

Estimated Costs of Crop Production in Iowa - 2008

Ag Decision Maker

File A1-20

The estimated costs of corn, corn silage, soybeans, alfalfa, and pasture maintenance in this report are based on data from several sources. They include the annual Iowa Farm Business Association record summaries, production and costs data from the Departments of Economics, Agricultural and Biosystems Engineering, and Agronomy at Iowa State University and a survey of selected agricultural cooperatives and other input suppliers around the state.

These costs estimates are representative of average costs for farms in Iowa. Very large or small farms may have lower or higher fixed costs per acre.

Due to differences in soil potentials, quantity of inputs used and other factors, production costs will vary from farm to farm. Price shifts of inputs can change production costs in both the short and long run. The attached data reflect average cost of purchased inputs and a return to land and labor resources, but do not provide a margin for profit or a return to management. They reflect production costs only, and do not include costs of storage.

Labor has been treated as a fixed cost, since most labor on Iowa farms is supplied by the operator, family or permanent hired labor. However, when deciding among alternative crops, labor should be considered a variable cost. The wage rate used here is \$11.00 per hour. The hours assumed per crop are presented in the budgets. The hours per crop acre includes not only the field work but also time for maintenance, travel, and other activities related to crop production. The land charge is based on rent equivalent. Owned land may require a greater or lesser cash outlay.

In the short run, cash income must be sufficient to pay cash costs, including seed, fertilizer, chemicals, insurance, cash rent and hired labor, as well as machinery fuel and repairs and interest on operating capital. In the long run, income should be sufficient to pay all costs of production for resources to be used in their most profitable alternative.

Corn yields reflect rotation effects. Fertilizer rates have been adjusted to reflect current data on removal and application rates. Crop insurance costs reflect the mix of multiple peril, revenue and hail insurance, as well as noninsured acres.

Machinery costs reflect both new and used equipment. The machine operations assumed are based on the 2000 Crop Production Practices Survey conducted by the Iowa Agricultural Statistics Service. Further information on this survey can be obtained by contacting the authors. The Estimated Machinery Costs table can be used to budget other tillage and harvesting systems.

Estimates represent typical costs and are only intended to be guidelines. Actual costs will vary considerably and can be entered in the column for "Your Estimates." Electronic spreadsheets for developing crop production budgets are available on the Ag Decision Maker web site, www.extension.iastate.edu/agdm.

Budgets for alfalfa hay establishment with an oat companion crop and by direct seeding are included in this publication. Annual production costs for established alfalfa or alfalfa-grass hay as well as a budget for maintaining grass pastures are included as well. Additional pasture establishment budgets are published in Iowa State University Extension publication AG-96, *Estimated Costs of Pasture and Hay Production*.

Two low-till budgets, one for corn and one for soybeans, are included. The major differences between the low-till and conventional budgets are the preharvest machinery, labor, herbicide, and seeding costs. Beginning in 2005, primary soybean budgets are for herbicide tolerant varieties. Budgets for non-herbicide tolerant soybeans are also included. One budget is based on conventional tillage practices and one on drilled soybeans.

Corn following Corn

| | 125 bu. per acre | | 145 bu. per acre | | 165 bu. per acre | | Your Estimate |
|---|---------------------|--------------|---------------------|--------------|---------------------|--------------|------------------|
| | Fixed | Variable | Fixed | Variable | Fixed | Variable | |
| Preharvest Machinery ^{1/} | \$20.60 | \$19.80 | \$20.60 | \$19.80 | \$20.60 | \$19.80 | \$ _____ |
| Seed, Chemical, etc. | Units | | Units | | Units | | |
| Seed @ \$2.10 per 1000 k. | 25,000 | \$52.50 | 30,000 | \$63.00 | 35,000 | \$73.50 | \$ _____ |
| Nitrogen @ \$0.46 per lb. | 175 | 80.50 | 175 | 80.50 | 175 | 80.50 | _____ |
| Phosphate @ \$0.50 per lb. | 45 | 22.50 | 55 | 27.50 | 60 | 30.00 | _____ |
| Potash @ \$0.27 per lb. | 40 | 10.80 | 45 | 12.15 | 50 | 13.50 | _____ |
| Lime (yearly cost) | | 7.00 | | 7.00 | | 7.00 | _____ |
| Herbicide | | 25.20 | | 25.20 | | 25.20 | _____ |
| Insecticide | | 17.85 | | 17.85 | | 17.85 | _____ |
| Crop Insurance | | 15.00 | | 15.00 | | 15.00 | _____ |
| Miscellaneous | | 8.00 | | 9.00 | | 10.00 | _____ |
| Interest on preharvest variable costs (8 months @ 8%) | | <u>13.82</u> | | <u>14.77</u> | | <u>15.59</u> | _____ |
| Total | | \$253.17 | | \$271.97 | | \$288.14 | \$ _____ |
| Harvest Machinery | | | | | | | |
| Combine | \$14.10 | \$11.00 | \$14.10 | \$11.00 | \$14.10 | \$11.00 | \$ _____ |
| Haul | 2.88 | 3.12 | 3.34 | 3.62 | 3.80 | 4.12 | _____ |
| Dry (LP Gas @ \$1.75/gal.) | 5.00 | 26.25 | 5.80 | 30.45 | 6.60 | 34.65 | _____ |
| Handle | 1.25 | 0.62 | 1.45 | 0.72 | 1.65 | 0.82 | _____ |
| Total | \$23.23 | \$40.99 | \$24.69 | \$45.79 | \$26.15 | \$50.59 | \$ _____ |
| Labor | | | | | | | |
| 2.85 hours @ \$11.00 | \$31.35 | | \$31.35 | | \$31.35 | | \$ _____ |
| Land | | | | | | | |
| Cash rent equivalent | \$155.00 | | \$190.00 | | \$225.00 | | \$ _____ |
| Total fixed, variable | | | | | | | |
| Per acre | \$230.18 | \$313.96 | \$266.64 | \$337.56 | \$303.10 | \$358.53 | Yield: |
| Per bushel | \$1.84 | \$2.51 | \$1.84 | \$2.33 | \$1.84 | \$2.17 | bu./acre _____ |
| Total cost per acre | \$544.14 | | \$604.20 | | \$661.63 | | \$ _____ |
| Total cost per bushel | \$4.35 | | \$4.17 | | \$4.01 | | \$ _____ |

