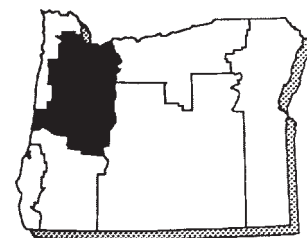


# Enterprise Budget

## Sweet Corn, Willamette Valley Region



Bob Lisec, Former Extension agent, Polk County,  
Dan McGrath, Extension agent, Marion County, and  
Loren Kerns, student assistant,  
Oregon State University

**EM 8376, Revised August 1995**

This enterprise budget estimates the typical costs and returns associated with sweet corn production in the Willamette Valley region. It should be used as a guide to estimating actual costs and is not representative of any particular farm. The major assumptions used in constructing this budget are discussed below. Assistance provided by area producers is greatly appreciated.

### Land

This budget is based on 175 acres of sweet corn planted annually on a 450-acre row crop farm. A land lease charge of \$100 per acre is included to represent the cost of leasing or owning land. This budget reflects the typical practices associated with sweet corn production in the Willamette Valley, but do not necessarily reflect the best or only method of production. Irrigation equipment costs are based on a good used system with a \$15 per acre per year repair and maintenance cost. The irrigation system is composed of "overhead" types of systems such as travelers, linear pivots, and/or permanent big guns. Pumping expenses are based on an electricity charge of \$2.25 per inch of water applied during the growing season.

### Labor

All labor used in production is valued at \$7 per hour. This wage rate may be thought of as the net cost to growers for hired labor paid a cash wage of \$5 per hour, with an additional \$2 per hour for payroll expenses (withholding taxes, recordkeeping, preparing W-2 forms, etc.).

### Capital

Opportunity costs of capital are charged at a rate of 10 percent for current and intermediate capital provided by the owner. Interest on operating capital is based on one-half of total variable costs. Operating capital interest is treated as a cash expense. Intermediate capital is assumed to be provided by the owner, so interest is treated as a noncash expenditure.

### Machinery and Equipment

The machinery and equipment used in the budget reflect the typical machinery complement of a 300-500 acre row crop farm in the Willamette Valley. A detailed breakdown of machinery values is shown in Table 1. August 1994 replacement costs are used, with the assumption that the machinery is half depreciated. Estimated machinery costs are shown in

Table 2. Costs per hour are calculated based upon whole-farm machinery use. Costs per acre are calculated by multiplying costs per hour times the annual hours of use in sweet corn production shown in Table 1.

### Operations

Operations are listed in the budget in the order they are typically performed. Preplant operations consist of eradicating and turning under the cover crop and preparing the field for planting in May or June. Contracts with the processor generally dictate when the crop is to be planted and harvested. Herbicides are applied before planting, followed by fertilizer and 10 pounds of seed per acre.

During the growing season, a postplant herbicide is applied to control weeds. Nitrogen fertilizer and 10 inches of water are applied to promote satisfactory growth. We included the optional practice of topping the corn before harvest. Weeds are controlled with a hoe or a spot sprayer.

The corn is harvested in accordance with the cannery schedule at a rate of about 2 acres per hour. The operator uses two trucks to haul the corn to the cannery. Lime is applied every 4 years, and a soil test is taken every other year. Harvest and transportation costs are based on a yield of 9 tons per acre.

After harvest, the stalks are disked, and the ground is prepared for a winter cover crop. The larger tractors are used for field preparation, while the smaller ones are used for planting and chemical applications.

### Budget

The sweet corn budget estimates total variable costs of \$493.90 per acre and total fixed costs of \$226.10 per acre, resulting in \$756.38 per acre for total cost of production. For this budget, the break-even price needed to cover variable costs is \$54.88 per ton, and the break-even price needed to cover all costs is \$84.04 per ton based on a yield of 9 tons per acre.



