# THE VALUE OF THE SEED WHEAT INDUSTRY IN IDAHO'S ECONOMY 

James R. Nelson and Robert L. Smathers*

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Department of Agricultural Economics
University of Idaho
Moscow, Idaho 83843
*The authors are associated with the Department of Agricultural Economics and Rural Sociology at the University of Idaho. Nelson is Professor and Head, Smathers is a Research/Extension Associate. This paper was presented at the Goatgrass Symposium, Lewiston, ID February 1991.

Seed wheat is a significant crop in Idaho. It is grown in all areas of the state (Figure 1). Seed wheat is a desirable alternative for many Idaho wheat producers because it yields consistently higher net returns than wheat for grain. The production of seed wheat involves a similar mix of inputs as wheat for grain with some minor differences. Seed wheat producers pay much higher costs for foundation seed than grain producers pay for regular seed. Also, seed wheat producers must bear the costs of extra field inspection and special cleaning of harvest equipment. North Idaho (non-irrigated) seed wheat producers often plow isolation strips around their fields, so they lose some production. Seed wheat is cleaned more thoroughly than is wheat for grain. In Northern Idaho only about 85 percent of the seed wheat crop meets certified seed standards. The remainder is generally sold as feed wheat. South Idaho (irrigated) seed wheat producers can usually find sufficiently isolated fields so that isolation strips may not be needed. In general, South Idaho seed wheat producers can sell about 90 percent of their crop as certified seed wheat. The remainder of the crop is generally sold as feed wheat. Typically, the amount of seed meeting certified seed grade is highly correlated with the producer's management skills.

The information specified above is based on comments made to the authors by seed wheat growers and persons affiliated with Idaho Crop Improvement Association, Inc. This information is reflected in the seed wheat and the wheat for grain budgets presented in the appendix of this paper, and in the information shown in Table 1.


## TABLE 1

## ESTIMATED 1991 DIFFERENCES IN NET RETURNS TO IDAHO FARMERS FOR SEED WHEAT VS. WHEAT FOR GRAIN *

| North <br> Idaho | Southwest <br> Idaho | S. Central <br> Idaho | Southeast <br> Idaho | Idaho <br> Total |
| :---: | :---: | :---: | :---: | :---: |

## Per

 acre of seed $\$ 22.95 \quad \$ 53.50 \quad \$ 85.40 \quad \$ 52.99$-wheatTotal seed wheat $\begin{array}{lllll}\$ 59,762 & \$ 143,113 & \$ 471,066 & \$ 477,289 & \$ 1,121,230\end{array}$ acreage

* Based on information from budgets developed in the Department of Agricultural Economics and Rural Sociology at the University of Idaho (see Appendix). Differences shown are in income above variable costs. These would change slightly if returns to fixed costs were considered.

The value of seed wheat to Idaho wheat farmers (as a higher returns alternative to wheat for grain) is estimated by the information on differences in net returns for seed wheat versus wheat for grain, shown in Table 1. The value of a particular enterprise to the economy of an area, however, is more than just the value of the enterprise to the entrepreneurs. As direct income is generated for an entrepreneur, other direct income is generated for workers (wages), land owners (rents), lenders (interest), and others. Such total direct income from an enterprise is called value-added. Estimates of direct value-added for Idaho seed wheat versus wheat for grain are presented in Table 2.

TABLE 2

## ESTIMATED 1991 DIFFERENCES IN DIRECT VALUE ADDED FOR IDAHO SEED WHEAT VS. WHEAT FOR GRAIN*

| North | Southwest <br> Idaho | Idaho | Central <br> Idaho | Southeast <br> Idaho |
| ---: | ---: | ---: | ---: | ---: | | Idaho |
| :---: |
| Total |

Per
acre of seed wheat

Total
seed wheat $\$ 66,037 \quad \$ 147,553 \quad \$ 476,196 \quad \$ 460,035 \quad \$ 1,149,821$ acreage

* Includes labor and interest costs and income above variable costs, based on information from budgets developed in the Department of Agricultural Economics and Rural Sociology at the University of Idaho (see Appendix).

