

# **Wheat Enterprises: 1999 Costs and Returns**

**KENTUCKY FARM BUSINESS MANAGEMENT PROGRAM**

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## **WHEAT ENTERPRISES 1999 COSTS and RETURNS**

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The authors are Area Farm Business Analysis Specialist, and Extension Professor and State Farm Management Specialist, respectively, both with the Department of Agricultural Economics, University of Kentucky.

### **A Special Note to Our Readers**

The data for this study are drawn from the detailed financial records of producers cooperating with the Kentucky Farm Business Management Program. The data are not drawn from a random sample of farms in the state. However, these data are the most accurate and detailed farm financial information available and represent the closest approximation to “real world” farm financial data which are available to researchers and educators. Every attempt has been made to select a set of farms for these research studies which are “typical” and have complete financial information available for analysis. These data are carefully cross-checked by our farm management specialists before inclusion in this analysis. Bear in mind that farms included in this study are representative of large, commercial farms producing major commodities and livestock, but not of all farms in Kentucky

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**Acknowledgments**

Special recognition is extended to the Farm Business Analysis Specialists and farmers in the Kentucky Farm Business Management Program. Without their involvement, this study would not have been possible. Considerable time and effort were invested allocating costs of inputs used by more than one enterprise, and making other judgments necessary to ensure the accuracy of the data.

The Area Farm Business Analysis Specialists are:

|                      |                                  |
|----------------------|----------------------------------|
| Rick Costin          | Lincoln Trail Association        |
| Darwin V. Foley      | Louisville Association           |
| Craig D. Gibson      | Ohio Valley Association          |
| David L. Heisterberg | Pennyroyal Association           |
| Rush Midkiff         | Pennyroyal Association           |
| Russell Morgan       | Purchase Association             |
| Terry W. Moss        | Pennyroyal Association           |
| D. Bart Peters       | Pennyroyal Association           |
| Waylon Ramming       | Ohio Valley Association          |
| William M. Snell     | State Coordinator                |
| Gregg Ibendahl       | State Farm Management Specialist |

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## **Introduction**

This is the second annual report on the costs and returns of wheat production based on data provided by the Kentucky Farm Business Management Program (KFBM).<sup>1</sup> This report provides summary financial data on the costs and returns for wheat, and will illustrate the major factors affecting management returns. The purpose of this report is to assist in the planning and control functions of management for producers and provide useful insights to extension personnel, researchers, agribusiness representatives, policy makers and others interested in agriculture. The focus of this report is upon management returns (gross revenue less total production costs); therefore, opportunity costs of resources are included.

### **Wheat Production in Kentucky - Characteristics of the Sample**

For 1999 Kentucky ranked 19<sup>th</sup> among the fifty states in wheat production, producing 24.6 million bushels on 410,000 acres. The wheat crop in Kentucky was valued at \$52.89 million. This makes wheat the fifth highest value crop in the state. Wheat yield was 60 bushels per acre and was valued at 2.15 per bushel.<sup>2</sup>

Data from 29 wheat producers were included in this report. An average crop yield (74.2 bushels) and value (\$168.94 per acre) for the samples were higher than state averages. Results should be considered as representative of producers with higher yields. Consequently, insights into various aspects of Kentucky wheat production should be obtainable from this analysis.

## **Methodology**

Production and financial data were calculated as a component of the complete farm business records of KFBM Program members. Expenses and resource costs were allocated to the wheat enterprise by the cooperating farmers and their Farm Business Analysis Specialist.

In providing data that are not influenced by source of labor (i.e., hired vs. unpaid) and level of indebtedness (debt interest payments), data were standardized for 1999 in contrast to

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<sup>1</sup>The Kentucky Farm Business Management Program is a cooperative effort between the Department of Agricultural Economics at the University of Kentucky College of Agriculture and incorporated Farm Analysis Groups. Membership is located in 75 counties in Central and Western Kentucky. Ten Extension Farm Business Analysis Specialists work with these farmers on a regularly scheduled basis to ensure accurate and complete records are maintained. At year's end, they provide each farmer with a complete summary and analysis of the farm business.

<sup>2</sup> Kentucky Agricultural Statistics, 1999-2000, United States Department of Agriculture and Kentucky Department of Agriculture

1998. This was achieved by including imputed charges for unpaid labor and capital investments.<sup>3</sup> Performance was measured through the calculation of residual returns to management or management returns. All data are presented on a per acre basis. The standardization of data between farms with varying quantities of unpaid labor and equity contributions provide an effective measure for comparing performance. Management returns per acre was the variable used to segregate data between high return and low return farms.