OREGON STATE UNIVERSITY EXTENSION SERVICE

## EM 8376 Enterprise Budget

### ECONOMIC COSTS and RETURNS

Willamette Valley Region

Sweet Corn, 175 acres (\$/acre)

| <u>GROSS INCOME Description</u>  | <u>Quantity</u>        | <u>Unit</u>      | <u>\$/Unit</u>   | <u>Total</u> | <u>Your Returns</u> |
|----------------------------------|------------------------|------------------|------------------|--------------|---------------------|
| Sweet Corn                       | 9.00                   | ton              | 80.00            | 720.00       | _____               |
| Total GROSS Income               |                        |                  |                  | 720.00       | _____               |
| <u>VARIABLE COST Description</u> | <u>Labor</u>           | <u>Machinery</u> | <u>Materials</u> | <u>Total</u> | <u>Your Cost</u>    |
| <b>PREPLANT</b>                  |                        |                  |                  |              |                     |
| Spray Cover Crop                 | 0.54                   | 1.00             | 8.25             | 9.79         | _____               |
| Herbicide                        | 1.5 pint x 5.50 = 8.25 |                  |                  |              |                     |
| Chisel                           | 2.42                   | 6.17             | 0.00             | 8.59         | _____               |
| Disk                             | 1.41                   | 3.48             | 0.00             | 4.89         | _____               |
| Drag and Roll                    | 1.41                   | 3.15             | 0.00             | 4.56         | _____               |
| Preplant Herbicide               | 0.85                   | 1.13             | 38.46            | 40.43        | _____               |
| Herbicide                        | 2 qt x 16.65 = 33.30   |                  |                  |              |                     |
| Herbicide                        | 1.5 qt x 3.44 = 5.15   |                  |                  |              |                     |
| Incorporate Herbicide            | 1.06                   | 2.32             | 0.00             | 3.38         | _____               |
| Total PREPLANT                   |                        |                  |                  | 71.63        | _____               |
| <b>PLANTING</b>                  |                        |                  |                  |              |                     |
| Planting                         | 2.82                   | 3.20             | 67.78            | 73.80        | _____               |
| Seed Sweet Corn                  | 10 lb x 3.660 = 36.60  |                  |                  |              |                     |
| Nitrogen (urea)                  | 108 lb x 0.112 = 12.09 |                  |                  |              |                     |
| Phosphorus                       | 134 lb x 0.115 = 15.41 |                  |                  |              |                     |
| Potash                           | 36 lb x 0.084 = 3.02   |                  |                  |              |                     |
| Sulphur                          | 26 lb x 0.025 = 0.65   |                  |                  |              |                     |
| Total PLANTING                   |                        |                  |                  | 73.80        | _____               |
| <b>PREHARVEST</b>                |                        |                  |                  |              |                     |
| Fertilizer                       | 1.41                   | 1.17             | 36.51            | 39.09        | _____               |
| Nitrogen (urea)                  | 326 lb x 0.112 = 36.51 |                  |                  |              |                     |
| Irrigation                       | 35.00                  | 0.00             | 37.50            | 72.50        | _____               |
| Irg. Maint. Reprs.               | 1 ac x 15.00 = 15.00   |                  |                  |              |                     |
| Electricity                      | 10 in x 2.25 = 22.50   |                  |                  |              |                     |
| Postplant Herbicide              | 0.54                   | 1.00             | 6.88             | 8.41         | _____               |
| Herbicide                        | 2 qt x 3.437 = 6.88    |                  |                  |              |                     |
| Topping                          | 0.00                   | 0.00             | 7.00             | 7.00         | _____               |
| Topping Sweet Corn               | 1 ac x 7.00 = 7.00     |                  |                  |              |                     |
| Total PREHARVEST                 |                        |                  |                  | 127.00       | _____               |
| <b>HARVEST</b>                   |                        |                  |                  |              |                     |
| Harvest                          | 10.11                  | 46.32            | 0.00             | 56.43        | _____               |
| Haul Corn 2 Trucks               | 14.39                  | 43.55            | 0.00             | 57.94        | _____               |
| Total HARVEST                    |                        |                  |                  | 114.37       | _____               |

