Enterprise Budget
Garlic Seed, South Central Region

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Oregon State University

This enterprise budget estimates the typical costs and
returns of producing garlic seed in the Madras area of
South Central Oregon. While efforts were made to reflect
common practices, it is not representative of any particular
farm and should be used only as a guide to estimating
actual costs. The major assumptions used in constructing
this budget are discussed below. Assistance provided by
area producers is greatly appreciated.

Cropping Pattern
This budget is based on a 500-acre farm with 40 acres
in production of garlic seed following wheat. The budget
includes production costs for 1 acre with a yield of
17,000 lbs per acre.

All garlic seed production in Central Oregon is grown
under contracts. Average prices in this region have ranged
from $0.13 to $0.18/lb over the past 5 years, and yield has
varied up to 18,000 lbs per acre over the same period.

Land and Irrigation
A land lease charge of $100 per acre based on a long-
term lease is included to represent the cost of leasing or
owning land. This charge is based on the cost of leasing
good quality, irrigated land and includes ditch maintenance
costs. A water cost of $0.96 per acre inch covers the cost
of irrigation water. This is calculated based on the North
Unit Irrigation District rates and the total water use by the
500-acre farm. A charge of $1.72 per acre inch covers
electricity, repair, and maintenance for the wheel line
sprinkler system. Irrigation system depreciation and
interest is estimated to be $54 per acre annually.

Labor
Labor is hired at a rate of $7 per hour, which includes
worker's compensation, unemployment insurance, social
security taxes, and other labor overhead expenses.
Owner/operator compensation is considered to be a cash
expense of $15 per hour. Labor hours for machinery
operation are calculated by multiplying 1.21 times machine
hours to allow for machinery setup, movement, and
adjustments.

Capital
Opportunity costs of capital are charged at a rate of
8 percent for current, intermediate, and long-term capital
provided by the owner/operator.

Machinery and Equipment
The machinery complement is sufficient to farm
500 production acres. A detailed breakdown of machinery
values used in this budget is shown in Table 1. December
1993 replacement costs are used. Estimated machinery costs
are shown in Table 2 assuming the machinery is half depreci-
ated. The machinery costs per hour are estimated based on
the total farm use of the machinery. The costs per acre are
then estimated based on the hours of annual use in garlic seed
production.

Operations
The cultural operations are listed in the budget in the
approximate order in which they are typically performed. Prior
to planting, the wheat stubble is burned, the field is irrigated,
and a custom lime application is applied. Following the first of
three fertilizer applications and two tillage operations, the field
is bedded up.

It is assumed the contracting company plants the garlic.
Although some companies require the producers to provide
some labor or machinery for planting, this budget assumes all
costs associated with planting are covered by the contracting
company. These assumptions are reflected in the price per
pound received by the grower.

Five inches of water and two herbicide applications are
applied after planting. The production year cultural practices
include several chemical applications, hoeing, and irrigation.

Preparation for harvest includes propane burning and
flailing. Garlic is hand harvested at $0.02/lb which includes all
labor and machinery costs associated with harvest.

Other
A general overhead charge of $10 per acre is included to
cover general insurance, tools, office supplies, and other
miscellaneous expenses.

The total of all variable costs is $956, and the total fixed
cost is $237. The break-even price over total cost is $0.07 per
lb. Net projected returns, assuming a yield of 17,000 lbs, are
$1,188.
## ECONOMIC COSTS AND RETURNS
### SOUTH CENTRAL REGION
Garlic Seed, $/acre (40 acres)