^{1/}Chisel plow, tandem disk, apply N, field cultivate, plant, cultivate, and spray. See the Estimated Machinery Costs table.

Corn following Soybeans

| | 140 bu. per acre | | 160 bu. per acre | | 180 bu. per acre | | Your Estimate |
|---|---------------------|--------------|---------------------|--------------|---------------------|--------------|------------------|
| | Fixed | Variable | Fixed | Variable | Fixed | Variable | |
| Preharvest Machinery ^{1/} | \$17.10 | \$15.60 | \$17.10 | \$15.60 | \$17.10 | \$15.60 | \$ _____ |
| Seed, Chemical, etc. | Units | | Units | | Units | | |
| Seed @ \$2.10 per 1000 k. | 25,000 | \$52.50 | 30,000 | \$63.00 | 35,000 | \$73.50 | \$ _____ |
| Nitrogen @ \$0.46 per lb. | 120 | \$55.20 | 120 | \$55.20 | 120 | \$55.20 | _____ |
| Phosphate @ \$0.50 per lb. | 55 | \$27.50 | 60 | \$30.00 | 70 | \$35.00 | _____ |
| Potash @ \$0.27 per lb. | 40 | \$10.80 | 50 | \$13.50 | 55 | \$14.85 | _____ |
| Lime (yearly cost) | | 7.00 | | 7.00 | | 7.00 | _____ |
| Herbicide | | 25.20 | | 25.20 | | 25.20 | _____ |
| Crop Insurance | | 15.00 | | 15.00 | | 15.00 | _____ |
| Miscellaneous | | 8.00 | | 9.00 | | 10.00 | _____ |
| Interest on preharvest variable costs (8 months @ 8%) | | <u>11.56</u> | | <u>12.45</u> | | <u>13.41</u> | _____ |
| Total | | \$212.76 | | \$230.35 | | \$249.16 | \$ _____ |
| Harvest Machinery | | | | | | | |
| Combine | \$14.10 | \$11.00 | \$14.10 | \$11.00 | \$14.10 | \$11.00 | \$ _____ |
| Haul | 3.22 | 3.50 | 3.68 | 4.00 | 4.14 | 4.50 | _____ |
| Dry (LP Gas @ \$1.75/gal.) | 5.60 | 29.40 | 6.40 | 33.60 | 7.20 | 37.80 | _____ |
| Handle | 1.40 | 0.70 | 1.60 | 0.80 | 1.80 | 0.90 | _____ |
| Total | \$24.32 | \$44.60 | \$25.78 | \$49.40 | \$27.24 | \$54.20 | \$ _____ |
| Labor | | | | | | | |
| 2.6 hours @ \$11.00 | \$28.60 | | \$28.60 | | \$28.60 | | \$ _____ |
| Land | | | | | | | |
| Cash rent equivalent | \$155.00 | | \$190.00 | | \$225.00 | | \$ _____ |
| Total fixed, variable | | | | | | | |
| Per acre | \$225.02 | \$272.96 | \$261.48 | \$295.35 | \$297.94 | \$318.96 | Yield: |
| Per bushel | \$1.61 | \$1.95 | \$1.63 | \$1.85 | \$1.66 | \$1.77 | bu./acre _____ |
| Total cost per acre | \$497.98 | | \$556.83 | | \$616.90 | | \$ _____ |
| Total cost per bushel | \$3.56 | | \$3.48 | | \$3.43 | | \$ _____ |

^{1/} Apply N, tandem disk, field cultivate, plant, cultivate, and spray. See the Estimated Machinery Costs table.

