to cover machine and equipment operating costs. These rates were obtained from the 2022 Iowa Farm Custom Rate Survey and the 2022 Nebraska Custom Farm Rates publications and conversations with local growers and chemical dealers. Cash overhead consists of various cash expenses paid out during the year. These costs include property taxes, interest on land, office expenses, liability insurance, property insurance, and accounting/legal costs.

## Financial and Production Terminology

**Fixed Costs (Overhead).** These are costs that take place irrespective of production. Fixed costs include depreciation

on equipment and buildings, property taxes, interest on land, equipment, or buildings as well as overhead, etc.

**Variable Costs (Operating).** Variable or operating costs are those costs that change with production. These costs include fertilizer, seed, chemicals, and other inputs which are directly associated with production. Figure 2 shows the various percentages of the budget input and services costs.

**Net Income or Profit.** Sometimes referred to as net profit, this is the operation's total sales per acre minus total costs per acre (Table 2).

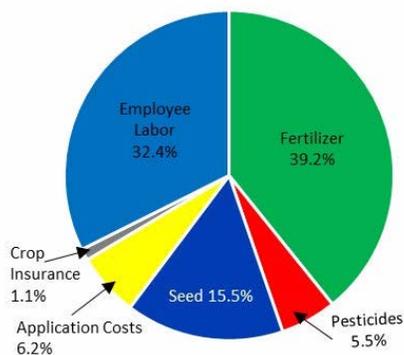


Figure 2. Percent

#### Inputs and Services Costs

**Net Income or Total Sales Ratio.** A profitability ratio is calculated as net income per acre divided by total sales per acre. The net income or profit ratio found in Table 3 is very useful in determining profitability and is displayed as a percentage. A profit margin of 35.1% means the farm has a net income of 35.1 cents for every dollar of sales.

**Contribution Margin.** Table 4 represents the portion of sales revenue from the operation not consumed by variable costs and so contributes to the coverage of fixed costs and net profit.

**Contribution Margin Ratio.** This ratio is a percentage of total sales not consumed by variable costs. For example, a contribution margin ratio of 43.9% from Table 5 means that for each dollar increase in sales, the total contribution margin will increase by 43.9 cents.

**Production or Yield Breakeven.** The production breakeven or yield breakeven is the point at which total expenses and total revenue are equal, or it is the pounds per acre needed to cover the costs of the enterprise. In the example budget at the bottom of Table 1, it shows that a grower would need to produce 860 pounds of flax per acre to pay all of their expenses. They would need to produce at least 743 pounds to pay for input, services, and field operations and another 117 pounds to pay for

the fixed costs, totaling 860 pounds of flax per acre. Using Table 6 and supposing they were offered a contract price of \$0.41 per pound at the beginning of the growing season and estimating that their total production costs are closer to \$337 per acre, they would only need to produce 822 pounds of flax per acre to break even, and the rest of the yield per acre would be profit.

**Price Breakeven.** Break-even analysis is a tool used to determine the relationship between the revenue and costs associated with an enterprise. Price breakeven represents the price point that must be reached to cover the costs of the enterprise. In the example budget at the bottom of Table 1, a grower would need to sell flax for \$0.29 per pound to break even and pay all the expenses. Of the 29 cents, 25 cents would pay for the operating costs, with 4 cents required to pay for the fixed costs.

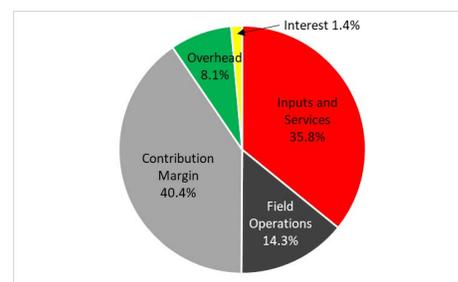


Figure 3. Percent

#### Inputs and Services, Field Operations, and Overhead Costs, etc.

Table 7 shows different scenarios based on production yields and total costs. Assume the farm typically produces 1,325 pounds of flax per acre and the total production costs are still about \$387 per acre. According to the table, a grower would need to sell flax for 29 cents a pound to break even, and anything over that would be a profit to the farm. However, if dryland or non-irrigated flax production is only about 825 pounds per acre and the total costs are still \$387 per acre, then a grower would need to sell the flax for 47 cents a pound to break even. Using this same chart and assuming the total costs of production were closer to \$337 per acre and the yield was 1,575 pounds, a flax seed grower would only need to sell it for 21 cents per pound to break even, and anything above 21 cents would be a profit. To use this chart properly, the grower needs to know their average flax yields and total production costs for growing flax to figure out the break-even price.

Figure 3 shows the different percentages for the inputs and services, field operations, overhead, interest, and contribution margins for growing flax on dryland ground with this budget in its present form.