## EM 8376 Enterprise Budget

### ECONOMIC COSTS and RETURNS

Willamette Valley Region

Sweet Corn, 175 acres (\$/acre)

| <u>VARIABLE COST Description</u>              | <u>Labor</u> | <u>Machinery</u> | <u>Materials</u> | <u>Total</u>    | <u>Your Cost</u> |
|---|--------------|------------------|------------------|-----------------|------------------|
| <b>POSTHARVEST</b>                            |              |                  |                  |                 |                  |
| Soil Test                                     | 0.00         | 0.00             | 9.75             | 9.75            | _____            |
| Soil Test                                     |              |                  |                  |                 |                  |
| 0.5 test x 19.50 = 9.75                       |              |                  |                  |                 |                  |
| Lime  | 0.00         | 0.00             | 26.25            | 26.25           | _____            |
| Custom Lime                                   |              |                  |                  |                 |                  |
| 0.625 tn x 42.00 = 26.25                      |              |                  |                  |                 |                  |
| Disk  | 1.13         | 2.64             | 0.00             | 3.77            | _____            |
| Tillage                                       | 2.42         | 7.54             | 0.00             | 9.96            | _____            |
| Plant Cover Crop                              | 1.41         | 1.80             | 12.50            | 15.71           | _____            |
| Seed, Cover Crop                              |              |                  |                  |                 |                  |
| 1 ac x 12.50 = 12.50                          |              |                  |                  |                 |                  |
| Pickup  | 2.92         | 1.90             | 0.00             | 4.82            | _____            |
| ATV   | 7.00         | 2.20             | 0.00             | 9.20            | _____            |
| Total POSTHARVEST                             |              |                  |                  | 79.45           | _____            |
| Operating Capital Interest                    | 0.00         | 0.00             | 23.31            | 23.31           | _____            |
| Total VARIABLE COST                           |              |                  |                  | 489.56          | _____            |
| GROSS INCOME minus VARIABLE COST              |              |                  |                  | 230.44          | _____            |
| <br><b>FIXED COST Description</b>             |              |                  |                  |                 |                  |
|   |              | <u>Unit</u>      |                  | <u>Total</u>    | <u>Your Cost</u> |
| <b>CASH Cost</b>                              |              |                  |                  |                 |                  |
| Irrigation System Fixed                       |              | acre             |                  | 12.18           | _____            |
| Machinery & Equipment Insurance               |              | acre             |                  | 10.25           | _____            |
| Land Lease                                    |              | acre             |                  | 100.00          | _____            |
| Total CASH Cost                               |              |                  |                  | 122.43          | _____            |
| <b>NONCASH Cost</b>                           |              |                  |                  |                 |                  |
| Machinery & Equipment Depreciation & Interest |              | acre             |                  | 140.05          | _____            |
| Total NONCASH Cost                            |              |                  |                  | 140.05          | _____            |
| Total FIXED Cost                              |              |                  |                  | 262.48          | _____            |
| Total of ALL Cost                             |              |                  |                  | 752.04          | _____            |
| <b>NET PROJECTED RETURNS</b>                  |              |                  |                  | -32.04          | _____            |
| Break-even Price, Total Variable Cost         |              |                  |                  | \$54.40 per ton | _____            |
| Break-even Price, Total Cost                  |              |                  |                  | \$83.56 per ton | _____            |