The following definitions utilized within the farm analysis program are important to the proper interpretation of the material presented:

Total Acre - - The average number of acres produced per farm sample in this study and from which total revenue will be shared with landlords through cash rents or crop share.

Operator Acre - - The number of acres from which the farm operator receives an equivalent share of the crop. For instance if a farmer rents 120 acres on a 2/3 operator, 1/3 landlord share, the renter has 80 operator acres. If the farmer owns or cash rents 120 acres, this would be defined as 120 operator acres.

Total Crop Revenue - - This is the total of farm operator cash sales of crop produced and sold during 1999, combined with the value of the 1999 crop used for feed and seed, and the year end inventory value of the crop produced in 1999. No crop insurance indemnity payments or USDA FSA payments of any kind have been included. Ending inventory value is the value of grain on hand December 31, using either an average statewide price or a contract price for the portion, if any, that was forward priced. Feed and seed value was established using a statewide price for wheat averaged over the course of the year. Total operator revenue is divided by operator acres to arrive at per acre crop revenue as presented in this report. This per acre amount will be comparable to crop revenue per total acre.

Total Operating Costs - - This represents the actual cash expenditures, with accrual adjustments, for farm operators included in the 1999 sample plus an imputed interest charge of 8.5 percent on equity capital contributed for operating expenses. In arriving at per acre amounts through the KFBM system, the percentage of certain cost items (i.e. fertilizer, chemicals, seed, machinery costs, labor) provided by the operator in excess of the percentage crop received in share arrangements is subtracted and redefined as a crop share rental costs. The balance is then divided by operator acres.

Returns Over Operating Costs - - Is calculated by subtracting total operating costs from total crop revenue.

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<sup>3</sup> A specific explanation of these imputed charges is included in the following explanation of costs and returns.

Unpaid Labor - - Is the imputed charge for any operator labor contribution toward producing the crop. The imputed rate charged for unpaid labor is \$24,000 per 12 months equivalent or \$2000 per month. The percentage of this input contributed by the operator in crop share arrangements (generally 100%) in excess of the percentage revenue received is subtracted. The balance is then divided by operator acres.

Machinery and Building Depreciation - - Taken from depreciation schedules designed to reflect economic depreciation as maintained by the KFBM Program, equipment is generally depreciated over a ten-year period. Most farm buildings, with the exception of grain bins or single purpose structures, are depreciated over a twenty-five year period. As with operating costs and unpaid labor charges, an adjustment is made in crop share arrangements where the percentage of depreciation expense by the operator exceeds the percentage revenue received.

Interest Charge on Non Land Investment - - Represents the cash plus imputed equity interest charges for the average annual capital investment for machinery, buildings, and inventory. The imputed rate is 8.5 percent.

Interest Charge on Land Values - - Is the imputed charge for the average annual capital investment for land. For this calculation, 100 percent land ownership is assumed. A rate of 5 percent is charged on land values assigned through the KFBM system using an agricultural use index. This land charge is in lieu of any cash rent, share rental cost or mortgage interest paid on land.

Management Returns - - Is the net return remaining to reward management after charges are made for all other factors of production. It is calculated by deducting the total of all production costs from total revenue.

### **Management Returns for State**

Residual returns to management from wheat production represented in this sample of producers was (\$61.22) per acre in 1999 (Table 1)<sup>4</sup>. Only a 0.03% rate of return was generated on the investment in the wheat enterprise.

Low price continues to be the major factor inhibiting profitability and higher returns from wheat. Total crop revenue from cash sales, feed use, seed use, and inventory value was \$168.94 per acre. With yields of 74.2 bushels per acre, the value of wheat produced in 1999 was \$2.27 per bushel<sup>5</sup>. By comparison the per bushel value of wheat produced as reflected in the 1998

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<sup>4</sup> Dollar amounts in parentheses ( ) are negative numbers in this report.

<sup>5</sup> This value per bushel does not include any government LDP payments. A sample of 38 producers in the Pennyroyal Area received an average of \$ .49 per bushel LDP payment.

report was \$2.40 per bushel with a yield of 49 bushels per acre. The 10 year average old and new crop prices received by KFBM cooperators has been \$3.45 and 3.07 respectively.<sup>6</sup>

The total production costs in 1999 was \$230.17 per acre. The price required to cover all costs, given the 74.2 bushel yield was \$3.10 per bushel.