In the economy of an area, economic activity generates additional economic activity. Farmers purchase inputs from implement and chemical dealers. Implement and chemical dealers generate income for themselves from the purchases that farmers make, and they generate income for workers, real estate owners, lenders, and others. Also, farm families use some of their incomes to purchase consumer goods (groceries, clothing, automobiles, etc.). Similarly, the families of agribusiness persons with which farmers do business (implement and chemical dealers) spend some of their incomes for consumer goods. So the valueadded that farmers generate in an economy by producing higher returning rather than lower returning enterprises, is multiplied within such economies. Preliminary results of ongoing research in the Department of Agricultural Economics and Rural Sociology at the University of Idaho indicate that a value-added multiplier of about 3.127 may be appropriate for Idaho agriculture.

Estimates of differences in values-added related to Idaho agriculture for seed wheat vs. wheat for grain are shown in Table 3. In some areas, these valuesadded may be almost entirely kept within the state of Idaho. In other areas, where many people trade across state boundaries (North Idaho and Southeast Idaho), much of this value-added may be drawn out of state. In any case, regional valueadded related to agriculture measures the economic impacts of agriculture on the economy of an area.

## TABLE 3

## ESTIMATED 1991 DIFFERENCES IN REGIONAL VALUE-ADDED RELATED TO AGRICULTURE FOR IDAHO SEED WHEAT VS WHEAT FOR GRAIN*

| North | Southwest <br> Idaho | S. Central <br> Idaho | Southeast <br> Idaho | Idaho <br> Idaho |
| ---: | ---: | ---: | ---: | ---: |

```
Per
acre of
seed $79.30 $172.49 $269.95 $170.42
wheat
Total
seed
wheat $206,498 $461,398 $1,489,065 $1,438,529 $3,595,490
acreage
```

* Based on information from Table 2 and an agricultural value added multiplier for Idaho of 3.127. The multiplier estimate is a preliminary result of ongoing research in the Department of Agricultural Economics \& Rural Sociology at the University of Idaho.

It can be seen from information presented in Table 3 that the seed wheat industry generates about $\$ 3.6$ million in Idaho's economy that would not be generated if the same land was used for wheat for grain. Clearly, the seed wheat industry is of significant economic importance to Idaho. Consequently, it is worthwhile to invest to minimize threats, such as jointed goatgrass, to the state's seed wheat industry.

