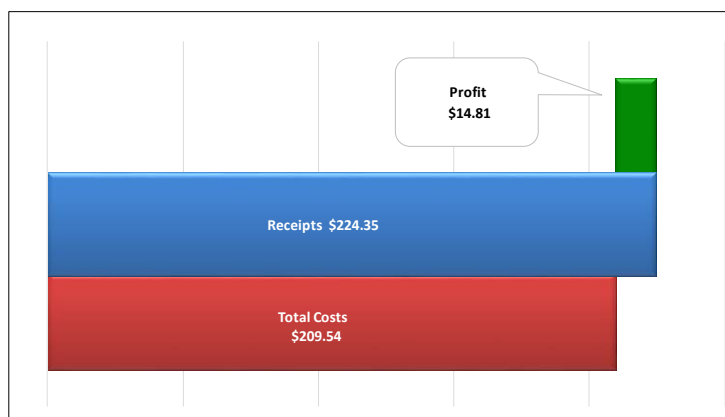


2015 Costs and Returns for Non-Irrigated Hard Red Winter Wheat, Northern Utah

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Production average of 35 bushels per acre is determined by interviews with local producers and crop advisors.

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

Seasonal Employees. Two seasonal employees are hired a total of 2,500 hrs. per year and are paid a base wage plus FICA at the rate of \$13.07/hr. including employer's share of payroll tax (USDA ERS) The total annual cost is \$32,680 for the 2,400 acre dryfarm. The average labor cost per acre is estimated at \$13.62.

Field Operations and Operating Interest. The practices described are not the recommendations of Utah State University, but rather the production practices and materials considered as typical of a well-managed farm in the region, as determined by interviews with producers and agribusiness representatives. Costs, materials, and practices are not applicable to all situations as management and cultural practices vary among growers and regions. The 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. These rates were obtained from two publications: 1) USU Custom Rates Survey Report 2009/2010 (Drollette 2010). 2) Custom Rates for Idaho Agricultural Operations 2010-2011 (Patterson and Painter 2011). Fuel costs were significantly lower at the time of this printing, as a result field operation costs were lowered by 5.5%

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 following page contains sample costs and returns to establish and produce dryland hard red winter wheat (HRW) in Box Elder County. 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 farmland that is both leased and owned on which 800 acres are dryland wheat, 800 acres safflower and 800 acres summer fallow. 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. Commodity prices were determined from an average of December 2014 and January 2015 weekly Utah Department of Agriculture and Food Market News Reports.

Table 1. 2015 Costs and Returns for Dryland Hard Red Winter Wheat.

Receipts	Quantity per Acre	Unit	2015 Values			2014 Values			
			Price/Unit	Value/Acre	Total	Price/Unit	Value/Acre	% Change	
HRW Wheat (12% Protein)	35	bushels	\$6.41	\$224.35		\$8.56	\$299.60		
Subtotal Receipts				\$224.35		\$299.60	-25.1%		
Inputs and Services									
Insurance									
Crop Insurance	1	acre	\$15.00	\$15.00		\$15.00	\$15.00	0.0%	
Fertilizer									
Anhydrous Ammonia	45	units	\$0.60	\$26.79		\$0.63	\$28.35	-5.5%	
N-Serve	1	pt	\$3.08	\$3.08		\$6.88	\$6.88	-55.3%	
Application	1	acre	\$4.50	\$4.50		\$4.50	\$4.50	0.0%	
Herbicides									
Ally	0.75	oz	\$7.08	\$5.31		\$13.62	\$10.22	-48.0%	
Application	1	acre	\$4.50	\$4.50		\$4.50	\$4.50	0.0%	
Seed	65	pounds	\$0.18	\$11.70		\$0.20	\$13.00	-10.0%	
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	\$28.10	\$0.70	0.055	\$38.50	\$1.06	-33.6%	
Subtotal Inputs and Services				\$79.74		\$91.67	-13.0%		
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%
Weeding		2	acre	\$7.56	\$15.12		\$8.00	\$16.00	-5.5%
Planting		1	acre	\$9.45	\$9.45		\$10.00	\$10.00	-5.5%
Harvest		1	acre	\$21.55	\$21.55		\$22.80	\$22.80	-5.5%
Storage		35	bushels	\$0.20	\$7.00		\$0.20	\$7.00	0.0%
Hauling		35	bushels	\$0.40	\$14.00		\$0.40	\$14.00	0.0%
Subtotal Field Operations Costs				\$89.80		\$93.80	-4.3%		
Total Input, Services and Field Operation Costs				\$169.54		\$185.47			
Contribution Margin				\$54.81		\$114.13	-52.0%		
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	0.0%		
Total Costs					\$209.54		\$225.47	-7.1%	
Net Returns to Owner (for unpaid management and risk)					\$14.81		\$74.13		
Yield Breakeven		2015	2014	% Change	Price Breakeven	2015	2014	% Change	
Bushels Necessary to Cover Variable Costs		26.4 bu.	21.7 bu.	+22.1%	Operating Costs (\$/bu)	\$4.84	\$5.30	-8.6%	
Bushels Necessary to Cover Fixed Costs		6.2 bu	4.7 bu.	+33.5%	Fixed Costs (\$/bu)	\$1.14	\$1.14	+0.0%	
Bushels Necessary to Cover Total Costs		32.7 bu	26.3 bu.	+24.1%	Total Costs (\$/bu)	\$5.99	\$6.44	-7.1%	

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FINANCIAL AND PRODUCTION ANALYSIS

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. This concept is one of the key building blocks of breakeven analysis as well whole farm or ranch budgeting.

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

Fixed Costs (Overhead). These are costs that take place irrespective of production. For example, 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 per acre minus total costs per acre.