**Table 1. Machinery Cost Assumptions**

| <b>Machine</b>     | <b>Size</b> | <b>List Price</b> | <b>Current Market Value</b> | <b>Salvage Value</b> | <b>Useful Life</b> | <b>Remaining Life</b> | <b>Annual Use</b> |
|--------------------|-------------|-------------------|-----------------------------|----------------------|--------------------|-----------------------|-------------------|
| Tractor            | 100 hp      | \$44,000          | \$35,200                    | \$13,200             | 15,000 hr          | 7,500 hr              | 55 hr             |
| Tractor            | 160 hp      | 70,000            | 56,000                      | 21,000               | 8,000 hr           | 4,000 hr              | 137 hr            |
| Tractor            | 175 hp      | 75,000            | 60,000                      | 22,500               | 8,000 hr           | 4,000 hr              | 43 hr             |
| Tractor            | 35 hp       | 15,000            | 9,750                       | 4,500                | 6,000 hr           | 3,000 hr              | 27 hr             |
| Tractor            | 50 hp       | 13,500            | 8,100                       | 2,700                | 8,000 hr           | 4,000 hr              | 128 hr            |
| Corn Harvester     |             | 70,000            | 42,000                      | 7,000                | 3,500 hr           | 1,750 hr              | 78 hr             |
| Cultivator/Sprayer | 20 ft       | 1,750             | 1,050                       | 175                  | 2,500 hr           | 1,250 hr              | 17.5 hr           |
| Disk               | 12 ft       | 5,750             | 3,160                       | 575                  | 2,400 hr           | 1,200 hr              | 23 hr             |
| Disk               | 18 ft       | 7,500             | 4,500                       | 750                  | 3,500 hr           | 1,750 hr              | 29 hr             |
| Dixon Harrow       | 16 ft       | 7,500             | 4,125                       | 750                  | 1,000 hr           | 500 hr                | 18.5 hr           |
| Drill              | 12 ft       | 10,000            | 5,500                       | 1,000                | 2,500 hr           | 1,250 hr              | 29 hr             |
| Planter            | 4 row       | 3,800             | 2,200                       | 380                  | 2,500 hr           | 1,250 hr              | 58 hr             |
| Roller             | 16 ft       | 5,200             | 2,860                       | 520                  | 400 hr             | 200 hr                | 44 hr             |
| Roterra            | 20 ft       | 5,500             | 3,300                       | 550                  | 3,000 hr           | 1,500 hr              | 22 hr             |
| Side Dresser       |             | 1,000             | 600                         | 200                  | 2,000 hr           | 1,000 hr              | 29 hr             |
| Spray Tank/Boom    | 200 gal     | 9,000             | 4,950                       | 900                  | 3,500 hr           | 1,750 hr              | 27 hr             |
| U-Chisel           | 10 ft       | 11,500            | 6,900                       | 1,150                | 3,000 hr           | 1,500 hr              | 100 hr            |
| Water Tank         | 1,000 gal   | 5,000             | 2,750                       | 500                  | 3,500 hr           | 1,750 hr              | 27 hr             |
| ATV                |             | 4,000             | 2,800                       | 800                  | 4,500 mi           | 3,500 mi              | 875 mi            |
| Farm Truck         | 12 ton      | 33,500            | 21,775                      | 5,025                | 40,000 mi          | 20,000 mi             | 1,050 mi          |
| Farm Truck         | 8 ton       | 27,500            | 17,875                      | 4,125                | 40,000 mi          | 20,000 mi             | 1,050 mi          |
| Pickup             |             | 15,000            | 8,250                       | 1,500                | 100,000 mi         | 50,000 mi             | 3,500 mi          |