Corn Silage following Corn

| | 15 | | 18 | | 23 | | Your Estimate |
|---|---------------|--------------|---------------|--------------|---------------|--------------|------------------|
| | tons per acre | | tons per acre | | tons per acre | | |
| | Fixed | Variable | Fixed | Variable | Fixed | Variable | |
| Preharvest Machinery ^{1/} | \$20.60 | \$19.80 | \$20.60 | \$19.80 | \$20.60 | \$19.80 | \$ _____ |
| Seed, Chemical, etc. | Units | | Units | | Units | | |
| Seed @ \$2.10 per 1000 k. | 23,000 | \$48.30 | 27,000 | \$56.70 | 31,000 | \$65.10 | \$ _____ |
| Nitrogen @ \$0.46 per lb. | 150 | \$69.00 | 150 | \$69.00 | 150 | \$69.00 | _____ |
| Phosphate @ \$0.50 per lb. | 55 | \$27.50 | 65 | \$32.50 | 80 | \$40.00 | _____ |
| Potash @ \$0.27 per lb. | 120 | \$32.40 | 145 | \$39.15 | 185 | \$49.95 | _____ |
| Lime (yearly cost) | | 8.50 | | 8.50 | | 8.50 | _____ |
| Herbicide | | 25.20 | | 25.20 | | 25.20 | _____ |
| Insecticide | | 17.85 | | 17.85 | | 17.85 | _____ |
| Crop Insurance | | 15.00 | | 15.00 | | 15.00 | _____ |
| Miscellaneous | | 8.00 | | 9.00 | | 10.00 | _____ |
| Interest on preharvest variable costs (8 months @ 8%) | | <u>14.48</u> | | <u>15.61</u> | | <u>17.09</u> | _____ |
| Total | | \$266.23 | | \$288.51 | | \$317.69 | \$ _____ |
| Harvest Machinery | | | | | | | |
| Silage Harvester | \$29.30 | \$11.10 | \$29.30 | \$13.40 | \$29.30 | \$16.80 | \$ _____ |
| Haul | 16.80 | 18.30 | 20.20 | 22.00 | 25.30 | 27.60 | _____ |
| Blower | 12.20 | 12.20 | 14.70 | 14.70 | 18.40 | 18.40 | _____ |
| Total | \$58.30 | \$41.60 | \$64.20 | \$50.10 | \$73.00 | \$62.80 | \$ _____ |
| Labor | | | | | | | |
| 5.0 hours @ \$11.00 | \$55.00 | | \$55.00 | | \$55.00 | | \$ _____ |
| Land | | | | | | | |
| Cash rent equivalent | \$155.00 | | \$190.00 | | \$225.00 | | \$ _____ |
| Total fixed, variable | | | | | | | |
| Per acre | \$288.90 | \$327.63 | \$329.80 | \$358.41 | \$373.60 | \$400.29 | Yield: |
| Per ton | \$18.93 | \$21.47 | \$17.95 | \$19.51 | \$16.27 | \$17.43 | bu./acre _____ |
| Total cost per acre | \$616.53 | | \$688.21 | | \$773.89 | | \$ _____ |
| Total cost per ton | \$40.40 | | \$37.46 | | \$33.69 | | \$ _____ |

^{1/}Chisel plow, tandem disk, apply N, field cultivate, plant, cultivate, and spray. See the Estimated Machinery Costs table.

Herbicide Tolerant Soybeans following Corn

| | 45 bu. per acre | | 50 bu. per acre | | 55 bu. per acre | | Your Estimate |
|---|--------------------|----------|--------------------|----------|--------------------|----------|------------------|
| | Fixed | Variable | Fixed | Variable | Fixed | Variable | |
| Preharvest Machinery ^{1/} | \$14.20 | \$13.30 | \$14.20 | \$13.30 | \$14.20 | \$13.30 | \$ _____ |
| Seed, Chemical, etc. | Units | | Units | | Units | | |
| Seed @ \$31.00 per 50 lb. | 1.2 | \$37.20 | 1.2 | \$37.20 | 1.2 | \$37.20 | \$ _____ |
| Phosphate @ \$0.50 per lb. | 35 | \$17.50 | 40 | \$20.00 | 45 | \$22.50 | _____ |
| Potash @ \$0.27 per lb. | 70 | \$18.90 | 75 | \$20.25 | 85 | \$22.95 | _____ |
| Lime (yearly cost) | | 7.00 | | 7.00 | | 7.00 | _____ |
| Herbicide ^{2/} | | 15.75 | | 15.75 | | 15.75 | _____ |
| Crop Insurance | | 8.00 | | 8.00 | | 8.00 | _____ |
| Miscellaneous | | 8.00 | | 9.00 | | 10.00 | _____ |
| Interest on preharvest variable costs (8 months @ 8%) | | 6.70 | | 6.96 | | 7.29 | _____ |
| Total | | \$119.05 | | \$124.16 | | \$130.79 | \$ _____ |
| Harvest Machinery | | | | | | | |
| Combine | \$10.50 | \$7.30 | \$10.50 | \$7.30 | \$10.50 | \$7.30 | \$ _____ |
| Haul | 1.04 | 1.12 | 1.14 | 1.26 | 1.26 | 1.38 | _____ |
| Handle | 0.45 | 0.20 | 0.55 | 0.25 | 0.65 | 0.30 | _____ |
| Total | \$11.99 | \$8.62 | \$12.19 | \$8.81 | \$12.41 | \$8.98 | \$ _____ |
| Labor | | | | | | | |
| 2.45 hours @ \$11.00 | \$26.95 | | \$26.95 | | \$26.95 | | \$ _____ |
| Land | | | | | | | |
| Cash rent equivalent | \$155.00 | | \$190.00 | | \$225.00 | | \$ _____ |
| Total fixed, variable | | | | | | | |
| Per acre | \$208.14 | \$140.97 | \$243.34 | \$146.27 | \$278.56 | \$152.97 | Yield: |
| Per bushel | \$4.63 | \$3.13 | \$4.87 | \$2.93 | \$5.06 | \$2.78 | bu./acre _____ |
| Total cost per acre | \$349.11 | | \$389.61 | | \$431.53 | | \$ _____ |
| Total cost per bushel | \$7.76 | | \$7.79 | | \$7.85 | | \$ _____ |