Price offerings, in the fall of 1998 and spring of 1999, for new crop wheat ranged from \$2.50 to \$2.90 per bushel depending on contract month and location. Only by pricing a substantial portion (if not all) of the crop at these prices, and by capturing a \$ .30 or better loan deficiency payment, could a producer come close to generating positive management returns with the yields and costs as exhibited. It is evident from the \$2.22 average price received for new crop that little of the 1999 crop was forward priced at peak levels early in the marketing season.

Also evident from 1999 results as presented, is that producers cannot always produce themselves out of a poor market. At the \$2.28 per bushel crop value generated in 1999, a statewide yield of 100 bushels per acre would have been required to cover all costs, a yield that is considerably above historical averages. (See Table 4.)

Wheat producers did generate sufficient revenue to provide a \$27.17 return over operating costs in 1999. Consequently, the 1999 wheat crop provided a contribution to the producers short run cash flow, but failed to cover the total non-cash or overhead costs of \$88.39 per acre.

### **Management Returns by Area**

Revenue and cost averages were also computed by area (Table 2). Management returns were negative for all areas averaged in the sample, but results varied across the state. Because of negative returns, rankings by areas must be presented in terms of smallest losses indicating superior results.

While Ohio Valley area producers had management losses of \$35.53 per acre from their 1999 wheat crop, they nevertheless fared somewhat better than the other groups. Pennyroyal area producers finished second with management losses of \$54.87 per acre. Purchase group producers had losses of \$96.09 per acre. No Central Kentucky numbers are given due to the small number of wheat producers that make-up this area sub-sample.

Lower production costs was the major reason the Ohio Valley group topped the other areas in terms of net returns. The Ohio Valley group costs of \$172.57 per acre was followed by the Purchase costs of \$217.80 and the Pennyroyal costs of \$242.39.

Because of yields the Pennyroyal producers surpassed the other areas in terms of crop revenue, generating \$187.52 per acre. The Ohio Valley group finished second with per acre crop

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<sup>6</sup> “1999 Annual Financial Summary, Kentucky Farm Business Management Program,” Ibendahl, Morgan, Heisterberg.

revenue of \$137.04. Crop revenue for the Purchase group was \$121.71. The \$2.27 per bushel value of wheat produced in the Pennyroyal Area was the lowest of all three groups.

Operating costs, as a whole, vary greatly across the state, varying from high to low by about \$37 per acre. Significant differences across the state in certain operating cost items such as hired labor, pesticides, seed, and repairs contribute to these results.

There was less variation in non-cash costs. These costs for the Ohio Valley area were below the other two groups, a small reason that this group was at the top in net returns.

### **Variability in Cost and Returns**

In order to study some of the factors that may contribute to income variability, additional averages were computed for those producers who ranked in the high third and the low third of the overall group (Table 1). These rankings were based on management returns. The one-third of farms with the highest (least negative) management returns are high third farms while the one-third of farms with the lowest (most negative) management returns are low third farms.

Management returns varied significantly as indicated in all the tables. The high group in the state had management returns of (\$6.62) per acre compared to (\$113.18) for the low group, a difference of \$106.56. The variation in total revenue (a function of yield and crop value) was \$43.87 per acre, accounting for 40 percent of the difference in net returns. This variation in total revenue was due primarily to a difference in the selling price of the wheat and to a lesser extent, yield.

Operating expenses of the state high third group were \$123.36 per acre compared to \$156.13 for the low third, a difference of \$32.77. This variation in operating costs accounted for 30 percent of the difference in net returns. While costs of the high third group were lower than the low third group for each operator cost item, the \$9.89 difference in machinery repair costs was the most notable.

The difference in non-cash costs between the high and low third groups statewide was \$31.92 per acre, accounting for 30 percent of the net return difference. The biggest difference in non-cash costs was machinery depreciation.

As all costs (cash and non-cash) are reviewed, it is obvious that machinery costs account for a significant percentage of the difference in net results. Total machinery costs including repairs, machine hire, fuel, light vehicle expense and depreciation was \$33.76 per acre lower for the high third compared to the low third.