## APPENDIX

## IDAHO FARM ENTERPRISE BUDGETS

Wheat For Grain<br>and<br>Wheat For Seed

## Price Or Quantity Value Or Your Unit Cost/Unit Per Acre Cost/Acre Value

| 1. Gross Receipts From Production Winter Wheat Total | Bu. | 3.00 | 65.00 | $\text { s } \frac{195.00}{195.00}$ |
| :---: | :---: | :---: | :---: | :---: |
| 2. Variable Costs |  |  |  |  |
| Preharvest |  |  |  | S |
| Anhydrous Ammon. | Lb. | 0.17 | 80.00 | 13.60 |
| 16-20-0 | Lb. | 0.13 | 200.00 | 26.00 |
| Fert. Spreader | Acre | 1.25 | 1.00 | 1.25 |
| Wheat Seed | Lb. | 0.14 | 75.00 | 10.50 |
| Direx 4Lb Ai | at. | 6.78 | 0.60 | 4.07 |
| 2-4-D Amine | at. | 2.99 | 1.00 | 2.99 |
| Air Spray | Acre | 5.00 | 1.00 | 5.00 |
| Sprayer | Acre | 1.25 | 1.00 | 1.25 |
| Crop Insurance | Acre | 5.00 | 1.00 | 5.00 |
| Machinery | Acre | 11.39 | 1.00 | 11.39 |
| Tractors | Acre | 5.00 | 1.00 | 5.00 |
| Labor(Tractor \& Machinery) | Hour | 6.00 | 1.04 | 6.23 |
| Interest On Op. Cap. | Dol. | 0.11 | 68.02 | + 7.48 |
| Subtotal, Pre-Harvest |  |  |  | \$ 99.75 |
| Harvest Costs |  |  |  |  |
| Machinery | Acre | 14.64 | 1.00 | 14.64 |
| Labor(Tractor \& Machinery) | Hour | 6.00 | 0.96 | 5.77 |
| Subtotal, Harvest |  |  |  | \$ 20.41 |
| Total Variable Cost |  |  |  | \$ 120.17 |
| 3. Income Above Variable Costs |  |  |  | \$ 74.83 |
| 4. Fixed Costs |  |  |  |  |
| Machinery | Acre | 48.98 | 1.00 | 48.98 |
| Tractors | Acre | 12.10 | 1.00 | 12.10 |
| Land (Net Rent) | Acre | 47.82 | 1.00 | 47.82 |
| Total Fixed Costs |  |  |  | \$ 108.90 |
| 5. Total Costs |  |  |  | \$ 229.07 |
| 6. Returns To Risk And Management |  |  |  | \$ -34.07 |
| Land Charge-1/3 Cost Share <br> Government Program Payments Should Be Considered When Determining Crop Income. |  |  |  |  |
|  |  |  |  |  |
| Breakeven Prices | Are Prod | ced: |  |  |
| To Cover Preharvest Variable Inputs |  |  | 1.535 |  |
|  |  |  | 0.314 |  |
| To Cover Harvest Variable Inputs |  |  | 1.675 |  |
| To Cover All Costs | Except |  | 3.524 |  |

## Price Or Quantity Value Or Your Unit Cost/Unit Per Acre Cost/Acre Value

| 1. Gross Receipts from Production Certified Wheat <br> Feed Wheat <br> Total | Bu. Bu. | $\begin{aligned} & 4.00 \\ & 2.00 \end{aligned}$ | $\begin{aligned} & 55.00 \\ & 10.00 \end{aligned}$ | $\begin{array}{r} 220.00 \\ \$ 20.00 \\ \hline 240.00 \end{array}$ |
| :---: | :---: | :---: | :---: | :---: |
| 2. Variable Costs Preharvest |  |  |  | \$ |
| Anhydrous Ammon. | Lb. | 0.17 | 80.00 | 13.60 |
| 16-20-0 | Lb. | 0.13 | 200.00 | 26.00 |
| Fert. Spreader | Acre | 1.25 | 1.00 | 1.25 |
| Foundation Seed | Lb. | 0.35 | 80.00 | 28.00 |
| Direx 4Lb Ai | Qt. | 6.78 | 0.60 | 4.07 |
| 2-4-D Amine | Qt. | 2.99 | 1.00 | 2.99 |
| Air Spray | Acre | 5.00 | 1.00 | 5.00 |
| Sprayer | Acre | 1.25 | 1.00 | 1.25 |
| Crop Insurance | Acre | 5.00 | 1.00 | 5.00 |
| Field Inspection | Acre | 2.10 | 1.00 | 2.10 |
| Machinery | Acre | 11.40 | 1.00 | 11.40 |
| Tractors | Acre | 5.03 | 1.00 | 5.03 |
| Labor(Tractor \& Machinery) | Hour | 6.00 | 1.04 | 6.24 |
| Other Labor | Hour | 6.00 | 0.10 | 0.60 |
| Interest On Op. Cap. Subtotal, Pre-Harvest | Dol. | 0.11 | 84.34 | $\frac{9.28}{\$ 121.81}$ |
| Harvest Costs |  |  |  | \$ |
| Machinery | Acre | 14.64 | 1.00 | 14.64 |
| Labor(Tractor \& Machinery) | Hour | 6.00 | 0.96 | 5.77 |
| Subtotal, Harvest |  |  |  | \$ 20.41 |
| Total Variable Cost |  |  |  | \$ 142.22 |
| 3. Income Above Variable Costs |  |  |  | \$ 97.78 |
|  |  |  |  | \$ |
| Machinery | Acre | 49.01 | 1.00 | 49.01 |
| Tractors | Acre | 12.17 | 1.00 | 12.17 |
| Land (Net Rent) | Acre | 50.29 | 1.00 | 50.29 |
| Total Fixed Costs |  |  |  | \$ 111.47 |
| 5. Total Costs |  |  |  | \$ 253.70 |
| 6. Net Returns To Risk |  |  |  | \$ -13.70 |

