Enterprise Budget

Wheat (Winter) Continuous Wheat, Conservation Tillage, 18-24 inch Precipitation Zone, North Central Region

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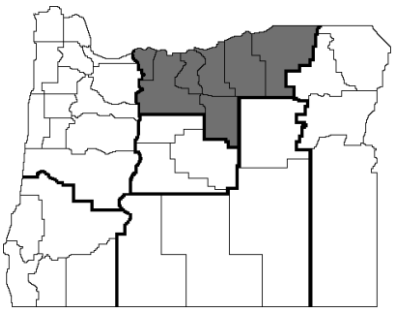

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This enterprise budget estimates the typical costs and returns of producing winter wheat using conservation tillage production practices in an 18-24 inch precipitation zone. It should be used as a guide to estimate actual costs and returns and is not representative of any particular farm. The major assumptions used in constructing this budget are discussed below. Assistance provided by area producers and agribusinesses is greatly appreciated.

Cropping Pattern
This budget is based on a 2,000-acre farm with 2,000 acres in winter wheat production each year. The average annual precipitation is 18 to 24-inches. Wheat yields in this cropping system range from 80 to 130 bushels per acre. A typical yield in this budget is 110 bushels per acre.

Land
A land lease charge of $318 per acre is included to represent the cost of leasing or owning land. This correlates to the payment a landowner would receive under a one-third crop-share lease, the most common arrangement in this area, under our assumed prices and yields.

Labor
Typically tractor drivers and harvest labor cost approximately $12 per hour, all of which include social security, worker's compensation, unemployment insurance, and other labor overhead expenses. For this study, owner labor is valued at the same rate as tractor driver rates, and all labor is assumed to be a cash costs. Labor hours are calculated based on machinery hours.

Capital
Interest on operating capital (5 percent) is treated as a cash expense. One-third of the cash expenses are borrowed for 12-months. Interest on intermediate (6 percent) and long-term capital (4 percent) is treated as a non-cash opportunity cost to the owner.

Machinery and Equipment
The machinery and equipment used in this budget is sufficient for a 2,000-acre wheat farm in an 18-24 inch precipitation zone. A detailed breakdown of machinery values is shown in Table 2. Precision technologies, such as GPS auto-steer and spray boom controller, are included in this budget, which increase machine efficiencies and lowers labor and machinery and equipment hours. Estimated machinery costs are shown in Table 3. The machinery costs are estimated based on the total farm use of the machinery. Gasoline costs $4.02, on-road diesel $4.10 and off-road diesel $3.55 per gallon. Table 4 shows the labor, variable, and fixed costs for certain machinery operations.

Operations
The cultural operations are listed approximately in the order in which they are performed. A 485-hp crawler tractor is used for pulling the bank out wagon, rotary mower, chisel, field sprayer, and drill. Grain is harvested using a combine, a bank out wagon, semi-truck and trailer and an older truck. The grain is hauled to Pendleton. A $0.05 per bushel assessment is paid to the Wheat Commission. A miscellaneous charge of $10 per acre, which includes additional labor, repairs and maintenance, and materials not included in field operations.

Results
The price for wheat is $8.50 per bushel, the average price at Portland in 2012. The total gross income in this budget does not include any government program payments. Variable cash production costs were $200 per acre, giving a net return above variable cash costs of $735 per acre. Total costs were $601 per acre when all costs are considered. A break-even price of $1.82 per bushel would be required to cover variable cash costs, and $5.46 per bushel to cover total costs. Tables 5 and 6 show the returns per acre for cash and total costs at various yields and prices.

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Table 1. Winter Wheat, Continuous Wheat, Conservation Tillage, 18-24 inches Precipitation Zone, $/acre economic costs and returns.