### **Comparison to 1998**

Wheat producers had a far better year in 1999, than what they experienced in 1998. With only a 49 bushel yield in 1998, wheat revenues failed to even cover cash costs (Table 3). Total

wheat revenue in 1999 was \$51.25 per acre higher, due to an increase in yield to 74.2 bushels per acre. This improved yield more than offset a \$ .12 per bushel lower price. The yield difference exhibited over the last two years indicates the significance that winter weather plays in Kentucky wheat production.

In response to the poor 1998 crop, producers also cut their costs on the 1999 wheat crop. Total operating costs were \$23.73 lower in 1999, primarily from fertilizer and seed costs. The combination of higher revenue and lower costs provided producers \$76.16 more net income per acre in 1999.

### **Summary and Analysis**

The success of any farm enterprise can be measured by the contribution it makes to the short run cash flow and long term profitability of the farm business. The wheat crop in 1999 did, on average, provide a return over operating costs, thus facilitating short run cash flow needs. On the other hand total crop revenue did not cover all costs of production. The consequences for the individual producer of generating a management loss from any enterprise will depend on the producer's term debt in conjunction with projected machinery and/or building replacement requirements.

It should also be recognized that the wheat crop is only one-half of a cropping system that generally includes double-crop soybeans as the other component of the cropping system. Therefore, when evaluating the profitability of wheat, the other crop must be combined with wheat to evaluate the profitability of that crop acre, relative to other choices of enterprises that could have been made.

The information presented in this report illustrates the difficulty most producers in Kentucky had in generating a profit from wheat in 1999. However, it also stresses the importance of recognizing those areas for improvement required in order to enhance the opportunities for success at a time when wheat prices are generally below break-even levels. A comparison of high and low return producers can assist with this task.

Averages of the high-third and low-third producers illustrated several reasons why some producer's level of success may be higher than others. Obviously much of the variation in crop revenue during 1999 can be attributed to those factors beyond the farmers control, such as weather and yields. Still, the importance of maximizing crop revenue through good marketing skills and the use of government programs cannot be overlooked.

Cost control is also important. Tables in this report pointed out how variation with certain costs can influence the bottom line. Variations in machinery costs were particularly noteworthy.

There was no single factor which stood above the rest in terms of being the overall key to profitability. What is more evident from this information as presented is the need for farmers to excel in several areas (production, marketing, cost control) in order to succeed when profit margins are as small as they were in 1999.