Land Charge-1/3 Cost Share
Approximately 1\% Of Field Plowed For Isolation Strips.
Eighty Five Percent Of Crop Meets Certified Seed Grade.
The Remainder Of The Crop Is Sold As Feed Wheat.

| If 55.00 | Breakeven Prices <br> Bu. Certified Wheat |
| :---: | :---: |
| To Cover Preharvest Variable Inputs | 1.851 |
| To Cover Harvest Variable Inputs | 0.008 |
| To Cover Fixed Inputs | 1.663 |
|  | To Cover All Costs Except Risk |

## Price Or Quantity Value Or Your Unit Cost/Unit Per Acre Cost/Acre Value

1. Gross Receipts From Production Spring Wheat
Total
Bu. $\quad 2.75$
95.00
\$
261.25
$\$ 261.25$ $\qquad$
2. Variable Costs

Preharvest
Wheat Seed
Nitrogen
Phosphate
Custom Fertilize
2-4-D Amine
Water Assessment
Crop Insurance
Machinery
Tractors
Irrigation Supplies
Labor(Tractor \& Machinery) Labor(Irrigation)
Interest On Op. Cap.
Subtotal, Pre-Harvest
Harvest Costs
Custom Combine
Machinery
Labor(Tractor \& Machinery) Subtotal, Harvest

Total Variable Cost
3. Income Above Variable Costs
4. Fixed Costs

Machinery
Tractors
Land (Net Rent)
Total Fixed Costs
5. Total Costs
6. Returns To Risk And Management

Land Charge - Cash Rent Irrigation - Surface Government Program Payments Should Be Considered When Determining Crop Income.
\$

| Lb. | 0.13 | 100.00 | 13.00 |
| ---: | ---: | ---: | ---: |
| Lb. | 0.26 | 135.00 | 35.10 |
| Lb. | 0.21 | 50.00 | 10.50 |
| Acre | 6.00 | 1.00 | 6.00 |
| Qt. | 1.15 | 2.00 | 2.30 |
| Acre | 20.00 | 1.00 | 20.00 |
| Acre | 6.08 | 1.00 | 6.08 |
| Acre | 13.24 | 1.00 | 13.24 |
| Acre | 5.06 | 1.00 | 5.06 |
| Acre | $=$ |  |  |
| Acre | 3.75 | 1.00 | 3.75 |
| Hour | 6.00 | 1.81 | 10.84 |
| Hour | 4.00 | 4.00 | 16.00 |
| Dol. | 0.11 | 48.86 | 5.37 |
| D | $=\square$ |  |  | \$

$27.00 \quad 1.00$
$9.49 \quad 1.00$ $6.00 \quad 0.70$ $\begin{array}{r}27.00 \\ 9.49 \\ 4.18 \\ \hline 40.67 \\ \hline\end{array}$
\$ 187.92 $\qquad$
\$ 73.33 $\qquad$
s
1.00
1.00
1.00
35.36
14.56
$\qquad$
\$ $\frac{80.00}{129.91}$
\$ 317.83 $\qquad$
\$ -56.58 $\qquad$

Breakeven Prices
95.00 Bu. Spring Wheat Are Produced:

To Cover Preharvest Variable Inputs
To Cover Harvest Variable Inputs
To Cover fixed Inputs
To Cover All Costs Except Risk
1.550
0.428
1.368
3.346