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 7% means the farm has a net income of 7 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 Breakeven. This is the production point which total expenses and total revenue are equal to the bushels, pounds or tons needed to cover costs of the enterprise.

Variable Costs (Operating). Variable or input 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 click the Agriculture – Crop/Livestock Budgets link.

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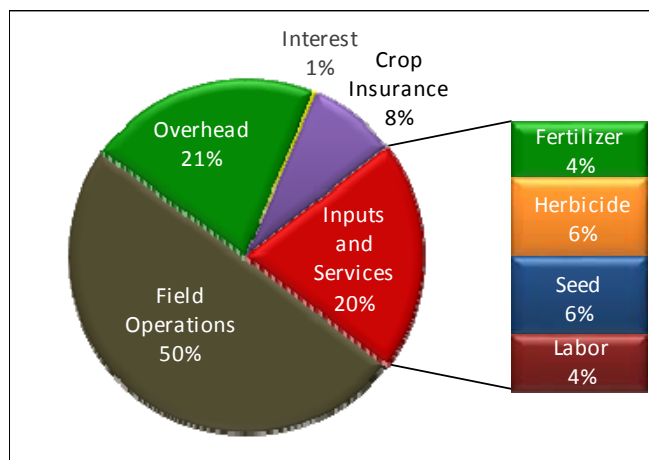


Figure 1. Percent Input, Field Operations and Overhead Required to Produce Dryland HRW Wheat.

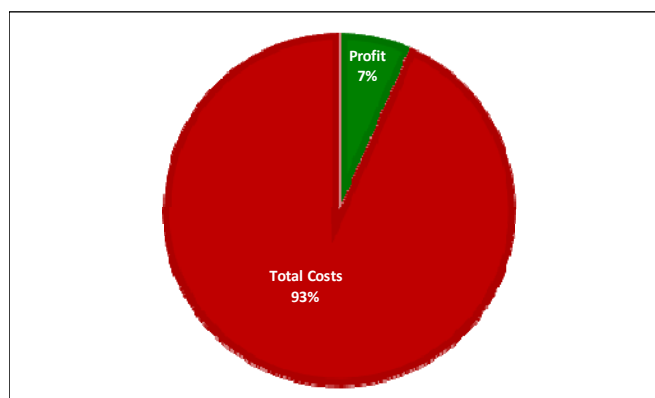


Figure 2. Net Income or Profit Margin.

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.

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

Net Income (Total Sales per Acre - Total Costs per Acre)					
Total Costs per Acre	Total Sales per Acre				
	\$124	\$174	\$224	\$274	\$324
\$110	\$14.81	\$64.81	\$114.81	\$164.81	\$214.81
\$160	-\$35.19	\$14.81	\$64.81	\$114.81	\$164.81
\$210	-\$85.19	-\$35.19	\$14.81	\$64.81	\$114.81
\$260	-\$135.19	-\$85.19	-\$35.19	\$14.81	\$64.81
\$270	-\$145.19	-\$95.19	-\$45.19	\$4.81	\$54.81

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

Net Income/Acre	Total Sales per Acre				
	\$124	\$174	\$224	\$274	\$324
\$35	28.0%	20.0%	15.5%	12.7%	10.7%
\$25	20.0%	14.2%	11.1%	9.0%	7.6%
\$15	11.9%	8.5%	6.6%	5.4%	4.6%
\$5	3.9%	2.8%	2.1%	1.8%	1.5%
-\$5	-4.2%	-3.0%	-2.3%	-1.9%	-1.6%

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

Variable Costs per Acre	Total Sales per Acre				
	\$124	\$174	\$224	\$274	\$324
\$120	\$4.81	\$54.81	\$104.81	\$154.81	\$204.81
\$145	-\$20.19	\$29.81	\$79.81	\$129.81	\$179.81
\$170	-\$45.19	\$4.81	\$54.81	\$104.81	\$154.81
\$195	-\$70.19	-\$20.19	\$29.81	\$79.81	\$129.81
\$220	-\$95.19	-\$45.19	\$4.81	\$54.81	\$104.81

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

Contribution Margin	Total Sales per Acre				
	\$124	\$174	\$224	\$274	\$324
\$75	60.2%	42.9%	33.3%	27.3%	23.1%
\$65	52.1%	37.2%	28.9%	23.6%	20.0%
\$55	44.1%	31.4%	24.4%	20.0%	16.9%
\$45	36.0%	25.7%	20.0%	16.3%	13.8%
\$35	28.0%	20.0%	15.5%	12.7%	10.7%

Table 6. Production Breakeven (Total Costs per Acre / HRW Wheat Price per Bu.)

Price per Bushel	Total Costs				
	\$110	\$160	\$210	\$260	\$310
\$7.41	15 bu	22 bu	28 bu	35 bu	42 bu
\$6.91	16 bu	23 bu	30 bu	38 bu	45 bu
\$6.41	17 bu	25 bu	33 bu	40 bu	48 bu
\$5.91	19 bu	27 bu	35 bu	44 bu	52 bu
\$5.41	20 bu	29 bu	39 bu	48 bu	57 bu

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

Yield per Acre	Total Costs				
	\$10	\$110	\$210	\$310	\$310
33 bu	\$0.29/bu	\$3.32/bu	\$6.35/bu	\$9.38/bu	\$9.38/bu
31 bu	\$0.31/bu	\$3.53/bu	\$6.76/bu	\$9.99/bu	\$9.99/bu
29 bu	\$0.33/bu	\$3.78/bu	\$7.23/bu	\$10.67/bu	\$10.67/bu
27 bu	\$0.35/bu	\$4.06/bu	\$7.76/bu	\$11.46/bu	\$11.46/bu
25 bu	\$0.38/bu	\$4.38/bu	\$8.38/bu	\$12.38/bu	\$12.38/bu