^{1/} Chisel plow, tandem disk, field cultivate, plant, and spray. See the Estimated Machinery Costs table.

^{2/} Estimates do not include any insecticide or fungicide costs.

Non-Herbicide Tolerant Soybeans following Corn

| | <u>Soybeans Following Corn</u> | | | <u>Drilled Soybeans Following Corn</u> | | |
|---|--------------------------------|----------|------------------|--|----------|------------------|
| | 50 bu. per acre | | Your Estimate | 50 bu. per acre | | Your Estimate |
| | Fixed | Variable | | Fixed | Variable | |
| Preharvest Machinery ^{1/} | \$16.40 | \$15.60 | \$ _____ | \$12.50 | \$10.40 | \$ _____ |
| Seed, Chemical, etc. | Units | | | Units | | |
| Seed @ \$22.90 per 50 lb. | 1.2 | \$27.48 | \$ _____ | 1.4 | \$32.06 | \$ _____ |
| Phosphate @ \$0.50 per lb. | 40 | \$20.00 | _____ | 40 | 20.00 | _____ |
| Potash @ \$0.27 per lb. | 75 | \$20.25 | _____ | 75 | 20.25 | _____ |
| Lime (yearly cost) | | 7.00 | _____ | | 7.00 | _____ |
| Herbicide | | 26.25 | _____ | | 31.00 | _____ |
| Crop Insurance | | 8.00 | _____ | | 8.00 | _____ |
| Miscellaneous | | 9.00 | _____ | | 9.00 | _____ |
| Interest on preharvest variable costs (8 months @ 8%) | | 7.12 | _____ | | 7.34 | _____ |
| Total | | \$125.10 | \$ _____ | | \$134.65 | \$ _____ |
| Harvest Machinery | | | | | | |
| Combine | \$10.50 | \$7.30 | \$ _____ | \$10.50 | \$7.30 | \$ _____ |
| Haul | 1.14 | 1.26 | _____ | 1.14 | 1.26 | _____ |
| Handle | 0.55 | 0.25 | _____ | 0.55 | 0.25 | _____ |
| Total | \$12.19 | \$8.81 | \$ _____ | \$12.19 | \$8.81 | \$ _____ |
| Labor | | | | | | |
| 2.25 hours @ \$11.00 | \$24.75 | | \$ _____ | | | |
| 1.75 hours @ \$11.00 | | | | \$19.25 | | \$ _____ |
| Land | | | | | | |
| Cash rent equivalent | \$190.00 | | \$ _____ | \$190.00 | | \$ _____ |
| Total fixed, variable | | | | | | |
| Per acre | \$243.34 | \$149.51 | Yield: _____ | \$233.94 | \$153.86 | Yield: _____ |
| Per bushel | \$4.87 | \$2.99 | bu./acre_____ | \$4.68 | \$3.08 | bu./acre_____ |
| Total cost per acre | \$392.85 | | \$ _____ | \$387.80 | | \$ _____ |
| Total cost per bushel | \$7.86 | | \$ _____ | \$7.76 | | \$ _____ |

^{1/} Chisel plow, tandem disk, field cultivate, plant, cultivate, and spray.

Tandem disk, field cultivate, drill and spray for drilled soybeans. See the Estimated Machinery Costs table.

^{2/} Estimates do not include any insecticide or fungicide costs.