Price Or Quantity Value Or Your Unit Cost/Unit Per Acre Cost/Acre Value

1. Gross Receipts From Production Certified Wheat Feed Wheat
Total
2. Variable Costs

Preharvest Foundation Seed Nitrogen Phosphate Custom Fertilize 2-4-D Amine Water Assessment Crop Insurance Field Inspection Machinery Tractors Irrigation Supplies Labor(Tractor \& Machinery) Labor(Irrigation) Other Labor Interest On Op. Cap. Subtotal, Pre-Harvest

Harvest Costs
Custom Combine
Machinery
Labor(Tractor \& Machinery)
Subtotal, Harvest
Total Variable Cost
3. Income Above Variable Costs
4. Fixed Costs

Machinery
Tractors
Land (Net Rent)
Total Fixed Costs
5. Total Costs
6. Returns To Risk And Management

|  | $\$$ |  |  |
| :--- | ---: | ---: | ---: |
| Bu. | 3.75 | 86.00 | 322.50 |
| Bu. | 2.00 | 9.00 | $\$ 18.00$ |
|  |  |  | $\$ 340.50$ |

$\$$

|  |  |  |  |
| ---: | ---: | ---: | ---: |
| Lb. | 0.35 | 100.00 | 35.00 |
| Lb. | 0.26 | 135.00 | 35.10 |
| Lb. | 0.21 | 50.00 | 10.50 |
| Acre | 6.00 | 1.00 | 6.00 |
| Ot. | 1.15 | 2.00 | 2.30 |
| Acre | 20.00 | 1.00 | 20.00 |
| Acre | 6.08 | 1.00 | 6.08 |
| Acre | 2.10 | 1.00 | 2.10 |
| Acre | 13.24 | 1.00 | 13.24 |
| Acre |  |  |  |
| Acre | 5.06 | 1.00 | 5.06 |
| Acre | 3.75 | 1.00 | 3.75 |
| Hour | 6.00 | 1.81 | 10.84 |
| Hour | 4.00 | 4.00 | 16.00 |
| Hour |  |  |  |
| Hour | 6.00 | 0.10 | 0.60 |
| Dol. | 0.11 | 58.46 | 6.43 |
|  |  |  |  |

\$

\$ 213.67 $\qquad$
\$ 126.83 $\qquad$
$\$$
$\begin{array}{r}14.56 \\ 80.00 \\ \hline\end{array}$ $\qquad$
$\$ 343.59$ $\qquad$
\$ -3.09 $\qquad$

Land Charge - Cash Rent Irrigation - Surface
Ninety Percent Of The Crop Meets Certified Seed Grade. The Remainder of The Crop Is Sold As Feed Wheat.

## Breakeven Prices <br> If $\quad 86.00 \mathrm{Bu}$. Certified Wheat Are Produced:

| To Cover Preharvest Variable Inputs | 1.802 |
| ---: | ---: | ---: |
| To Cover Harvest Variable Inputs | 0.264 |
| To Cover Fixed Inputs | 1.301 |
| To Cover All Costs Except Risk | $\mathbf{3 . 7 8 6}$ |

1. Gross Receipts From Production Spr.Wheat-Sw.
Total
2. Variable Costs

Preharvest Wheat Seed Nitrogen Phosphate Custom Fertilize 2-4-D Amine Avenge Sprayer Water Assessment Crop Insurance Machinery Tractors Irrig. Electricity \& Repairs Labor(Tractor \& Machinery) Labor(Irrigation) Interest On Op. Cap.

Subtotal, Pre-Harvest
Harvest Costs Custom Combine Custom Hauling Subtotal, Harvest

Total Variable Cost
3. Income Above Variable Costs
4. Fixed Costs Machinery Tractors Land (Net Rent)
Total Fixed Costs
5. Total Costs
6. Returns To Risk And Management

Irrigated - Center Pivot Land Charge - Cash Rent Government Program Payments Should Be Considered When Determining Crop Income.