**Table 1 Wheat Enterprises for 1999- Overall Average & By Management Results**

|  | <b>Average<br/>All Farms</b> | <b>High<br/>Third</b>  | <b>Middle<br/>Third</b> | <b>Low<br/>Third</b>     |
|--|------------------------------|------------------------|-------------------------|--------------------------|
| Number of Farms                        | 29                           | 10                     | 9                       | 10                       |
| Total Acres                            | 397.7                        | 231.9                  | 708.1                   | 284.1                    |
| Operator Acres                         | 372.8                        | 218.4                  | 666.2                   | 263.0                    |
| Yield per Acre                         | 74.2                         | 78.38                  | 75.0                    | 68.9                     |
| <b>Revenue - Per Acre</b>              |                              |                        |                         |                          |
| Cash Sales                             | \$97.42                      | \$77.17                | \$97.00                 | \$115.19                 |
| Feed & Seed Value                      | 3.39                         | 3.56                   | 3.10                    | 3.92                     |
| Inventory Value                        | <u>68.13</u>                 | <u>105.30</u>          | <u>73.48</u>            | <u>25.05</u>             |
| <b>Total Crop Revenue</b>              | <b>\$168.94</b>              | <b>\$186.03</b>        | <b>\$173.59</b>         | <b>\$144.16</b>          |
| <b>Operating Expenses</b>              |                              |                        |                         |                          |
| Fertilizer                             | \$35.03                      | \$29.40                | \$35.21                 | \$39.29                  |
| Pesticides                             | 24.77                        | 23.65                  | 22.52                   | 30.85                    |
| Seed                                   | 15.38                        | 16.29                  | 16.05                   | 13.12                    |
| Utilities                              | 1.83                         | 1.55                   | 1.83                    | 2.08                     |
| Machinery Repairs                      | 13.56                        | 8.51                   | 13.73                   | 17.38                    |
| Machine Hire                           | 4.85                         | 3.72                   | 3.98                    | 7.78                     |
| Fuel & Oil                             | 6.44                         | 5.47                   | 6.81                    | 6.41                     |
| Light Vehicle Expenses                 | 0.02                         | 0.04                   | 0.00                    | 0.03                     |
| Hired Labor                            | 19.80                        | 13.10                  | 22.83                   | 18.44                    |
| Drying & Storage                       | 1.64                         | 1.65                   | 1.85                    | 1.16                     |
| Building Rent                          | 0.32                         | 0.52                   | 0.39                    | 0.00                     |
| Building Repair                        | 1.24                         | 1.19                   | 1.31                    | 1.10                     |
| Insurance                              | 4.63                         | 4.43                   | 3.84                    | 6.58                     |
| Real Estate Tax                        | 1.54                         | 1.08                   | 1.60                    | 1.78                     |
| Miscellaneous                          | 2.54                         | 3.56                   | 2.21                    | 2.42                     |
| Interest Charge on Operating           | <u>8.18</u>                  | <u>9.19</u>            | <u>8.02</u>             | <u>7.70</u>              |
| <b>Total Operating Costs</b>           | <b>\$141.77</b>              | <b>\$123.36</b>        | <b>\$142.18</b>         | <b>\$156.13</b>          |
| <b>Return Over Operating Costs</b>     | <b>\$27.17</b>               | <b>\$62.67</b>         | <b>\$31.41</b>          | <b>(\$11.97)</b>         |
| <b>Non-Cash Costs</b>                  |                              |                        |                         |                          |
| Unpaid Labor                           | \$11.68                      | \$11.62                | \$9.66                  | \$16.32                  |
| Machinery Depreciation                 | 21.33                        | 8.10                   | 23.23                   | 27.99                    |
| Building Depreciation                  | 2.06                         | 0.79                   | 2.46                    | 2.21                     |
| Interest Charge on Non Land Investment | 5.98                         | 2.11                   | 6.77                    | 7.42                     |
| Interest Charge on Land Values         | <u>47.34</u>                 | <u>46.66</u>           | <u>47.62</u>            | <u>47.27</u>             |
| <b>Total Non-Cash Costs</b>            | <b>\$88.39</b>               | <b>\$69.29</b>         | <b>\$89.73</b>          | <b>\$101.21</b>          |
| <b>TOTAL ALL COSTS</b>                 | <b>\$230.17</b>              | <b>\$192.65</b>        | <b>\$231.91</b>         | <b>\$257.35</b>          |
| <b>MANAGEMENT RETURNS</b>              | <b><u>(\$61.22)</u></b>      | <b><u>(\$6.62)</u></b> | <b><u>(\$58.32)</u></b> | <b><u>(\$113.18)</u></b> |

**Table 1A. Wheat Enterprises for 1999 - Overall Average & By Management Results**

|   | <b>Average<br/>All Farms</b> | <b>High<br/>Third</b> | <b>Middle<br/>Third</b> | <b>Low<br/>Third</b> |
|---|------------------------------|-----------------------|-------------------------|----------------------|
| <b>REFERENCE</b>                        |                              |                       |                         |                      |
| <b>Prices</b>                           |                              |                       |                         |                      |
| Price Required to Cover Operating Costs | \$1.91                       | \$1.57                | \$1.90                  | \$2.26               |
| Price Required to Cover Total Costs     | 3.10                         | 2.46                  | 3.09                    | 3.73                 |
| Average Price Received for New Crop     | 2.22                         | 2.30                  | 2.28                    | 2.11                 |
| <b>Labor</b>                            |                              |                       |                         |                      |
| Paid Labor Months                       | 3.61                         | 2.17                  | 5.72                    | 3.16                 |
| Unpaid Labor Months                     | 2.19                         | 1.31                  | 3.06                    | 2.30                 |
| Acres Per 12 Month Equivalent           | 822.3                        | 800.3                 | 967.9                   | 625.2                |
| <b>Investment</b>                       |                              |                       |                         |                      |
| Crop Inventory                          | \$58.81                      | \$102.10              | \$54.48                 | \$32.72              |
| Machinery Investment                    | 118.83                       | 44.15                 | 133.74                  | 146.86               |
| Building Investment                     | 21.97                        | 5.56                  | 25.44                   | 27.69                |
| Real Estate Investment                  | <u>946.84</u>                | <u>933.24</u>         | <u>952.42</u>           | <u>945.40</u>        |
| <b>Total Investment</b>                 | <b>\$1,146.44</b>            | <b>\$1,085.05</b>     | <b>\$1,166.08</b>       | <b>\$1,152.66</b>    |
| Rate Earned on Investment               | 0.03%                        | 5.22%                 | 0.37%                   | -4.54%               |
| <b>Land Rent</b>                        |                              |                       |                         |                      |
| Average Cash Rent Per Acre              | \$36.16                      | \$38.77               | \$26.26                 | \$32.44              |
| Average Cash Rent Per Bushel            | 0.49                         | 0.49                  | 0.35                    | 0.47                 |
| Cash Rent as a % of Crop Returns        | 21.41%                       | 20.84%                | 15.13%                  | 22.50%               |
| Cash Rent as a % of Land Value          | 3.82%                        | 4.15%                 | 2.76%                   | 3.43%                |

