

MMM 451

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2008 Estimated Costs and Returns for Wheat

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Currently, the major decision for producers is to evaluate the crop enterprise mix for 2008 and decide if wheat is a profitable enterprise given its production and price risk. This memo discusses the estimated costs and returns to producing wheat, how production costs have increased since 2002, and how price and yield variability affects profitability.

Costs and Returns for 2008

The estimated Return over Variable (production) Costs for wheat for 2008, based on Clemson University Enterprise budgets, is described in Table 1. Total production costs are estimated to be \$286/acre with fertilizer/lime costs accounting for 36% of the total cost per acre (Table 1). In addition, herbicides/pesticides, tractor/machinery, seed and hauling expenses account for 20%, 13%, 13% and 9%, respectively, of the total cost per acre (Table 1).

Table 1. 2008 Wheat (Conservation Tillage) Estimated Costs and Returns (\$/Acre) ^{1/}.

	<u>Unit</u>	<u>Quantity</u>	<u>Price or Cost/Unit</u>	<u>Total Per Acre</u>
Gross Receipts				
Wheat ^{2/}	bu.	65	\$6.36	<u>\$413.40</u>
Total Receipts				<u>\$413.40</u>
Variable Costs				
Seed	bu.	2	\$18.00	\$36.00
Fertilizer				
Nitrogen	lbs.	90	\$0.55	\$49.50
Phosphate	lbs.	40	\$0.52	\$20.80
Potash	lbs.	60	\$0.30	\$18.00
Lime (prorated)	ton	0.33	\$44.00	\$14.52
Herbicides	acre	1	\$32.70	\$32.70
Fungicides	acre	1	\$11.37	\$11.37
Insecticides	acre	1	\$6.45	\$6.45
Aerial Application	appl	1	\$6.50	\$6.50
Hauling	bu.	65	\$0.40	\$26.00
Tractor/Machinery	acre	1	\$36.80	\$36.80
Labor	hrs	2.3	\$6.50	\$16.71
Interest on Operating Capital	dol.	\$174.82	9%	<u>\$10.49</u>
Total Variable Costs				<u>\$285.83</u>
Return over Variable Costs				<u>\$127.57</u>

^{1/}Detailed enterprise budgets for agronomic crops are available at: <http://cherokee.agecon.clemson.edu/budgets.htm> or from your local Clemson University Cooperative Extension office.

^{2/}Wheat price based on July 2008 Wheat Futures price on October 5, 2007 with a local harvest-time basis of -\$0.50.

The harvest cash price, based on the value of the July 2008 Wheat Futures contract of \$6.86 and adjusted by an estimated harvest-time basis of -\$0.50, is estimated to be \$6.36 per bushel (Table 1). Given the revenue and cost estimates, the Return over Variable Costs for wheat is estimated to be \$127.57 per acre (Table 1).

Understanding the Increase in Production Costs

For long-term profitability, producers must continue to control costs. The production costs for wheat produced under a conservation tillage system from 2002 to 2008, based on Clemson University Extension enterprise budgets, are reported in Table 2. Variable costs have increased \$138/acre since 2002 with 65% of the increase occurring since 2005 (Table 2). As you would expect, the largest increase has been for fertilizer with nitrogen costs increasing \$19.68 per acre since 2002 (Table 2). The increased cost of fertilizer and lime accounts for 32% of the cost increase since 2002. Seed cost has increased \$20.60 an acre since 2002 with the greatest increase occurring after 2006-07 (Table 2). Another large increase has occurred in hauling expense which has increased by \$15.55 per acre since 2003 (Table 2). The increase in hauling expense reflects the increase in the oil markets since 2003.

This cost information will help managers understand which cost items have increased the most and, in turn, which items to focus on when monitoring costs. It is important to remember that it is important to cut the non-necessary expenses and to use inputs in a way to get the biggest return for the cost of the input. Therefore, sound management practices should be used when managing costs. For example, soil tests can be used to determine fertilization rates and increased scouting for weeds and insects can be used to monitor pesticide costs.

Table 2. Budgeted Production Costs from 2002 – 2008 for Non-Irrigated Wheat with an Estimated Yield of 65 Bushels/Acre.