GROSS INCOME	Quantity	Unit	$/Unit	Total	Price/Bu	Your Income
Winter Wheat	110	bushels	8.50	$935.00	$8.50	_____
Total **gross** income				$935.00	$8.50	_____

VARIABLE CASH COSTS	Description	Labor	Machinery	Materials	Total	Cost/Bu	Your Cost
Rotary mower	1.00 appl.	1.06	5.90	0.00	6.96	0.06	_____
Chisel plow	1.00 appl.	0.69	4.85	0.00	5.53	0.05	_____
Culti-weeder	1.00 appl.	0.43	2.91	0.00	3.34	0.03	_____
Crop Production							
Fertilizer		0.00	0.00	93.50	93.50	0.85	_____
Nitrogen	150.00 lbs						
	$ 0.60 /lb						
Sulfur	15.00 lbs						
	$ 0.70 /lb						
Drill seed	1.00 appl.	0.86	5.56	14.25	20.67	0.19	_____
Wheat seed	75.00 lbs						
	$ 0.19 /lb						
Herbicides	2.00 appl.	0.58	4.67	22.00	27.25	0.25	_____
Chemicals	$ 11.00 /acre						
Harvesting Operations							
Combine		0.69	3.01	0.00	3.70	0.03	_____
Hauling grain		2.27	8.28	0.00	10.54	0.10	_____
Wheat Commission	$ 0.05 /bu	0.00	0.00	5.50	5.50	0.05	_____
Other Charges							
Pickup & truck repairs, fuel & lube		0.00	9.14	0.00	9.14	0.08	_____
Other machinery		0.00	0.40	0.00	0.40	0.00	_____
Miscellaneous		4.47	1.00	5.00	10.47	0.10	_____
Interest: operating capital	12.00 mons	0.00	0.00	3.25	3.25	0.03	_____
Total **variable** costs		**$11.04**	**$45.72**	**$143.50**	**$200.27**	**$1.82**	
Total **gross income** minus **variable** costs					**$734.73**	**$6.68**	

FIXED CASH COSTS	Unit	Total	Cost/Bu	Your Cost
Insurance - Hail, Fire & Crop Revenue Coverage[1]	acre	34.00	0.31	_____
Conservation Practices	acre	0.30	0.00	_____
Total **fixed cash** costs		**$ 34.30**	**$0.31**	_____
Total **gross income** minus **variable** plus **fixed cash** costs		**$700.43**	**$6.37**	_____

FIXED NON-CASH COSTS	Unit	Total	Cost/Bu	Your Cost
Machinery and equipment - depreciation & interest	acre	$ 39.61	0.36	_____
Pickup, truck & ATV - depreciation & interest	acre	8.89	0.08	_____
Land interest charge	acre	317.90	2.89	_____
Total **non-cash** costs		**$366.40**	**$3.33**	_____
Total **fixed** costs		**$400.70**	**$3.64**	
Total of all costs per acre		**$600.97**	**$5.46**	_____
Net projected returns		**$ 334.03**	**$3.04**	_____

[1]Hail & Fire ($4.50/acre) & 85% Crop Revenue Coverage at ($29.50/acre).

Table 2. Machinery Cost Assumptions

Machine	Size	Current Market Value	Hours or Miles of Annual Use	Expected Life (Years)
Tractor, rubber tracked	485 hp	$200,000	729	15
Combine, used	30' Hillside	125,000	115	10
Rotary mower	26'	53,000	176	15
Chisel plow	40'	54,500	115	15
Field sprayer	90'	55,000	96	15
Culti-weeder	60'	47,000	72	15
Grain drills	36'	35,100	143	15
Bank out wagon	850 bushel capacity	49,000	126	20
Pickup	3/4 ton 4X4, new	40,000	15,000	10
Truck & trailer	Semi, used	52,000	3,000	10
Truck	2 1/2 ton, older	18,000	2,400	10
ATV	4-wheeler new	9,500	3,000	5
Precision technologies	GPS auto-steer, etc.	21,550	N/A	7
Other machinery		16,000	N/A	10

Table 3. Machinery Cost Calculations

		---- Variable Costs ----		---- Fixed Costs ----		
Machine	Size	Fuel & Lube	Repairs & Maint.	Deprec-iation	Interest	Total Cost
		---------- Costs per Hour ----------				
Tractor, rubber tracked	485 hp	$40.83	$13.40	$14.73	$16.46	$85.41
Combine, used	30' Hillside	29.80	22.75	88.48	65.46	206.50
Rotary mower	26'	0.00	12.72	18.12	18.04	48.88
Chisel plow	40'	0.00	30.36	28.67	28.54	87.57
Field sprayer	90'	0.00	42.68	34.36	34.20	111.24
Culti-weeder	60'	0.00	26.18	39.15	38.97	104.30
Grain drills	36'	0.00	23.48	14.77	14.71	52.96
Bank out wagon	850 bushel capacity	0.00	11.76	17.57	23.33	52.66
		---------- Costs per Mile ----------				
Pickup	3/4 ton 4X4, new	$0.46	$0.21	$0.22	$0.16	$1.05
Truck & trailer	Semi, used	0.94	0.83	1.43	1.04	4.24
Truck	2 1/2 ton, older	0.92	0.29	0.62	0.45	2.28
ATV	4-wheeler new	3.85	0.02	0.52	0.19	4.58
		---------- Costs per Acre ----------				
Precision technologies	GPS auto-steer, etc.	$0.00	$0.54	$1.54	$0.65	$2.72
Other machinery		0.00	0.40	0.80	0.48	1.68