**Table 2. Wheat Enterprises for 1999 - By Area of State**

| <b>Geographic Area</b>                 | <b>Central<br/>Kentucky</b> | <b>Ohio<br/>Valley</b>  | <b>Pennyroyal</b>       | <b>Purchase</b>         |
|--|-----------------------------|-------------------------|-------------------------|-------------------------|
| Number of Farms                        | 6                           | 6                       | 11                      | 6                       |
| Total Acres                            | 468.7                       | 98.8                    | 583.6                   | 284.7                   |
| Operator Acres                         | 434.7                       | 83.8                    | 562.5                   | 251.8                   |
| Yield per Acre                         | 70.4                        | 59.6                    | 82.6                    | 51.2                    |
| <b>Revenue - Per Acre</b>              |                             |                         |                         |                         |
| Cash Sales                             | \$142.24                    | \$135.55                | \$82.51                 | \$172.17                |
| Feed & Seed Value                      | 1.07                        | 0.00                    | 4.25                    | 5.02                    |
| Inventory Value                        | <u>15.08</u>                | <u>68.13</u>            | <u>100.75</u>           | <u>48.27</u>            |
| <b>Total Crop Revenue</b>              | <b>\$158.39</b>             | <b>\$137.04</b>         | <b>\$187.52</b>         | <b>\$121.71</b>         |
| <b>Operating Expenses</b>              |                             |                         |                         |                         |
| Fertilizer                             | \$26.36                     | \$33.47                 | \$37.01                 | \$42.37                 |
| Pesticides                             | 22.24                       | 5.91                    | 26.71                   | 27.48                   |
| Seed                                   | 13.12                       | 21.94                   | 16.63                   | 12.03                   |
| Utilities                              | 1.25                        | 1.74                    | 2.17                    | 1.50                    |
| Machinery Repairs                      | 13.82                       | 8.48                    | 14.61                   | 10.50                   |
| Machine Hire                           | 4.72                        | 4.77                    | 4.86                    | 5.11                    |
| Fuel & Oil                             | 5.84                        | 3.85                    | 7.08                    | 5.74                    |
| Light Vehicle Expenses                 | 0.00                        | 0.28                    | 0.00                    | 0.02                    |
| Hired Labor                            | 26.77                       | 5.69                    | 20.03                   | 11.48                   |
| Drying & Storage                       | 3.11                        | 3.09                    | 0.71                    | 2.43                    |
| Building Rent                          | 0.90                        | 0.00                    | 0.00                    | 0.76                    |
| Building Repair                        | 0.57                        | 1.76                    | 1.33                    | 1.84                    |
| Insurance                              | 2.60                        | 2.04                    | 5.78                    | 4.26                    |
| Real Estate Tax                        | 1.71                        | 1.27                    | 1.44                    | 1.75                    |
| Miscellaneous                          | 3.09                        | 1.06                    | 2.58                    | 1.89                    |
| Interest Charge on Operating           | <u>6.02</u>                 | <u>4.44</u>             | <u>9.39</u>             | <u>8.17</u>             |
| <b>Total Operating Costs</b>           | <b>\$132.12</b>             | <b>\$99.82</b>          | <b>\$150.34</b>         | <b>\$137.32</b>         |
| <b>Return Over Operating Costs</b>     | <b>\$26.28</b>              | <b>\$37.22</b>          | <b>\$37.18</b>          | <b>(\$15.60)</b>        |
| <b>Non-Cash Costs</b>                  |                             |                         |                         |                         |
| Unpaid Labor                           | \$10.05                     | \$13.84                 | \$11.36                 | \$15.08                 |
| Machinery Depreciation                 | 18.50                       | 9.21                    | 24.14                   | 18.76                   |
| Building Depreciation                  | 3.01                        | 1.82                    | 1.91                    | 1.10                    |
| Interest Charge on Non Land Investment | 5.36                        | 2.40                    | 6.62                    | 5.65                    |
| Interest Charge on Land Values         | <u>50.40</u>                | <u>45.48</u>            | <u>48.02</u>            | <u>39.90</u>            |
| <b>Total Non-Cash Costs</b>            | <b>\$87.32</b>              | <b>\$72.75</b>          | <b>\$92.05</b>          | <b>\$80.48</b>          |
| <b>TOTAL ALL COSTS</b>                 | <b>\$219.44</b>             | <b>\$172.57</b>         | <b>\$242.39</b>         | <b>\$217.80</b>         |
| <b>MANAGEMENT RETURNS</b>              | <b><u>(\$61.04)</u></b>     | <b><u>(\$35.53)</u></b> | <b><u>(\$54.87)</u></b> | <b><u>(\$96.09)</u></b> |