Variable Costs	<u>2008</u>	<u>2006-2007</u>	<u>2005</u>	<u>2004</u>	<u>2003</u>	<u>2002</u>
Seed	\$36.00	\$18.64	\$18.12	\$16.52	\$16.02	\$15.40
Fertilizer						
Nitrogen	\$49.50	\$52.39	\$43.52	\$38.55	\$36.13	\$29.82
Phosphate	\$20.80	\$14.71	\$13.24	\$11.91	\$10.98	\$10.22
Potash	\$18.00	\$14.46	\$13.28	\$9.93	\$8.85	\$9.15
Lime (prorated)	\$14.52	\$11.22	\$10.46	\$9.50	\$9.04	\$8.94
Herbicides	\$32.70	\$17.50	\$13.33	\$15.06	\$15.29	\$5.75
Fungicides	\$11.37	\$11.39	\$9.79	\$9.84	\$10.70	\$10.84
Insecticides	\$6.45	\$5.47	\$4.96	\$4.71	\$4.97	\$5.30
Aerial Application	\$6.50	\$5.50	\$4.50	\$4.50	\$3.50	\$3.50
Hauling	\$26.00	\$19.50	\$16.25	\$13.00	\$9.75	\$9.75
Tractor/Machinery	\$36.80	\$30.34	\$27.75	\$25.42	\$23.23	\$21.25
Labor	\$16.71	\$14.95	\$13.80	\$13.80	\$13.80	\$12.84
Interest on Operating Capital	<u>\$10.49</u>	<u>\$8.39</u>	<u>\$7.11</u>	<u>\$6.11</u>	<u>\$6.00</u>	<u>\$5.09</u>
Total Variable Costs	\$285.83	\$224.46	\$196.12	\$178.86	\$168.27	\$147.85
Increase from Previous Year (\$/acre)	\$61.38	\$28.34	\$17.25	\$10.60	\$20.41	

How Risky is Wheat in 2008?

Another question managers should consider when evaluating a crop enterprise is the risk of not covering variable costs. The Total Variable Costs for wheat are estimated to be \$286/acre (Table 1). At an

expected yield of 65 bu./acre, the break-even price for wheat is \$4.40 per bushel. At this break-even price, there will be just enough revenue to pay for the variable costs listed in Table 1. However, the break-even price of \$4.40 does not pay for the cost of rented land or provide a return to fixed costs and management.

Table 3 describes the Return over Variable Costs for alternative prices and yields. Managers can use Table 3 to evaluate the risk of not covering variable costs of producing wheat based on their own price and yield expectations. For example, at the price of \$5.00/bushel, there would be revenue available to pay for all production expenses with yields of 60 bu./acre or greater (Table 3). Similarly, at a yield of 50 bu./acre, all variable costs will be covered with prices of \$5.85/bu. or greater (Table 3).

Table 3. Return over Variable Costs for Various Prices and Yields for Non-Irrigated Wheat (65 bu/acre Expected Yield)^{1/}.

Harvest Yield	Harvest Cash Price						
	\$4.75	\$5.00	\$5.25	\$5.50	\$5.85	\$6.10	\$6.35
40	(\$96)	(\$86)	(\$76)	(\$66)	(\$52)	(\$42)	(\$32)
45	(\$72)	(\$61)	(\$50)	(\$39)	(\$23)	(\$12)	(\$0)
50	(\$49)	(\$36)	(\$24)	(\$11)	\$7	\$19	\$32
55	(\$25)	(\$11)	\$3	\$17	\$36	\$50	\$63
60	(\$1)	\$14	\$29	\$44	\$65	\$80	\$95
65	\$23	\$39	\$55	\$72	\$94	\$111	\$127

^{1/}Total Variable Costs are estimated to be \$286 per acre.

Where do I go for Help in Making this Decision?

Clemson University Extension has developed budgets for the major agronomic crops to help you evaluate their profitability for your farm business. The budgets are to be used as a guide and it is very important that you adjust these budgets to reflect your own costs, management practices, and productivity. You can download the enterprise budgets from the internet at <http://cherokee.agecon.clemson.edu/budgets.htm>. Your local extension office will be able to help you download these budgets and can help you understand how to use these budgets to make decisions for your farm business.