Low-till Corn and Soybeans

| | <u>Corn Following Soybeans</u> | | | <u>Herbicide Tolerant Drilled Soybeans Following Corn</u> | | |
|---|--------------------------------|----------|------------------|---|----------|------------------|
| | 160 bu. per acre | | Your Estimate | 50 bu. per acre | | Your Estimate |
| | Fixed | Variable | | Fixed | Variable | |
| Preharvest Machinery ^{1/} | \$12.50 | \$11.30 | \$ _____ | \$10.50 | \$8.20 | \$ _____ |
| Seed, Chemical, etc. | Units | | | Units | | |
| Seed @ \$2.10 per 1000 k. | 26,000 | \$54.60 | \$ _____ | | | |
| Seed @ \$31.00 per 50 lb. | | | | 1.4 | \$43.40 | \$ _____ |
| Nitrogen @ \$0.46 per lb. | 120 | 55.20 | _____ | | | |
| Phosphate @ \$0.50 per lb. | 60 | 30.00 | _____ | 40 | 20.00 | _____ |
| Potash @ \$0.27 per lb. | 50 | 13.50 | _____ | 75 | 20.25 | _____ |
| Lime (yearly cost) | | 7.00 | _____ | | 7.00 | _____ |
| Herbicide ^{2/} | | 36.50 | _____ | | 30.60 | _____ |
| Crop Insurance | | 15.00 | _____ | | 8.00 | _____ |
| Miscellaneous | | 9.00 | _____ | | 9.00 | _____ |
| Interest on preharvest variable costs (8 months @ 8%) | | 12.38 | _____ | | 7.81 | _____ |
| Total | | \$233.18 | \$ _____ | | \$146.06 | \$ _____ |
| Harvest Machinery | | | | | | |
| Combine | \$14.10 | \$11.00 | \$ _____ | \$10.50 | \$7.30 | \$ _____ |
| Haul | 3.68 | 4.00 | _____ | 1.14 | 1.26 | _____ |
| Dry (LP Gas @ \$1.75/gal.) | 6.40 | 33.60 | _____ | | | |
| Handle | 1.70 | 0.75 | _____ | 0.55 | 0.25 | _____ |
| Total | \$25.88 | \$49.35 | \$ _____ | \$12.19 | \$8.81 | \$ _____ |
| Labor | | | | | | |
| 2.3 hours @ \$11.00 | \$25.30 | | \$ _____ | | | |
| 1.75 hours @ \$11.00 | | | | \$19.25 | | \$ _____ |
| Land | | | | | | |
| Cash rent equivalent | \$190.00 | | \$ _____ | \$190.00 | | \$ _____ |
| Total fixed, variable | | | | | | |
| Per acre | \$253.68 | \$293.83 | Yield: _____ | \$231.94 | \$163.07 | Yield: _____ |
| Per bushel | \$1.59 | \$1.84 | bu./acre _____ | \$4.64 | \$3.26 | bu./acre _____ |
| Total cost per acre | \$547.51 | | \$ _____ | \$395.00 | | \$ _____ |
| Total cost per bushel | \$3.42 | | \$ _____ | \$7.90 | | \$ _____ |

^{1/} Apply N, plant, cultivate, and spray for corn. Tandem disk, drill and spray for soybeans. See the Estimated Machinery Costs table.

^{2/} Estimates do not include any insecticide or fungicide costs.

Oats and Hay Production - Seeding Year Costs

| Establishment Costs | Alfalfa-Grass Seeded with Oat Companion Crop ^{1/} | | Alfalfa Seeded with Herbicide ^{2/} | | Your Estimate | |
|--|---|--------------|--|--------------|------------------|----------|
| | Fixed | Variable | Fixed | Variable | | |
| Preharvest Machinery | | | | | | |
| Spray herbicide | | | \$1.00 | \$0.70 | \$ _____ | |
| Tandem disk (2 times) | \$6.40 | \$4.80 | 6.40 | 4.80 | _____ | |
| Spread fertilizer | 1.70 | 1.30 | 1.70 | 1.30 | _____ | |
| Harrow | 1.70 | 1.00 | 1.70 | 1.00 | _____ | |
| Seed (drill) | 3.70 | 3.30 | 3.70 | 3.30 | _____ | |
| Total Preharvest Machinery | \$13.50 | \$10.40 | \$14.50 | \$11.10 | \$ _____ | |
| Seed ^{3/} | | | | | | |
| Oats | 2 bu. | \$13.00 | | | \$ _____ | |
| Alfalfa | 8 lb. | 32.00 | 15 lb. | 60.00 | _____ | |
| Bromegrass | 6 lb. | 11.10 | | | _____ | |
| Orchardgrass | 3 lb. | 8.25 | | | _____ | |
| Total Seed Cost | | \$64.35 | | \$60.00 | \$ _____ | |
| Herbicide | | | | 13.10 | _____ | |
| Lime (total cost for hay lifetime) | | 29.00 | | 29.00 | _____ | |
| Labor @ \$11.00 | 1 hr. | \$11.00 | 1 hr. | \$11.00 | \$ _____ | |
| Total Establishment Costs | | \$24.50 | \$103.75 | \$25.50 | \$113.20 | \$ _____ |
| Annual Costs | | | | | | |
| One-Third of Est. Costs (for establishment year) | | Fixed \$8.17 | Variable \$34.58 | Fixed \$8.50 | Variable \$37.73 | \$ _____ |
| Fertilizer | | | | | | |
| Nitrogen | 60 lb. | \$27.60 | | | \$ _____ | |
| Phosphorus | 45 lb. | 22.50 | 35 lb. | \$17.50 | _____ | |
| Potash | 130 lb. | 35.10 | 125 lb. | 33.75 | _____ | |
| Total Fertilizer | | \$85.20 | | \$51.25 | \$ _____ | |
| Labor @ \$11.00 | 4 hr. | \$44.00 | 3 hr. | \$33.00 | \$ _____ | |
| Land Cash rent equivalent | | \$100.00 | | \$100.00 | \$ _____ | |
| Harvest Machinery | | | | | | |
| Oats: combine | | \$11.64 | \$8.20 | | \$ _____ | |
| rake, bale, and haul straw | | \$9.00 | \$7.50 | | \$ _____ | |
| Alfalfa: mower-conditioner, rake, bale, and haul hay | | \$12.60 | \$10.40 | \$25.65 | \$21.50 | \$ _____ |
| Total Harvest Cost | | \$33.24 | \$26.10 | \$25.65 | \$21.50 | \$ _____ |
| Total fixed and variable costs | | \$185.41 | \$145.88 | \$167.15 | \$110.48 | \$ _____ |
| Total cost per acre | | \$331.29 | | \$277.63 | \$ _____ | |

