Management Marketing Memo 484 - 2009 Estimated Costs and Returns for Non-Irrigated Corn

CLEMSON UNIVERSITY COOPERATIVE EXTENSION SERVICE

MANAGEMENT MARKETING MEMO

Department of Applied Economics and Statistics, Clemson University, Clemson, SC 29634-0313

MMM 484 February 2, 2009

2009 Estimated Costs and Returns for Non-Irrigated Corn

Todd D. Davis
Extension Economist

With commodity prices fluctuating daily and input costs still near record levels, corn producers will be challenged to maintain profitability in 2009 as profit margins are shrinking. Currently, the major decision for producers is to evaluate the crop enterprise mix for 2009. This memo discusses the estimated costs and returns to producing non-irrigated corn, how production costs have increased since 2003, and how price and yield variability affects profitability.

Costs and Returns for 2009

The estimated Return over Variable (production) costs for non-irrigated corn for 2009, based on Clemson University Enterprise budgets, is described in Table 1. Total production costs are estimated to be $339/acre with fertilizer/lime costs accounting for 42% of the total cost per acre (Table 1). In addition, seed, hauling, and tractor/machinery expenses account for 15%, 14% and 8%, respectively, of the total cost per acre (Table 1).

Table 1. 2009 Non-Irrigated Corn (Conservation Tillage) Estimated Costs and Returns ($/Acre) [1/].

	Unit	Quantity	Price or Cost/Unit	Total Per Acre
Gross Receipts				
Corn [2/]	bu.	120	$4.17	$500.40
Total Receipts				$500.40
Variable Costs				
Seed	thou.	24	$2.06	$49.44
Fertilizer				
Nitrogen	lbs.	140	$0.43	$60.20
Phosphate	lbs.	50	$0.46	$23.00
Potash	lbs.	50	$0.67	$33.50
Lime (prorated)	ton	0.5	$51.00	$25.50
Herbicides	acre	1	$19.82	$19.82
Insecticides	acre	1	$11.75	$11.75
Drying (3 points)	bu.	127	$0.15	$19.05
Hauling	bu.	120	$0.40	$48.00
Tractor/Machinery	acre	1	$27.16	$27.16
Labor	hrs	2.09	$6.50	$13.59
Interest on Operating Capital	dol.	$185.96	9.00%	$8.37
Total Variable Costs				$339.37
Return over Variable Costs				$161.03

[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/] Corn price based on December 2009 Corn Futures price on January 29, 2009 with a local harvest-time basis of -$0.10/bu.

The harvest cash price, based on the value of the December 2009 Corn Futures contract of $4.27 and adjusted by an estimated harvest-time basis of -$0.10, is estimated to be $4.17 per bushel (Table 1). Given the revenue and cost estimates, the Return over variable costs for non-irrigated corn is estimated to be $161 per acre (Table 1).

Understanding the Increase in Production Costs

For long-term profitability, producers must continue to control costs. The production costs for non-irrigated corn from 2003 to 2009, based on Clemson University Extension enterprise budgets, are reported in Table 2. Variable costs have increased $123/acre since 2003 with 59% of the increase occurring since 2005 (Table 2). As you would expect, the largest increase has been for fertilizer with total fertilizer costs increasing $51 per acre since 2003 (Table 2). The increased cost of fertilizer and lime accounts for 42% of the cost increase since 2003. Another large increase has occurred in hauling expense which has increased by $30 per acre since 2003 (Table 2). The increase in hauling expense reflects the increase in the oil markets since 2003. Seed costs have also increased by $25 per acre since 2003 (Table 2).

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 2003 – 2009 for Non-Irrigated Corn with an Estimated Yield of 120 Bushels/Acre.

Variable Costs	2009	2008	2006/2007	2005	2004	2003
Seed	$49.44	$36.00	$35.76	$33.60	$30.00	$24.00
Fertilizer						
Nitrogen	$60.20	$82.60	$77.00	$67.70	$59.97	$56.21
Phosphate	$23.00	$26.00	$17.50	$16.56	$14.89	$13.72
Potash	$33.50	$13.00	$14.50	$11.07	$8.28	$7.38
Lime (prorated)	$25.50	$26.25	$26.25	$15.85	$14.40	$13.70
Herbicides	$19.82	$7.48	$39.81	$35.83	$34.70	$34.73
Insecticides	$11.75					
Drying (3 points)	$19.05	$19.05	$16.51	$15.24	$12.70	$12.70
Hauling	$48.00	$48.00	$36.00	$30.00	$24.00	$18.00
Tractor/Machinery	$27.16	$26.30	$21.50	$19.66	$17.99	$16.44
Labor	$13.59	$13.59	$13.59	$12.61	$12.54	$12.54
Interest on Operating Capital	$8.37	$7.43	$9.56	$8.32	$7.35	$7.02
Total Variable Costs	$339.37	$305.70	$307.97	$266.43	$236.81	$216.43
Increase from Previous Year ($/acre)	$33.67	-$2.27	$41.54	$29.62	$20.38	

How Risky is Non-Irrigated Corn in 2009?

Another question managers should consider when evaluating a crop enterprise is the risk of not covering variable costs. The Total Variable Costs for non-irrigated corn are estimated to be $339/acre (Table 1). At an expected yield of 120 bu./acre, the break-even price for non-irrigated corn is $2.83 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 $2.83 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 Cost for alternative prices and yields. Managers can use Table 3 to evaluate the risk of not covering variable costs of producing non-irrigated corn based on their own price and yield expectations. For example, at the price of $3.75/bushel, there would be revenue available to pay for all production expenses with yields of 100 bu./acre or greater (Table 3). Similarly, at a yield of 80 bu./acre, all variable costs will be covered with prices of $4.25/bu. or greater (Table 3).

Table 3. Return over Variable Cost for Various Prices and Yields for Non-Irrigated Corn (120 bu./acre Expected Yield) [1/].

Harvest Yield	Harvest Cash Price						
	$3.25	$3.50	$3.75	$4.00	$4.25	$4.50	$4.75
60	($145)	($130)	($115)	($100)	($85)	($70)	($55)
70	($113)	($95)	($78)	($60)	($43)	($25)	($8)
80	($80)	($60)	($40)	($20)	$0	$20	$40
90	($48)	($25)	($3)	$20	$43	$65	$88
100	($15)	$10	$35	$60	$85	$110	$135
110	$18	$45	$73	$100	$128	$155	$183
120	$50	$80	$110	$140	$170	$200	$230

[1/] Total Variable Costs are estimated to be $339 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.