# Budget Tables

**Table 1. 2022 Costs and Returns for Non-Irrigated Flax**

	Quantity per acre	Unit	Price per unit	Value per acre	Total
<b>Receipts</b>					
Flax	1,325	Pounds	\$0.45	\$596.25	
<b>Subtotal receipts</b>					<b>\$596.25</b>
<b>Inputs and services</b>					
<b>Fertilizer</b>					
32-0-0 UAN - Preplant	50	Units	\$1.14	\$56.77	
15-40-0-10 Starter fertilizer	50	Units	\$0.84	\$42.22	
Application	1	Acre	\$7.65	\$7.65	
<b>Herbicides</b>					
Glyphosate	24	Ounces	\$0.33	\$7.97	
Spartan charge	6	Ounces	\$2.78	\$16.68	
Bison	1	Pint	\$10.57	\$10.57	
Clethodim 2E	6	Ounces	\$0.68	\$4.05	
Application	2	Acre	\$7.80	\$15.60	
<b>Seed</b>	45	Pounds	\$0.50	\$22.50	
<b>Seasonal employees</b>	1	Acre	\$46.89	\$46.89	
<b>Crop insurance (NAP)</b>					\$1.63
<b>Subtotal inputs and services</b>					<b>\$232.53</b>
<b>Field operations</b>					
Summer chisel plow	1	Acre	\$20.45	\$20.45	
Spring bed prep-field cultivator	1	Acre	\$15.90	\$15.90	
Planting	1	Acre	\$19.50	\$19.50	
Harvesting	1	Acre	\$34.69	\$34.69	
Hauling	24.5	Bushels	\$0.08	\$1.96	
<b>Subtotal field operations costs</b>					<b>\$92.50</b>
<b>Interest on operating capital</b>					
Rate	7.00%	Term	0.5	Principle	\$267.53
					\$9.36
<b>Total input, service and field operation costs</b>					<b>\$334.39</b>
<b>Contribution margin</b>					<b>\$261.86</b>
<b>Overhead</b>					
Accounting, liability insurance, vehicle cost, office expense				\$17.50	
Cash lease for non irrigated farmland (includes property tax)				\$35.00	
<b>Total overhead</b>					<b>\$52.50</b>
<b>Total costs</b>					<b>\$386.89</b>
<b>Net income to owner (for unpaid management and risk)</b>					<b>\$209.36</b>
<b>Production or yield breakeven (lb/acre)</b>					
Input, services, and field operations	743	Operating costs			\$0.25
Overhead (fixed costs)	117	Fixed costs			\$0.04
<b>Total costs</b>	<b>860</b>	<b>Total costs</b>			<b>\$0.29</b>

**Table 2. Net Income (Total Sales per Acre/Total Costs per Acre)**

Total costs per Acre	\$496	\$546	\$596	\$646	\$746
\$287	\$209.36	\$259.36	\$309.36	\$359.36	\$459.36
\$337	\$159.36	\$209.36	\$259.36	\$309.36	\$409.36
\$387	\$109.36	\$159.36	\$209.36	\$259.36	\$359.36
\$437	\$59.36	\$109.36	\$159.36	\$209.36	\$309.36
\$487	\$9.36	\$59.36	\$109.36	\$159.36	\$259.36

**Table 3. Net Income/Total Sales Ratio (Net Income per Acre/Total Sales per Acre)**

Net income/acre	\$496	\$546	\$596	\$646	\$746
\$259	52.3%	47.5%	43.5%	40.1%	34.8%
\$234	47.2%	42.9%	39.3%	36.3%	31.4%
\$209	42.2%	38.3%	35.1%	32.4%	28.1%
\$200	40.4%	36.7%	33.6%	31.0%	26.8%
\$195	39.4%	35.8%	32.8%	30.2%	26.2%

**Table 4. Contributions Margin (Total Sales per Acre/ Variable Costs per Acre)**

Variable costs per acre	\$496	\$546	\$596	\$646	\$696
\$234	\$261.86	\$311.86	\$361.86	\$411.86	\$461.86
\$284	\$211.86	\$261.86	\$311.86	\$361.86	\$411.86
\$334	\$161.86	\$211.86	\$261.86	\$311.86	\$361.86
\$384	\$111.86	\$161.86	\$211.86	\$261.86	\$311.86
\$434	\$61.86	\$111.86	\$161.86	\$211.86	\$261.86

**Table 5. Contribution Margin Ratio (Contribution Margin per Acre/Total Sales per Acre)**

Contribution margin	\$496	\$546	\$596	\$646	\$696
\$362	72.9%	66.2%	60.7%	56.0%	52.0%
\$312	62.9%	57.1%	52.3%	48.3%	44.8%
\$262	52.8%	47.9%	43.9%	40.5%	37.6%
\$212	42.7%	38.8%	35.5%	32.8%	30.4%
\$162	32.6%	29.6%	27.1%	25.0%	23.2%

**Table 6. Production or Yield Breakeven (Total Costs per Acre/Flax Price per lb)**

Price per pound	\$337	\$362	Total costs \$387	\$412	\$437
\$0.49	688 lb	739 lb	790 lb	841 lb	892 lb
\$0.47	717 lb	770 lb	823 lb	875 lb	926 lb
\$0.45	746 lb	804 lb	860 lb	915 lb	971 lb
\$0.43	783 lb	842 lb	900 lb	958 lb	1016 lb
\$0.41	822 lb	883 lb	944 lb	1005 lb	1066 lb

**Table 7. Price Breakeven (Total Costs per Acre/Flax Yield per Acre)**

Yield per acre	\$337	\$362	Total costs \$387	\$412	\$437
1825	\$0.18	\$0.20	\$0.21	\$0.23	\$0.24
1575	\$0.21	\$0.23	\$0.25	\$0.26	\$0.28
1325	\$0.25	\$0.27	\$0.29	\$0.31	\$0.33
1075	\$0.31	\$0.34	\$0.36	\$0.38	\$0.41
825	\$0.41	\$0.44	\$0.47	\$0.50	\$0.53

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