^{1/} Assumes 80 bushels oat yield, one ton straw yield and one ton per acre alfalfa yield from one cutting.

^{2/} Assumes two and a half tons per acre from two alfalfa cuttings with a herbicide-assisted seeding.

^{3/} Omit oats from August seedings. Higher priced seed varieties or different seed mixtures could vary these costs by 1.2 to 2.0 times.

Annual Production Costs for Established Alfalfa or Alfalfa-Grass Hay

| | Hay Production Level | | | | Your Estimate |
|--|-------------------------------|----------|-----------------|----------|---------------|
| | 4 tons per acre ^{1/} | | 6 tons per acre | | |
| | Fixed | Variable | Fixed | Variable | |
| One-third of establishment costs Machinery, seed, lime, labor, and herbicide ^{2/} | \$8.17 | \$34.58 | \$8.50 | \$37.73 | \$ _____ |
| Annual fertilizer ^{3/} 0-13-50 lbs/ton removed plus spreading | \$1.70 | \$81.30 | \$3.40 | \$122.60 | \$ _____ |
| Harvesting Costs: Large Round Bales ^{4/} | | | | | |
| Mower-conditioner, rake, baling, and hauling | \$38.70 | \$32.60 | \$52.20 | \$44.40 | \$ _____ |
| Labor Costs: 1.33 hr./cutting @ \$11.00 per hour | \$44.00 | | \$58.67 | | \$ _____ |
| Land Cash rent equivalent | \$100.00 | | \$125.00 | | \$ _____ |
| Total fixed and variable cost using large round bales | \$192.57 | \$148.48 | \$247.77 | \$204.73 | \$ _____ |
| Fixed and variable cost per ton | \$48.14 | \$37.12 | \$41.29 | \$34.12 | \$ _____ |
| Total cost per acre | \$341.05 | | \$452.50 | | \$ _____ |
| Total cost per ton | \$85.26 | | \$75.42 | | \$ _____ |
| Harvesting Costs: Small Square Bales ^{4/} | | | | | |
| Mower-conditioner, rake, baling, and hauling | \$52.65 | \$39.05 | \$72.34 | \$54.22 | \$ _____ |
| Labor Costs: 1.8 hr./cutting @ \$11.00 per hour | \$59.40 | | \$79.20 | | \$ _____ |
| Land Cash rent equivalent | \$100.00 | | \$125.00 | | \$ _____ |
| Total fixed and variable cost using small square bales | \$221.92 | \$154.93 | \$288.44 | \$214.55 | \$ _____ |
| Fixed and variable cost per ton | \$55.48 | \$38.73 | \$48.07 | \$35.76 | \$ _____ |
| Total cost per acre | \$376.85 | | \$502.99 | | \$ _____ |
| Total cost per ton | \$94.21 | | \$83.83 | | \$ _____ |

^{1/} For harvest as silage use machine cost estimates from the Estimated Machinery Costs table.

^{2/} Assumes alfalfa-grass seeded with oat companion crop. If alfalfa seeded with preplant herbicide then use other costs (see previous page).

^{3/} For 6-ton yield goal, a split application of fertilizer is assumed.

^{4/} Harvest cost estimates assume 3 cuttings for 4 tons and 4 cuttings for 6 tons; stacker cost per acre.