## EM 8376 Enterprise Budget

**Table 2. Machinery Cost Calculations**

| Machine            | Size      | Costs per Hour or Mile |                    |                     |           |        | Total<br>Cost | Hours<br>per Acre | Costs per Acre  |                 |       |
|--------------------|-----------|------------------------|--------------------|---------------------|-----------|--------|---------------|-------------------|-----------------|-----------------|-------|
|                    |           | Variable               |                    | Fixed               |           |        |               |                   | Variable        | Fixed           | Total |
|                    |           | Fuel &<br>Lube         | Repair &<br>Maint. | Depr. &<br>Interest | Insurance | Total  |               |                   |                 |                 |       |
| Tractor            | 100 hp    | \$5.87                 | \$5.26             | \$38.95             | \$2.35    | 52.43  | 0.314 hr      | \$3.49            | \$12.97         | \$16.46         |       |
| Tractor            | 160 hp    | 9.40                   | 6.23               | 24.78               | 1.49      | 41.90  | 0.827 hr      | 12.92             | 21.73           | 34.65           |       |
| Tractor            | 175 hp    | 10.28                  | 6.58               | 79.66               | 4.80      | 101.32 | 0.247 hr      | 4.16              | 20.86           | 25.02           |       |
| Tractor            | 35 hp     | 3.00                   | 1.13               | 19.05               | 1.30      | 24.48  | 0.153 hr      | 0.63              | 3.11            | 3.74            |       |
| Tractor            | 50 hp     | 4.28                   | 1.19               | 3.44                | 0.25      | 9.16   | 0.733 hr      | 4.00              | 2.71            | 6.71            |       |
| Corn Harvester     |           | 13.57                  | 90.65              | 52.21               | 2.10      | 158.53 | 0.444 hr      | 46.27             | 24.11           | 70.38           |       |
| Cultivator Sprayer | 20 ft     | 0.00                   | 0.98               | 3.54                | 0.21      | 4.73   | 0.100 hr      | 0.09              | 0.38            | 0.47            |       |
| Disk               | 12 ft     | 0.00                   | 2.89               | 6.51                | 0.49      | 9.89   | 0.133 hr      | 0.38              | 0.93            | 1.31            |       |
| Disk               | 18 ft     | 0.00                   | 4.22               | 8.11                | 0.60      | 12.93  | 0.166 hr      | 0.70              | 1.44            | 2.14            |       |
| Dixon Harrow       | 16 ft     | 0.00                   | 2.93               | 13.29               | 0.83      | 17.05  | 0.105 hr      | 0.30              | 1.49            | 1.79            |       |
| Drill              | 12 ft     | 0.00                   | 5.10               | 11.82               | 0.73      | 17.65  | 0.166 hr      | 0.84              | 2.08            | 2.92            |       |
| Planter            | 4 row     | 0.00                   | 1.95               | 2.43                | 0.15      | 4.53   | 0.333 hr      | 0.64              | 0.86            | 1.50            |       |
| Roller             | 16 ft     | 0.00                   | 2.82               | 2.55                | 0.19      | 5.56   | 0.333 hr      | 0.93              | 0.92            | 1.85            |       |
| Roterra            | 20 ft     | 0.00                   | 2.95               | 6.87                | 0.51      | 10.33  | 0.125 hr      | 0.36              | 0.93            | 1.29            |       |
| Side Dresser       |           | 0.00                   | 1.33               | 1.49                | 0.08      | 2.90   | 0.166 hr      | 0.22              | 0.26            | 0.48            |       |
| Spray Tank/Boom    | 200 gal   | 0.00                   | 5.71               | 10.64               | 0.66      | 17.01  | 0.153 hr      | 0.87              | 1.73            | 2.60            |       |
| U-Chisel           | 10 ft     | 0.00                   | 6.29               | 4.05                | 0.28      | 10.62  | 0.571 hr      | 3.59              | 2.47            | 6.06            |       |
| Water Tank         | 1,000 gal | 0.00                   | 3.17               | 5.91                | 0.37      | 9.45   | 0.153 hr      | 0.48              | 0.96            | 1.44            |       |
| ATV                |           | 0.07                   | 0.36               | 0.60                | 0.19      | 1.22   | 5.00 mi       | 2.15              | 3.95            | 6.10            |       |
| Farm Truck         | 12 ton    | 0.52                   | 2.00               | 1.38                | 0.09      | 3.99   | 10.00 mi      | 25.20             | 14.70           | 39.90           |       |
| Farm Truck         | 8 ton     | 0.52                   | 1.00               | 1.04                | 0.08      | 2.64   | 12.00 mi      | 18.24             | 8.16            | 26.40           |       |
| Pickup             |           | 0.05                   | 0.34               | 0.23                | 0.03      | 0.65   | 20.00 mi      | 7.80              | 5.20            | 13.00           |       |
| <b>Total</b>       |           |                        |                    |                     |           |        |               | <b>\$134.26</b>   | <b>\$131.95</b> | <b>\$266.21</b> |       |



Extension Service, Oregon State University, Corvallis, Lyla Houghlum, interim director. This publication was produced and distributed in furtherance of the Acts of Congress of May 8 and June 30, 1914. Extension work is a cooperative program of Oregon State University, the U.S. Department of Agriculture, and Oregon counties.

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