Table 4. Estimated Cost of Each Operation with Power-Unit.

Operation	Tractor	Miles per Hour	Acres per Hour	Labor Cost per Acre	--- Machine Costs --- Variable Cost per Acre	Fixed Cost per Acre	Total Cost per Acre
Combine, used	N/A	6.0	17.46	$0.69	$3.01	$8.82	$12.52
Rotary mower	Tractor, rubber tracked	4.0	11.35	1.06	5.90	5.94	12.89
Chisel plow	Tractor, rubber tracked	4.0	17.46	0.69	4.85	5.06	10.60
Field sprayer	Tractor, rubber tracked	4.0	41.46	0.29	2.34	2.41	5.03
Culti-weeder	Tractor, rubber tracked	4.0	27.64	0.43	2.91	3.95	7.30
Grain drills	Tractor, rubber tracked	4.0	13.97	0.86	5.56	4.34	10.77
Fertilizer Application[1]	Tractor, rubber tracked	4.0	19.64	0.61	2.76	1.59	4.96

[1] Includes tractor costs only, applicator is provided by the fertilizer dealer.

Table 5. Estimated Per Acre Returns Over Cash Costs at Varying Yields and Prices.

Price/Bushel	Bushels per Acre 95	100	105	110	115	120	125
$ 7.00	$ 430.43	$ 465.43	$ 500.43	$ 535.43	$ 570.43	$ 605.43	$ 640.43
$ 7.50	$ 477.93	$ 515.43	$ 552.93	$ 590.43	$ 627.93	$ 665.43	$ 702.93
$ 8.00	$ 525.43	$ 565.43	$ 605.43	$ 645.43	$ 685.43	$ 725.43	$ 765.43
$ 8.50	$ 572.93	$ 615.43	$ 657.93	$ 700.43	$ 742.93	$ 785.43	$ 827.93
$ 9.00	$ 620.43	$ 665.43	$ 710.43	$ 755.43	$ 800.43	$ 845.43	$ 890.43
$ 9.50	$ 667.93	$ 715.43	$ 762.93	$ 810.43	$ 857.93	$ 905.43	$ 952.93
$ 10.00	$ 715.43	$ 765.43	$ 815.43	$ 865.43	$ 915.43	$ 965.43	$ 1,015.43
$ 10.50	$ 762.93	$ 815.43	$ 867.93	$ 920.43	$ 972.93	$ 1,025.43	$ 1,077.93

Table 6. Estimated Per Acre Returns Over Total Costs at Varying Yields and Prices.

Price/Bushel	Bushels per Acre 95	100	105	110	115	120	125
$ 7.00	$ 64.03	$ 99.03	$ 134.03	$ 169.03	$ 204.03	$ 239.03	$ 274.03
$ 7.50	$ 111.53	$ 149.03	$ 186.53	$ 224.03	$ 261.53	$ 299.03	$ 336.53
$ 8.00	$ 159.03	$ 199.03	$ 239.03	$ 279.03	$ 319.03	$ 359.03	$ 399.03
$ 8.50	$ 206.53	$ 249.03	$ 291.53	$ 334.03	$ 376.53	$ 419.03	$ 461.53
$ 9.00	$ 254.03	$ 299.03	$ 344.03	$ 389.03	$ 434.03	$ 479.03	$ 524.03
$ 9.50	$ 301.53	$ 349.03	$ 396.53	$ 444.03	$ 491.53	$ 539.03	$ 586.53
$ 10.00	$ 349.03	$ 399.03	$ 449.03	$ 499.03	$ 549.03	$ 599.03	$ 649.03
$ 10.50	$ 396.53	$ 449.03	$ 501.53	$ 554.03	$ 606.53	$ 659.03	$ 711.53