### GROSS INCOME Description
- **Garlic**
  - Quantity: 17,000.00 lb
  - Unit: lb
  - $/Unit: 0.14
  - Total: 2,380.00

**Total GROSS Income:** 2,380.00

### VARIABLE COST Description

#### PREPLANT
- **Burn Wheat**
  - Labor: 0.70
  - Machinery: 0.00
  - Materials: 1.00
  - Total: 1.70
- **Burn Permit**
  - Labor: 1 ac x 1.00 = 1.00
- **Irrigate**
  - Labor: 3.50
  - Machinery: 0.00
  - Materials: 5.36
  - Total: 8.86
- **Water**
  - Labor: 2 in x 0.96 = 1.92
- **Irrigation Electricity, Repair, and Maint.**
  - Labor: 2 in x 1.72 = 3.44
- **Lime**
  - Labor: 0.00
  - Machinery: 0.00
  - Materials: 49.50
  - Total: 49.50
- **Lime & Custom Appl.**
  - Labor: 1 ton x 49.50 = 49.50
- **Disk**
  - Labor: 4.54
  - Machinery: 4.24
  - Materials: 0.00
  - Total: 8.78
- **16-16-16**
  - Labor: 600 lb x 0.111 = 66.60
- **Custom Application**
  - Labor: 1 ac x 5.50 = 5.50
- **Chisel/Harrow (2X)**
  - Labor: 9.08
  - Machinery: 10.32
  - Materials: 0.00
  - Total: 19.40
- **Bed Up**
  - Labor: 4.84
  - Machinery: 2.54
  - Materials: 0.00
  - Total: 7.38

**Total PREPLANT:** 167.72

#### POSTPLANT
- **Irrigate**
  - Labor: 7.00
  - Machinery: 0.00
  - Materials: 13.40
  - Total: 20.40
- **Water**
  - Labor: 5 in x 0.96 = 4.80
- **Irrigation Electricity, Repair, and Maint.**
  - Labor: 5 in x 1.72 = 8.60
- **Weed Control**
  - Labor: 1.5 pint x 6.00 = 9.00
- **Herbicide**
  - Labor: 1 ac x 6.50 = 6.50
- **Broadleaf and Annual Grass Control**
  - Labor: 0.00
  - Machinery: 0.00
  - Materials: 16.13
  - Total: 16.13
- **Herbicide**
  - Labor: 2 pint x 4.81 = 9.62
- **Custom Air Appl.**
  - Labor: 1.0 ac x 6.50 = 6.50

**Total POSTPLANT:** 52.03

#### PRODUCTION YEAR
- **Fertilize**
  - Labor: 16.50
  - Machinery: 8.61
  - Materials: 39.98
  - Total: 65.09
- **30-0-0-6**
  - Labor: 333 lb x 0.097 = 32.47
  - Sidedress Rental: 1 ac x 7.50 = 7.50
- **Fertilize**
  - Labor: 16.50
  - Machinery: 8.61
  - Materials: 23.70
  - Total: 48.81
- **30-0-0-6**
  - Labor: 166 lb x 0.097 = 16.20
  - Sidedress Rental: 1 ac x 7.50 = 7.50
- **Irrigate**
  - Labor: 24.50
  - Machinery: 0.00
  - Materials: 46.90
  - Total: 71.40
- **Water**
  - Labor: 17.5 in x 0.96 = 16.80
- **Irrigation Electricity, Repair, and Maint.**
  - Labor: 17.5 in x 1.72 = 30.10
- **Broadleaf Weed Control**
  - Labor: 3.63
  - Machinery: 2.57
  - Materials: 18.42
  - Total: 24.62
- **Herbicide**
  - Labor: 2.25 pint x 7.81 = 17.57
- **Sticker**
  - Labor: 6.4 oz x 0.13 = 0.85
- **Botrytis Control**
  - Labor: 3.63
  - Machinery: 2.57
  - Materials: 18.81
  - Total: 25.01
- **Hoeing**
  - Labor: 42.00
  - Machinery: 0.00
  - Materials: 0.00
  - Total: 42.00
- **Irrigate**
  - Labor: 3.50
  - Machinery: 0.00
  - Materials: 2.68
  - Total: 6.18
- **Water**
  - Labor: 1 in x 0.96 = 0.96
- **Irrigation Electricity, Repair, and Maint.**
  - Labor: 1 in x 1.72 = 1.72
- **Propane Burn Garlic**
  - Labor: 4.54
  - Machinery: 3.63
  - Materials: 15.20
  - Total: 23.37
- **Propane**
  - Labor: 20 gal x 0.76 = 15.20
- **Flail**
  - Labor: 12.10
  - Machinery: 13.09
  - Materials: 0.00
  - Total: 25.19
### ECONOMIC COSTS AND RETURNS

#### SOUTH CENTRAL REGION

**Garlic Seed, $/acre (40 acres)**

<table>
<thead>
<tr>
<th>VARIABLE COST</th>
<th>Description</th>
<th>Labor</th>
<th>Machinery</th>
<th>Materials</th>
<th>Total</th>
<th>Your Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Harvest</td>
<td></td>
<td>0.00</td>
<td>0.00</td>
<td>340.00</td>
<td>340.00</td>
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</tr>
<tr>
<td>Harvest Garlic</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>17,000 lb x 0.02 = 340.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total PRODUCTION YEAR</td>
<td></td>
<td></td>
<td></td>
<td>671.67</td>
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#### MISCELLANEOUS

