



February 2015

AG/Agribusiness/2015-05pr

2015 Costs and Returns for Non-Irrigated Safflower, Northern Utah

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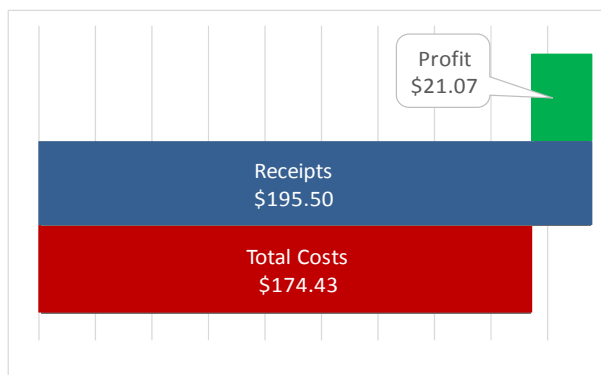


Figure 1. Estimated Receipts, Costs and Profit for a Non-irrigated Safflower Enterprise.

INTRODUCTION

Enterprise budgets are the building blocks of a farm or ranch. They represent estimates of income and expenses for a specific period of time using a set of production practices and inputs for that enterprise.

The budget in Table 1 on the page 3 contains sample costs and returns to establish and produce non-irrigated safflower in Northern 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.

Farm. The representative farm consists of 2,400 acres of owned land on which 800 acres are cultivated for safflower production and the remaining acres consisting of reduced tillage summer fallow and winter wheat production. The market value for non-irrigated agricultural land varies

widely by area and soil type. In this budget, land is valued at \$450 per acre.

Receipts. Prices were determined from interviews with safflower brokers and growers. Safflower production average of 850 pounds per acre is determined by interviews with local producers and crop advisors.

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 pesticide dealers.

Seasonal Employees. One seasonal employee is hired a total of 1,250 hrs. per year and is paid at the rate of \$13.10/hr. including employer's share of payroll tax (USDA ERS). The total annual labor cost is \$16,375 for the 2,400 acre farm resulting in an average cost per acre of \$8.17.

Field Operations and Operating Interest. The practices described are considered as typical for well-managed dry farms in the region as determined by interviews with producers and agribusiness representatives. The use of specific products in this budget are not necessarily the recommendations of Utah State University. Costs, materials, and practices are not applicable to all situations as management and cultural practices vary among growers and regions. An interest rate of 5% is charged for 6 months on 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. (Drollette 2010) and (Patterson and Painter 2011). 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

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

Contribution Margin Ratio. A percentage total sales that is not consumed by variable costs. For example, a contribution margin ratio of 22.2% means that for each dollar increase in sales, total contribution margin will increase by 22.2 cents.

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.

Net Income or Profit. Sometimes referred to as net profit, is the operation's total sales of minus total costs.

Net Income or Profit Ratio. A ratio of profitability calculated as net income per acre divided by total sales per acre. The net income or profit ratio is very useful in determining profitability and is displayed as a percentage. For example, a profit margin of 11% means the farm has a net income of 11 cents for every dollar of sales.

Price Breakeven. Breakeven analysis is a tool used to determine the relationship between the revenue and costs associated with an enterprise. Price breakeven represents the price point which must be reached to cover costs of the enterprise.

Production or Yield Breakeven. This is the production point which total expenses and total revenue are equal to the bushels or tons needed to cover costs of the enterprise.

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.

Calculating Your Own Budget with Excel. To download a free Excel spreadsheet of this and other crop and livestock enterprise budgets, go to <http://extension.usu.edu/boxelder> and select *Agriculture* and click on *Crop/Livestock Budgets* under *Resources*

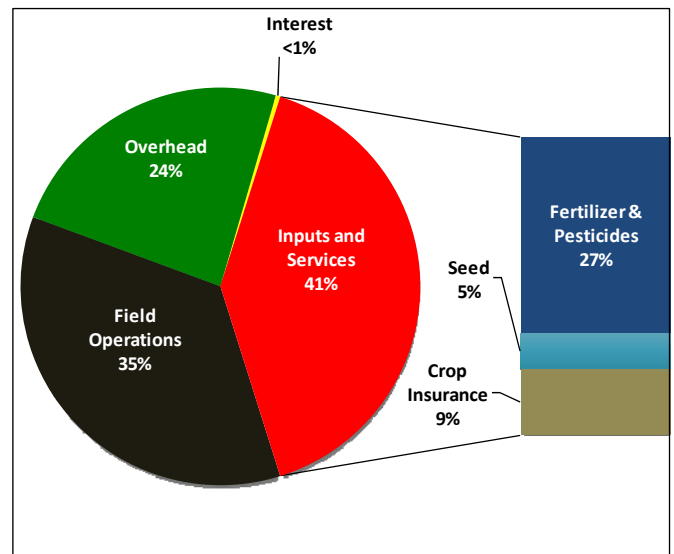


Figure 2. Percent Input, Field Operations and Overhead Costs.