**Table 2A. Wheat Enterprises for 1999 - By Area of State**

| Geographic Area                           | Central<br>Kentucky | Ohio<br>Valley  | Pennyroyal        | Purchase        |
|---|---------------------|-----------------|-------------------|-----------------|
| <b>REFERENCE</b>                          |                     |                 |                   |                 |
| <b>Prices</b>                             |                     |                 |                   |                 |
| Price Required to Cover Operating Costs   | \$1.88              | \$1.67          | \$1.82            | \$2.68          |
| Price Required to Cover Total Costs       | 3.12                | 2.89            | 2.93              | 4.25            |
| Average Price Received for New Crop       | 2.18                | 2.29            | 2.21              | 2.22            |
| <b>Labor</b>                              |                     |                 |                   |                 |
| Paid Labor Months                         | 5.00                | 0.30            | 5.72              | 1.66            |
| Unpaid Labor Months                       | 2.13                | 0.57            | 3.27              | 1.90            |
| Acres Per 12 Month Equivalent             | 788.2               | 1,355.4         | 778.7             | 961.4           |
| <b>Investment</b>                         |                     |                 |                   |                 |
| Crop Inventory                            | \$15.55             | \$8.98          | \$80.04           | \$63.10         |
| Machinery Investment                      | 99.24               | 39.66           | 133.61            | 118.47          |
| Building Investment                       | 27.00               | 16.89           | 22.11             | 14.44           |
| Real Estate Investment                    | <u>1,007.92</u>     | <u>909.66</u>   | <u>960.48</u>     | <u>797.92</u>   |
| <b>Total Investment</b>                   | <b>\$1,149.70</b>   | <b>\$975.19</b> | <b>\$1,196.24</b> | <b>\$993.93</b> |
| Rate Earned on Investment                 | 0.07%               | 1.74%           | 0.82%             | -4.55%          |
| <b>Land Rent</b>                          |                     |                 |                   |                 |
| Average Cash Rent Per Acre                | \$29.20             | \$46.64         | \$41.83           | \$35.50         |
| Average Cash Rent Per Bushel              | 0.41                | 0.78            | 0.51              | 0.69            |
| Cash Rent as a Percentage of Crop Returns | 18.43%              | 34.03%          | 22.31%            | 29.17%          |
| Cash Rent as a Percentage of Land Value   | 2.90%               | 5.13%           | 4.36%             | 4.45%           |