Maintaining Grass Pastures - Annual Cost per Acre

| | <u>Improved Grass</u> ^{2/} | | <u>Improved Grass-Legume</u> ^{3/} | | Your Estimate |
|---|-------------------------------------|----------|--|----------|---------------|
| | Fixed | Variable | Fixed | Variable | |
| Machinery Costs | | | | | |
| Spreading fertilizer | \$1.70 | \$1.30 | \$1.70 | \$1.30 | \$ _____ |
| Spraying herbicide | 1.00 | 0.70 | | | _____ |
| Clipping weeds | 3.00 | 2.10 | 3.00 | 2.10 | _____ |
| Total Machinery Cost | \$5.70 | \$4.10 | \$4.70 | \$3.40 | \$ _____ |
| Fertilizer and Herbicide ^{1/} | | | | | |
| Nitrogen @ \$0.46 per lb. | 80 lb. | \$36.80 | | | \$ _____ |
| Phosphate @ \$0.50 per lb. | 30 lb. | 15.00 | 30 lb. | \$15.00 | _____ |
| Potash @ \$0.27 per lb. | | | 40 lb. | 10.80 | _____ |
| Herbicide | | 11.67 | | | _____ |
| Total Fertilizer and Herbicide | | \$63.47 | | \$25.80 | \$ _____ |
| Labor | | | | | |
| Growing practices .5 hr. @ \$11.00 | \$5.50 | | \$5.50 | | \$ _____ |
| Fence maintenance 1 hr. @ \$11.00 | 11.00 | | 11.00 | | _____ |
| Total Labor | \$16.50 | | \$16.50 | | \$ _____ |
| Land | | | | | |
| Cash rent equivalent | \$55.00 | | \$65.00 | | \$ _____ |
| Total cost | \$77.20 | \$67.57 | \$86.20 | \$29.20 | \$ _____ |
| Total cost per acre | | \$144.77 | | \$115.40 | \$ _____ |

^{1/} These are average rates and may vary with soil test and the level of management on a particular field. Different herbicide alternatives could vary this cost.

^{2/} Improved grass pastures assume a dominance of cool season grasses such as smooth bromegrass, orchardgrass, tall fescue, or reed canarygrass.

^{3/} Improved grass-legume pasture assumed one third of the forage is made up of red clover, birdsfoot trefoil, or alfalfa.

Estimated Machinery Costs

The following cost estimates are for on-farm use, excluding labor. Depreciation is based on current replacement cost, interest is based on average market rates. Fixed costs will be greater for newer machinery. If annual machine use is greater than that assumed, fixed costs per acre will be lower, and vice versa. Hauling costs are based on a round trip of one mile. Remember these are estimates and they should not take the place of accurate record-keeping. **Diesel fuel is estimated to cost \$2.75 per gallon, delivered to the farm in bulk.**

| Operation | Hours of Use Assumed per Year | Fixed Cost per Acre (depreciation, interest, insurance, housing) | Variable Cost per Acre (fuel, oil, repairs) |
|--------------------------------------|----------------------------------|--|---|
| Subsoiling (V-ripper) | 120 | \$6.00 | \$7.50 |
| Moldboard plow | 120 | 8.20 | 8.40 |
| Chisel plow | 120 | 3.50 | 4.20 |
| Chop stalks | 120 | 4.20 | 4.00 |
| Tandem disk | 120 | 3.20 | 2.40 |
| Offset disk | 120 | 4.20 | 3.80 |
| Peg tooth harrow | 60 | 1.70 | 1.00 |
| Sprayer/disk | 120 | 3.70 | 2.80 |
| Field cultivator | 120 | 2.00 | 2.20 |
| Disk/Field cultivator | 120 | 2.30 | 2.50 |
| Bulk fertilizer spreader | 60 | 1.70 | 1.30 |
| NH ₃ applicator | 120 | 4.20 | 4.20 |
| Chisel plow, NH ₃ applic. | 120 | 4.60 | 5.10 |
| Grain drill | 100 | 3.70 | 3.30 |
| Broadcast seeder | 100 | 2.00 | 1.10 |
| Planter | 100 | 4.50 | 3.80 |
| No-till planter | 100 | 5.10 | 4.10 |
| No-till drill | 100 | 6.30 | 5.10 |
| Rotary hoe | 60 | 1.40 | 0.90 |
| Cultivator | 120 | 2.20 | 2.30 |
| Sprayer | 150 | 1.00 | 0.70 |
| Combine corn | 180 | 14.10 | 11.00 |
| Combine beans | 120 | 10.50 | 7.30 |
| Combine small grain | 120 | 9.80 | 6.20 |
| Haul grain (on farm) | 300 | 0.02 /bu. | 0.03 /bu. |
| Grain Cart | 300 | 2.50 | 1.90 |
| Corn picker | 170 | 17.40 | 10.50 |
| Silage harvester | 200 | 29.30 | 13.40 |
| Haul silage | 140 | 1.10 /ton | 1.20 /ton |
| Rotary mower | 120 | 3.00 | 2.10 |
| Mower-conditioner | 120 | 3.60 | 2.90 |
| Rake | 120 | 2.20 | 1.50 |
| Small square baler | 120 | 6.70 /cutting | 3.70 /cutting |
| Round baler | 120 | 5.90 | 4.60 |
| Stacker | 120 | 7.70 | 6.10 |
| Large square baler | 120 | 7.80 | 7.80 |
| Windrower | 200 | 3.20 | 2.30 |
| Haul hay & straw | 120 | 0.90 /ton | 1.40 /ton |
| Forage chopper | 200 | 13.40 | 9.80 |
| Forage blower | 100 | 0.80 /ton | 0.80 /ton |