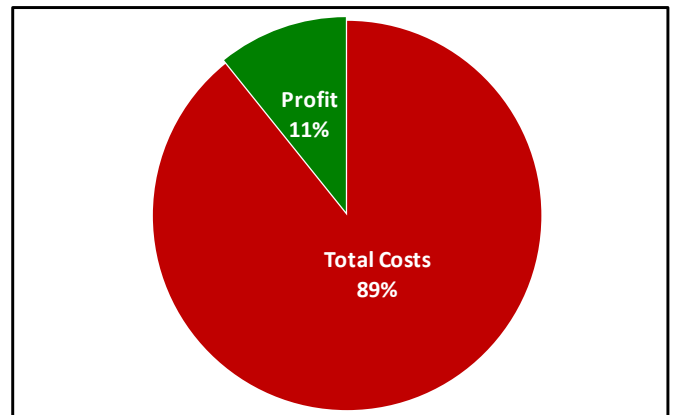


Figure 3. Net Income or Profit Margin Ratio.

REFERENCES

- Drollette, S.A. (2010). Custom Rates Survey Report 2009/2010. Department of Applied Economics, Utah State University. AG/ECON/2010-02RM.
- Patterson, P.E. and Painter, K. (2011). Custom Rates for Idaho Agricultural Operations 2010-2011. University of Idaho Extension. BUL 729.
- USDA ERS. (2011) Hourly and annual earnings, selected occupations, May 2011. Online at: <http://www.ers.usda.gov/topics/farm-economy/farm-labor/background.aspx#wages>

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Table 1. 2015 Costs and Returns for Non-irrigated Safflower with a Wheat-Fallow-Safflower-Fallow Rotation.

Receipts	Quantity per acre	Unit	2015			2014			
			Price/Unit	Value/Acre	Total	Price/Unit	Value/Acre	% Change	
Safflower	850	lbs	\$0.23	\$195.50		\$0.28	\$233.75		
Subtotal Receipts				\$195.50		\$233.75	-16.4%		
Inputs and Services									
Crop Insurance				\$15.00		\$15.00			
Fertilizer									
46-0-0 Urea	40	units	\$0.56	\$22.45		\$0.60	\$23.80	-5.7%	
Application	1	acre	\$4.50	\$4.50		\$4.50	\$4.50	0.0%	
Herbicides									
Sonalan (ethalfluralin)	2	pint	\$6.55	\$13.11		\$5.94	\$11.88	10.4%	
Application	1	acre	\$4.50	\$4.50		\$4.50	\$4.50	0.0%	
Seed	17	lbs	\$0.38	\$6.46		\$0.47	\$7.99	-19.1%	
Seasonal Employees	1	acre	\$8.17	\$8.17		\$8.17	\$8.17	0.0%	
Interest on Operating Capital	Rate '15	Term	Principle		Rate '14	Principle			
	5.0%	0.50/yr	\$24.67	\$0.62	5.5%	\$24.17	\$0.60	2.0%	
Subtotal Inputs and Services				\$74.81		\$76.44	-2.1%		
Field Operations		Times	Unit	per Unit	Acre	per Unit	Acre		
Fall Chisel Plow	1	acre	\$11.34	\$11.34		\$12.00	\$12.00	-5.5%	
Spring Chisel Plow	1	acre	\$11.34	\$11.34		\$12.00	\$12.00	-5.5%	
Planting	1	acre	\$9.45	\$9.45		\$10.00	\$10.00	-5.5%	
Harvest	1	acre	\$19.85	\$19.85		\$21.00	\$21.00	-5.5%	
Hauling	850	lbs	\$0.01	\$7.65		\$0.01	\$7.65	0.0%	
Subtotal Field Operations Costs				\$59.63		\$62.65	-4.8%		
Total Input, Services and Field Operation Costs				\$134.43		\$139.09	-3.4%		
Contribution Margin				\$61.07		\$94.66	-35.5%		
Overhead									
Accounting, liability insurance, vehicle cost, office expense				\$10.00		\$10.00			
Cash lease/opportunity cost for land				\$30.00		\$30.00			
Total Overhead				\$40.00		\$40.00			
Total costs				\$174.43		179.09	-2.6%		
Net Income to Owner (for unpaid management and risk)				\$21.07		54.66	-61.5%		
Production or Yield Breakeven	2015	2014	% Change	Price Breakeven			2015	2014	% Change
Pounds Required to Cover Variable Costs	584 lbs.	506 lbs.	+15.6%	Operating Costs (\$/lb)			\$0.16	\$0.16	-3.4%
Pounds Required to Cover Fixed Costs	174 lbs.	145 lbs.	+19.6%	Fixed Costs (\$/lb)			\$0.05	\$0.05	+0.0%
Pounds Required to Cover Total Costs	758 lbs.	651 lbs.	+16.5%	Total Costs (\$/lb)			\$0.21	\$0.21	-2.6%