<table>
<thead>
<tr>
<th>Description</th>
<th>Labor</th>
<th>Machinery</th>
<th>Materials</th>
<th>Total</th>
<th>Your Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating Capital Interest</td>
<td>0.00</td>
<td>0.00</td>
<td>33.10</td>
<td>33.10</td>
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<tr>
<td>General Overhead</td>
<td>0.00</td>
<td>0.00</td>
<td>10.00</td>
<td>10.00</td>
<td></td>
</tr>
<tr>
<td>Pickup</td>
<td>10.71</td>
<td>3.10</td>
<td>0.00</td>
<td>13.81</td>
<td></td>
</tr>
<tr>
<td>ATV</td>
<td>7.50</td>
<td>0.13</td>
<td>0.00</td>
<td>7.63</td>
<td></td>
</tr>
<tr>
<td>Total MISCELLANEOUS</td>
<td></td>
<td></td>
<td></td>
<td>64.54</td>
<td></td>
</tr>
<tr>
<td>Total VARIABLE COST</td>
<td></td>
<td></td>
<td></td>
<td>955.96</td>
<td></td>
</tr>
</tbody>
</table>

**GROSS INCOME minus VARIABLE COST**

1,424.04

### FIXED COST

<table>
<thead>
<tr>
<th>Description</th>
<th>Unit</th>
<th>Total</th>
<th>Your Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>CASH Cost</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Machinery &amp; Equipment Insurance</td>
<td>acre</td>
<td>6.51</td>
<td></td>
</tr>
<tr>
<td>Land</td>
<td>acre</td>
<td>100.00</td>
<td></td>
</tr>
<tr>
<td>Total CASH Cost</td>
<td></td>
<td>106.51</td>
<td></td>
</tr>
</tbody>
</table>

#### NONCASH Cost

<table>
<thead>
<tr>
<th>Description</th>
<th>Unit</th>
<th>Total</th>
<th>Your Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Irrigation System - Interest &amp; Depreciation</td>
<td>acre</td>
<td>54.00</td>
<td></td>
</tr>
<tr>
<td>Machinery &amp; Equipment - Interest &amp; Depreciation</td>
<td>acre</td>
<td>75.99</td>
<td></td>
</tr>
<tr>
<td>Total NONCASH Cost</td>
<td></td>
<td>129.99</td>
<td></td>
</tr>
<tr>
<td>Total FIXED Cost</td>
<td></td>
<td>236.50</td>
<td></td>
</tr>
<tr>
<td>Total of ALL Cost</td>
<td></td>
<td>1,192.46</td>
<td></td>
</tr>
</tbody>
</table>

**NET PROJECTED RETURNS**

1,187.54

- **Break-even Price, Total Variable Cost** $0.06 per lb
- **Break-even Price, Total Cost** $0.07 per lb
Table 1. Machinery Cost Assumptions

