



2003 Economies of Scale Corn Production Budget ¹
500, 1000, and 2000 Acres
130 Bushel/Acre Yield
No-Till Practices

| ITEM | EXPLANATION | PRICE PER UNIT | ACRES ² | | | YOUR BUDGET |
|---|--------------------|---------------------|--------------------|-------|--------|-------------|
| | | | 500 | 1000 | 2000 | |
| RECEIPTS | | | | | | |
| Corn | | \$2.40 /bu | \$312 | \$312 | \$312 | _____ |
| | Yield | 130 bu/A | | | | |
| VARIABLE COSTS ³ | | | | | | |
| Seed (kernels) | 28,000 seed/acre | 7% price adjust | 33 | 31 | 29 | _____ |
| Fertilizer ⁴ | | | | | | |
| N (lbs.) | 110 | 10% price adjust | 29 | 26 | 24 | _____ |
| P ₂ O ₅ (lbs) | 45 | 10% price adjust | 12 | 11 | 10 | _____ |
| K ₂ O(lbs) | 50 | 10% price adjust | 7 | 7 | 6 | _____ |
| Lime(ton) | 0.5 | 10% price adjust | 7 | 6 | 5 | _____ |
| Chemicals ⁵ | | 7% price adjust | 43 | 40 | 37 | _____ |
| Drying - Fuel & electric only | | 0.18 /bu | 23 | 23 | 23 | _____ |
| Trucking - Fuel Only | | 0.03 /bu | 4 | 4 | 4 | _____ |
| Fuel, Oil, Grease ⁶ | | | 4 | 4 | 4 | _____ |
| Repairs ⁷ | | | 10 | 13 | 13 | _____ |
| Miscellaneous ⁸ | | | 13 | 13 | 13 | _____ |
| Int. on Oper. Cap. ⁹ | 6 mo. | 9.0% | 7 | 7 | 6 | _____ |
| Hired Labor ¹⁰ | | | 0 | 0 | 0 | _____ |
| TOTAL VARIABLE COSTS | | | 192 | 184 | 174 | _____ |
| | -Per Acre | | | | | |
| | -Per Bushel | | 1.48 | 1.41 | 1.34 | _____ |
| FIXED COSTS | | | | | | |
| Labor Charge (hrs.) ¹⁰ | 3.3 3.0 2.7 | 9.00 /hr | 30 | 27 | 24 | _____ |
| Mach. And Equip. Charge ¹¹ | | | 68 | 54 | 33 | _____ |
| Land Charge | Rent | | 70 | 70 | 70 | _____ |
| Management Charge ¹² | 4% 5% 6% | 6% of gross revenue | 12 | 16 | 19 | _____ |
| TOTAL FIXED COSTS | | | 180 | 166 | 146 | _____ |
| TOTAL COSTS | | | 372 | 350 | 320 | _____ |
| | -Per Acre | | | | | |
| | -Per Bushel | | 2.86 | 2.69 | 2.46 | _____ |
| RETURN ABOVE VARIABLE COSTS | | | 120 | 128 | 138 | _____ |
| RETURN ABOVE TOTAL COSTS | | | (60) | (38) | (8) | _____ |
| RETURN TO LABOR AND MANAGEMENT ¹³ | | | (18) | 4 | 36 | _____ |
| TOTAL RETURN TO LABOR AND MANAGEMENT FOR OPERATION ¹⁴ | | | (8,987) | 4,380 | 71,021 | _____ |

1. This budget is intended to provide an example of how size of operations can affect the costs and returns of a crop enterprise. It is only one of many possible scenarios and is not intended to provide the user with specific revenues, costs, or returns.
2. Acreage is total acres of corn produced. Does not include acreage of other crops produced on the same farm.
3. A price adjustment is included for some variable costs. This reflects the possible price difference of an input based on quantity purchased. The 1000 acre column is the base price, the 500 acre column pays base price plus price adjustment, the 2000 acre column pays base price less price adjustment. Some costs may not reflect adjustment due to rounding.
4. Assumes only maintenance application of fertilizer needed, corn-soybean rotation, 3.8 O.M., 20 CEC, and soil test values of 25 ppm P/A and 150 ppm K/A.
5. Based on use of Roundup Ultra, 2-4D, Basis Gold, Banvel, and COC
6. See specific calculations in Machinery Inventory. Lubrications costs are assumed to be 15% of fuel costs
7. See specific calculations in Machinery Inventory.
8. Includes supplies, utilities, soil tests, small tools, crop insurance, etc...
9. Interest on all variable costs, except drying and trucking, for 6 months at 10% interest rate.
10. Part or all of labor may be a variable cost if paid labor varies with acres farmed. It's a fixed cost if labor costs do not change with acres farmed. Labor required per acre is increased 10% for 500 acres and decreased 10% for 2000 acres.
11. Machinery charge includes depreciation, interest, insurance, and housing. Machinery is assumed to be 100% owned and recently purchased. Tractors and implements increase in size and number as acreage of operation increases. All machinery is assumed to be used only on operator's farm, no custom work included. The following page shows the machinery inventory for each size operation.
12. Management charges are greater for more acres due to the likelihood of having more fields/farms to manage and more transporting of equipment.
13. Return to labor and management is the revenue less total expenses except operator labor and management charge. It is a measure of the returns to the operator's labor and management.
14. Total return that can be expected for the entire operation. (Total Returns = return per acre x number of acres)