Estimated Crop Production Costs in Iowa, 2002-2008

Yields, rents and other factors are adjusted each year to reflect current averages and practices

| | 2002 | 2003 | 2004 | 2005 ^{1/} | 2006 | 2007 | 2008 |
|--|---------|---------|---------|--------------------|----------|----------|----------|
| Corn following Corn | | | | | | | |
| Machinery | \$74.62 | \$80.99 | \$86.78 | \$94.55 | \$100.07 | \$102.94 | \$110.88 |
| Seed, Chemicals, etc. | 142.34 | 146.19 | 159.57 | 184.77 | 201.62 | 222.22 | 271.97 |
| Labor | 22.80 | 25.65 | 27.08 | 27.08 | 29.93 | 31.35 | 31.35 |
| Land | 125.00 | 135.00 | 140.00 | 140.00 | 145.00 | 155.00 | 190.00 |
| Total Cost Per Acre | 364.76 | 387.83 | 413.43 | 446.39 | 476.61 | 511.51 | 604.20 |
| Assumed Yield | 120 bu | 135 bu | 135 bu | 135 bu | 140 bu | 145 bu | 145 bu |
| Total Cost Per Bushel | \$3.04 | \$2.87 | \$3.06 | \$3.31 | \$3.40 | \$3.53 | \$4.17 |
| Corn following Soybeans | | | | | | | |
| Machinery | \$73.29 | \$79.55 | \$85.68 | \$93.37 | \$97.39 | \$100.12 | \$107.88 |
| Seed, Chemicals, etc. | 125.15 | 125.10 | 135.74 | 156.03 | 169.26 | 189.33 | 230.35 |
| Labor | 20.80 | 23.40 | 24.70 | 24.70 | 27.30 | 28.60 | 28.60 |
| Land | 125.00 | 135.00 | 140.00 | 140.00 | 145.00 | 155.00 | 190.00 |
| Total Cost Per Acre | 344.23 | 363.04 | 386.12 | 414.10 | 438.95 | 473.05 | 556.83 |
| Assumed Yield | 135 bu | 150 bu | 150 bu | 150 bu | 155 bu | 160 bu | 160 bu |
| Total Cost Per Bushel | \$2.55 | \$2.42 | \$2.57 | \$2.76 | \$2.83 | \$2.96 | \$3.48 |
| Soybeans following Corn ^{1/} | | | | | | | |
| Machinery | \$41.39 | \$43.38 | \$41.51 | \$40.53 | \$45.90 | \$46.76 | \$48.50 |
| Seed, Chemicals, etc. | 87.46 | 84.47 | 90.76 | 96.53 | 106.79 | 107.58 | 124.16 |
| Labor | 19.60 | 22.05 | 23.28 | 23.28 | 25.73 | 26.95 | 26.95 |
| Land | 125.00 | 135.00 | 140.00 | 140.00 | 145.00 | 155.00 | 190.00 |
| Total Cost Per Acre | 273.45 | 284.90 | 295.54 | 300.34 | 323.41 | 336.29 | 389.61 |
| Assumed Yield | 45 bu | 45 bu | 45 bu | 45 bu | 45 bu | 50 bu | 50 bu |
| Total Cost Per Bushel | \$6.08 | \$6.33 | \$6.57 | \$6.67 | \$7.19 | \$6.73 | \$7.79 |
| Alfalfa Hay, annual production, 6 ton per acre, large round bales | | | | | | | |
| One-Third of Est. Costs | \$31.90 | \$32.84 | \$33.84 | \$34.45 | \$36.83 | \$37.27 | \$46.23 |
| Annual Fertilizer | 63.82 | 60.25 | 71.62 | 84.74 | 103.36 | 103.46 | 126.00 |
| Harvest Machinery | 90.56 | 103.12 | 96.24 | 108.30 | 107.10 | 90.40 | 96.60 |
| Labor | 42.67 | 48.00 | 50.67 | 50.67 | 56.00 | 58.67 | 58.67 |
| Land | 80.00 | 85.00 | 88.00 | 95.00 | 95.00 | 100.00 | 125.00 |
| Total Cost Per Acre | 308.95 | 329.21 | 340.36 | 373.16 | 398.29 | 389.79 | 452.50 |
| Assumed Yield | 6 ton | 6 ton | 6 ton | 6 ton | 6 ton | 6 ton | 6 ton |
| Total Cost Per Ton | \$51.49 | \$54.87 | \$56.73 | \$62.19 | \$66.38 | \$64.97 | \$75.42 |

^{1/} Beginning in 2005, primary soybean estimates are for herbicide tolerant varieties.

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File: Economics 1-8

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