<table>
<thead>
<tr>
<th>Item</th>
<th>Size</th>
<th>List Price</th>
<th>Current Market Value</th>
<th>Salvage Value</th>
<th>Useful Life</th>
<th>Remaining Life</th>
<th>Annual Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tractor</td>
<td>80 hp</td>
<td>$34,000</td>
<td>$22,100</td>
<td>$10,200</td>
<td>10,000 hr</td>
<td>5,000 hr</td>
<td>150 hr</td>
</tr>
<tr>
<td>Tractor</td>
<td>125 hp</td>
<td>65,000</td>
<td>42,250</td>
<td>19,500</td>
<td>10,000 hr</td>
<td>5,000 hr</td>
<td>33 hr</td>
</tr>
<tr>
<td>Chisel Plow</td>
<td>12 ft</td>
<td>8,000</td>
<td>4,800</td>
<td>1,600</td>
<td>2,000 hr</td>
<td>1,000 hr</td>
<td>20 hr</td>
</tr>
<tr>
<td>Disk</td>
<td>12 ft</td>
<td>9,500</td>
<td>5,700</td>
<td>1,900</td>
<td>2,000 hr</td>
<td>1,000 hr</td>
<td>10 hr</td>
</tr>
<tr>
<td>Flail</td>
<td>12 ft</td>
<td>10,000</td>
<td>6,000</td>
<td>2,000</td>
<td>2,000 hr</td>
<td>1,000 hr</td>
<td>27 hr</td>
</tr>
<tr>
<td>Dixon Harrow</td>
<td>12 ft</td>
<td>800</td>
<td>480</td>
<td>160</td>
<td>2,000 hr</td>
<td>1,000 hr</td>
<td>20 hr</td>
</tr>
<tr>
<td>Propane Burner</td>
<td>30 ft</td>
<td>8,660</td>
<td>5,197</td>
<td>1,734</td>
<td>2,000 hr</td>
<td>1,000 hr</td>
<td>10 hr</td>
</tr>
<tr>
<td>Sprayer</td>
<td>200 gal</td>
<td>5,686</td>
<td>3,412</td>
<td>1,138</td>
<td>1,500 hr</td>
<td>750 hr</td>
<td>16 hr</td>
</tr>
<tr>
<td>Tool Bar</td>
<td>12 ft</td>
<td>800</td>
<td>480</td>
<td>160</td>
<td>1,500 hr</td>
<td>750 hr</td>
<td>11 hr</td>
</tr>
<tr>
<td>ATV</td>
<td>3,500</td>
<td>2,100</td>
<td>700</td>
<td>1,500 mi</td>
<td>750 mi</td>
<td>20 mi</td>
<td></td>
</tr>
<tr>
<td>Pickup</td>
<td>1/2 ton</td>
<td>15,000</td>
<td>9,000</td>
<td>3,000</td>
<td>100,000 mi</td>
<td>50,000 mi</td>
<td>1,000 mi</td>
</tr>
</tbody>
</table>

Table 2. Machinery & Equipment Cost Calculations

<table>
<thead>
<tr>
<th>Machine</th>
<th>Size</th>
<th>Variable</th>
<th>Costs per Hour or Mile</th>
<th>Fixed</th>
<th>Costs per Acre</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Fuel &amp;</td>
<td></td>
<td>Depr.</td>
<td>Hours</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Repair</td>
<td></td>
<td>Interest</td>
<td>or Miles per Acre</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&amp; Maint.</td>
<td></td>
<td>Insurance</td>
<td></td>
</tr>
<tr>
<td>Tractor</td>
<td>80 hp</td>
<td>$4.32</td>
<td>$4.28</td>
<td>$5.73</td>
<td>$0.44</td>
</tr>
<tr>
<td>Tractor</td>
<td>125 hp</td>
<td>6.76</td>
<td>8.19</td>
<td>10.96</td>
<td>0.85</td>
</tr>
<tr>
<td>Chisel Plow</td>
<td>12 ft</td>
<td>0.00</td>
<td>4.32</td>
<td>10.50</td>
<td>0.69</td>
</tr>
<tr>
<td>Disk</td>
<td>12 ft</td>
<td>0.00</td>
<td>1.99</td>
<td>17.46</td>
<td>1.14</td>
</tr>
<tr>
<td>Flail</td>
<td>12 ft</td>
<td>0.00</td>
<td>7.89</td>
<td>32.75</td>
<td>2.22</td>
</tr>
<tr>
<td>Dixon Harrow</td>
<td>12 ft</td>
<td>0.00</td>
<td>0.43</td>
<td>1.05</td>
<td>0.07</td>
</tr>
<tr>
<td>Propane Burner</td>
<td>30 ft</td>
<td>0.00</td>
<td>2.81</td>
<td>22.74</td>
<td>1.49</td>
</tr>
<tr>
<td>Sprayer</td>
<td>200 gal</td>
<td>0.00</td>
<td>1.11</td>
<td>5.23</td>
<td>0.34</td>
</tr>
<tr>
<td>Tool Bar</td>
<td>12 ft</td>
<td>0.00</td>
<td>0.16</td>
<td>0.46</td>
<td>0.03</td>
</tr>
<tr>
<td>ATV</td>
<td>0.06</td>
<td>0.20</td>
<td>1.48</td>
<td>0.08</td>
<td>1.82</td>
</tr>
<tr>
<td>Pickup</td>
<td>1/2 ton</td>
<td>0.08</td>
<td>0.04</td>
<td>0.20</td>
<td>0.06</td>
</tr>
</tbody>
</table>

Total        |      |          |                         |       |               | $57.09  | $82.47 | $139.56 |

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