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

Total Costs per Acre	Total Sales Per Acre				
	\$156	\$176	\$196	\$216	\$236
\$154	\$1	\$21	\$41	\$61	\$81
\$164	-\$9	\$11	\$31	\$51	\$71
\$174	-\$19	\$1	\$21	\$41	\$61
\$184	-\$29	-\$9	\$11	\$31	\$51
\$194	-\$39	-\$19	\$1	\$21	\$41

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

Net Income/Acre	Total Sales per Acre				
	\$156	\$176	\$196	\$216	\$236
\$41	26.4%	23.4%	21.0%	19.1%	17.4%
\$31	20.0%	17.7%	15.9%	14.4%	13.2%
\$21	13.5%	12.0%	10.8%	9.8%	8.9%
\$11	7.1%	6.3%	5.7%	5.1%	4.7%
\$1	0.7%	0.6%	0.5%	0.5%	0.5%

Table 4. Contribution Margin (Total Sales per Acre - Variable Costs per Acre)

Variable Costs per Acre	Total Sales per Acre				
	\$96	\$146	\$196	\$246	\$296
\$114	-\$19	\$31	\$81	\$131	\$181
\$124	-\$29	\$21	\$71	\$121	\$171
\$134	-\$39	\$11	\$61	\$111	\$161
\$144	-\$49	\$1	\$51	\$101	\$151
\$154	-\$59	-\$9	\$41	\$91	\$141

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

Contribution Margin	Total Sales per Acre				
	\$156	\$176	\$196	\$216	\$236
\$81	52.1%	46.2%	41.5%	37.6%	34.4%
\$71	45.7%	40.5%	36.4%	33.0%	30.2%
\$61	39.3%	34.8%	31.2%	28.3%	25.9%
\$51	32.8%	29.1%	26.1%	23.7%	21.7%
\$41	26.4%	23.4%	21.0%	19.1%	17.4%

Table 6. Production or Yield Breakeven (Total Costs per Acre / Safflower Price per Pound)

Price per/Pound	Total Costs				
	\$154	\$164	\$174	\$184	\$194
\$0.280	552 lbs.	587 lbs.	623 lbs.	659 lbs.	694 lbs.
\$0.255	606 lbs.	645 lbs.	684 lbs.	723 lbs.	762 lbs.
\$0.230	671 lbs.	715 lbs.	758 lbs.	802 lbs.	845 lbs.
\$0.205	753 lbs.	802 lbs.	851 lbs.	900 lbs.	948 lbs.
\$0.180	858 lbs.	914 lbs.	969 lbs.	1,025 lbs.	1,080 lbs.

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

Yield per/Acre	Total Costs				
	\$154	\$164	\$174	\$184	\$194
950 lbs.	\$0.16/lb.	\$0.17/lb.	\$0.18/lb.	\$0.19/lb.	\$0.20/lb.
900 lbs.	\$0.17/lb.	\$0.18/lb.	\$0.19/lb.	\$0.20/lb.	\$0.22/lb.
850 lbs.	\$0.18/lb.	\$0.19/lb.	\$0.21/lb.	\$0.22/lb.	\$0.23/lb.
800 lbs.	\$0.19/lb.	\$0.21/lb.	\$0.22/lb.	\$0.23/lb.	\$0.24/lb.
750 lbs.	\$0.21/lb.	\$0.22/lb.	\$0.23/lb.	\$0.25/lb.	\$0.26/lb.