Breakeven Prices
If $\quad 110.00$ Bu. Spr.Wheat-Sw. Are Produced:

| To Cover Preharvest Variable Inputs | 1.88 |
| ---: | ---: |
| To Cover Harvest Variable Inputs | 0.53 |
| To Cover Fixed Inputs | 1.44 |
| To Cover All Costs Except Risk | $\mathbf{3 . 8 4}$ |


| Unit | Price Or Quantity <br> Cost/Unit Per Acre |
| :--- | :--- |
| Value Or |  |
| Cost/Acre Value |  |



Irrigated - Center Pivot Land Charge - Cash Rent Ninety Percent Of The Crop Meets Certified Seed Grade. The Remainder of The Crop is Sold As Feed Wheat.

```
            Breakeven Prices
If 99.00 Bu. Certified Wheat Are Produced:
    To Cover Preharvest Variable Inputs
        O Cover Ha
            To Cover Fixed Inputs 1.37
            To Cover All Costs Except Risk 4.10
```

Price Or Quantity Value Or Your Unit Cost/Unit Per Acre Cost/Acre Value

1. Gross Receipts From Production Spr. Wheat-Sw. Total
2. Variable Costs

Preharvest
Wheat Seed

## Nitrogen

Phosphate
Custom Fertilize
2-4-D Amine
Air Spray
Assert
Custom Gr. Spray
Water Assessment
Crop Insurance
Machinery
Irrig. Electricity \& Repairs
Labor(Tractor \& Machinery) Labor(Irrigation)
Interest On Op. Cap.
Subtotal, Pre-Harvest
Harvest Costs
Machinery
Labor(Tractor \& Machinery) Subtotal, Harvest

Total Variable Cost
3. Income Above Variable Costs
4. Fixed Costs

Machinery
Tractors
Land (Net Rent)
Total Fixed Costs
5. Total Costs
6. Returns To Risk And Management

Bu. $\quad 2.60$
95.00
$\$$
247.00 $\qquad$
\$

| Lb. | 0.11 | 100.00 |
| :---: | ---: | ---: |
| Lb. | 0.25 | 100.00 |
| Lb. | 0.20 | 40.00 |
| Acre | 4.50 | 2.00 |
| Qt. | 2.35 | 1.00 |
| Acre | 3.25 | 1.00 |
| Qt. | 27.00 | 0.75 |
| Acre | 4.25 | 1.00 |
| Acre | 11.00 | 1.00 |
| Acre | 11.50 | 1.00 |
| Acre | 14.56 | 1.00 |
| Acre | 7.03 | 1.00 |
| Acre | 25.60 | 1.00 |
| Hour | 6.00 | 1.20 |
| Hour | 4.90 | 6.40 |
| Dol. | 0.11 | 51.56 |

Acre $\quad 14.23 \quad 1.00$
Hour $\quad 6.00 \quad 0.91$
$\$$

| 14.23 |
| ---: |
| $\$ 19.45$ |
| 19.68 |$=$

\$ 216.69 $\qquad$
\$ 30.31 $\qquad$
\$
40.70
$\qquad$
$\$ 139.92$
\$ 356.61 $\qquad$
\$-109.61 $\qquad$

Land Charge - Cash Rent Irrigated - Hand Line Government Program Payments Should Be Considered When Determining Crop Income.

If $95.00 \quad$ Breakeven Prices
If 95.00 Bu. Spr.Wheat-Sw. Are Produced:
To Cover Preharvest Variable Inputs
To Cover Harvest Variable Inputs To Cover Fixed Inputs
To Cover All Costs Except Risk

6. Returns To Risk And Management
\$ -56.62 $\qquad$
Land Charge - Cash Rent Irrigated - Hand Line Ninety Percent Of The Crop Meets Certification Grade. The Remainder Of The Crop Is Sold As Feed Wheat.