Machinery Inventory

500 Acres

| Number in Inventory | Machine | Purchase Price (\$) | Inventory Value (\$) | Fuel (gal/A) | Repairs (\$) | # of times used |
|---------------------|------------------------|------------------------|-------------------------|-----------------|-----------------|--------------------|
| 1 | Fertilizer Spreader | 10,400 | 9,400 | 0.11 | 0.1 | 1 |
| 1 | 6 Row Planter | 17,600 | 17,600 | 0.53 | 0.94 | 1 |
| 1 | 30 ft. Sprayer | 5,000 | 5,000 | 0.11 | 0.15 | 2 |
| 1 | Small Combine w/ Head | 144,900 | 144,900 | 1.93 | 5.90 | 1 |
| 2 | 185 bu. Gravity Wagons | 3,500 | 7,000 | 0.60 | 0.84 | 1 |
| 0 | Small Tractor | 24,300 | 0 | 0.00 | 0 | 0 |
| 1 | Medium Tractor | 30,300 | 30,300 | 0.00 | 2.28 | 1 |
| 0 | Large Tractor | 112,600 | 0 | 0.00 | 0 | 0 |
| 1 | Pickup Truck (1/2) | 12,500 | 12,500 | 0.10 | 0.05 | 1 |
| | | TOTAL | 226,700 | 3.38 | 10.26 | |

Fixed Cost Expense Rate = 15%

Total Annual Fixed Costs = \$34,005

Fixed Costs per Acre = \$68

Diesel Price (\$/gal) = \$1.00

1000 Acres

| Number in Inventory | Machine | Purchase Price (\$) | Inventory Value (\$) | Fuel (gal/A) | Repairs (\$) | # of times used |
|---------------------|------------------------|------------------------|-------------------------|-----------------|-----------------|--------------------|
| 1 | Fertilizer Spreader | 10,400 | 10,400 | 0.11 | 0.10 | 1 |
| 1 | 8 Row Planter | 24,400 | 24,400 | 0.53 | 0.84 | 1 |
| 1 | 50 ft. Sprayer | 5,500 | 5,500 | 0.11 | 0.1 | 2 |
| 1 | Medium Combine w\ Head | 162,400 | 162,400 | 1.60 | 5.00 | 1 |
| 2 | 240 bu. Gravity Wagons | 3,500 | 7,000 | 0.60 | 0.84 | 1 |
| 1 | Small Tractor | 24,300 | 24,300 | 0.00 | 1.94 | 1 |
| 0 | Medium Tractor | 30,300 | 0 | 0.00 | 0 | 0 |
| 1 | Large Tractor | 112,600 | 112,600 | 0.00 | 3.84 | 1 |
| 1 | Pickup Truck (1/2) | 12,500 | 12,500 | 0.10 | 0.05 | 1 |
| | | TOTAL | 359,100 | 3.05 | 12.71 | |

Fixed Cost Expense Rate = 15%

Total Annual Fixed Costs = \$53,865

Fixed Costs per Acre = \$54

Diesel Price (\$/gal) = \$1.00

2000 Acres

| Number in Inventory | Machine | Purchase Price (\$) | Inventory Value (\$) | Fuel (gal/A) | Repairs (\$) | # of times used |
|---------------------|------------------------|------------------------|-------------------------|-----------------|-----------------|--------------------|
| 1 | Fertilizer Spreader | 10,400 | 10,400 | 0.11 | 0.10 | 1 |
| 1 | 12 Row Planter | 47,300 | 47,300 | 0.53 | 1.61 | 1 |
| 1 | 50 ft. Sprayer | 5,500 | 5,500 | 0.11 | 0.1 | 2 |
| 1 | Large Combine w\ Head | 204,100 | 204,100 | 1.93 | 4.15 | 1 |
| 4 | 240 bu. Gravity Wagons | 3,500 | 14,000 | 0.60 | 1.68 | 1 |
| 0 | Small Tractor | 24,300 | 0 | 0.00 | 0 | 0 |
| 1 | Medium Tractor | 30,300 | 30,300 | 0.00 | 1.14 | 1 |
| 1 | Large Tractor | 112,600 | 112,600 | 0.00 | 3.84 | 1 |
| 1 | Pickup Truck (1/2) | 12,500 | 12,500 | 0.10 | 0.05 | 1 |
| | | TOTAL | 436,700 | 3.38 | 12.67 | |

Fixed Cost Expense Rate = 15%

Total Annual Fixed Costs = \$65,505

Fixed Costs per Acre = \$33

Diesel Price (\$/gal) = \$1.00