**Table 3. Comparison of Kentucky Wheat Enterprises for 1998 and 1999.**

|   | <u>1998</u>       | <u>1999</u>      | <u>Difference</u> |
|---|-------------------|------------------|-------------------|
| Number of Farms                             | 50                | 29               |                   |
| Total Acres                                 | NA                | 397.7            |                   |
| Operator Acres                              | 326               | 372.8            |                   |
| Yield per Acre                              | 49                | 74.2             | 25.21             |
| <b>Revenue - Per Acre</b>                   |                   |                  |                   |
| Cash Sales                                  | \$75.26           | \$97.42          |                   |
| Feed & Seed Value                           | 2.08              | 3.39             |                   |
| Inventory Value                             | <u>40.35</u>      | <u>68.13</u>     |                   |
| <b>Total Crop Revenue</b>                   | <b>\$117.69</b>   | <b>\$168.94</b>  | <b>\$51.25</b>    |
| <b>Operating Expenses</b>                   |                   |                  |                   |
| Fertilizer                                  | \$42.81           | \$35.03          | \$(7.78)          |
| Pesticides                                  | 26.53             | 24.77            | (1.76)            |
| Seed  | 27.37             | 15.38            | (11.99)           |
| Utilities                                   | 2.39              | 1.83             | (0.56)            |
| Machinery Repairs                           | 13.36             | 13.56            | 0.20              |
| Machine Hire                                | 6.27              | 4.85             | (1.42)            |
| Fuel & Oil                                  | 6.01              | 6.44             | 0.43              |
| Light Vehicle Expenses                      | 0.53              | 0.02             | (0.51)            |
| Hired Labor                                 | 16.62             | 19.80            | 3.18              |
| Drying & Storage                            | 1.35              | 1.64             | 0.29              |
| Building Rent & Repair                      | 2.57              | 1.56             | (1.01)            |
| Insurance                                   | 5.89              | 4.63             | (1.26)            |
| Real Estate Tax                             | 1.05              | 1.54             | 0.49              |
| Miscellaneous                               | 3.34              | 2.54             | (0.80)            |
| <b>Total Operating Costs</b>                | <b>\$156.09</b>   | <b>\$133.59</b>  | <b>\$(22.50)</b>  |
| <b>Return Over Operating Costs</b>          | <b>(\$38.40)</b>  | <b>\$35.35</b>   | <b>\$73.75</b>    |
| <b>Interest &amp; Land Costs</b>            |                   |                  |                   |
| Cash Interest                               | 13.70             | 24.01            | 10.31             |
| Land Costs                                  | 31.55             | 21.20            | (10.35)           |
| <b>Depreciation</b>                         |                   |                  |                   |
| Machinery Depreciation                      | 20.89             | 21.33            | 0.44              |
| Building Depreciation                       | 3.63              | 2.06             | (1.57)            |
| <b>Operating Expense &amp; Depreciation</b> | <b>\$225.86</b>   | <b>\$202.19</b>  | <b>\$(23.67)</b>  |
| <b>NET INCOME</b>                           | <b>(\$108.17)</b> | <b>(\$33.25)</b> | <b>\$74.92</b>    |

**Table 4. Historical Average Wheat Yields by Area.**

| <u>Production<br/>Year</u> | <u>Purchase<br/>Area</u> | <u>Pennyroyal<br/>Area</u> | <u>Ohio Valley<br/>Area</u> | <u>Central<br/>Kentucky</u> |
|----------------------------|--------------------------|----------------------------|-----------------------------|-----------------------------|
| 1991                       | 21                       | 38                         | 30                          | 20                          |
| 1992                       | 56                       | 66                         | 62                          | 41                          |
| 1993                       | 41                       | 60                         | 53                          | 51                          |
| 1994                       | 54                       | 76                         | 65                          | 53                          |
| 1995                       | 51                       | 61                         | 59                          | 44                          |
| 1996                       | 54                       | 63                         | 49                          | 45                          |
| 1997                       | 57                       | 67                         | 63                          | 43                          |
| 1998                       | 45                       | 52                         | 47                          | 50                          |
| 1999                       | 50                       | 77                         | 70                          | 65                          |
| Most Recent 5-year Average | 51.4                     | 63.9                       | 57.6                        | 49.4                        |

**Table 5. Historical Calendar Year Average Selling Prices for Wheat.**

| <u>Production<br/>Year</u> | <u>Purchase<br/>Area</u> | <u>Pennyroyal<br/>Area</u> | <u>Ohio Valley<br/>Area</u> | <u>Central<br/>Kentucky</u> |      |
|----------------------------|--------------------------|----------------------------|-----------------------------|-----------------------------|------|
| 1991                       | \$2.14                   | \$2.65                     | \$2.46                      | \$2.22                      |      |
| 1992                       | 3.43                     | 3.34                       | 3.32                        | 3.05                        |      |
| 1993                       | 2.85                     | 2.84                       | 3.01                        | 2.75                        |      |
| 1994                       | 3.07                     | 3.15                       | 3.09                        | 2.95                        |      |
| 1995                       | 3.73                     | 3.66                       | 3.66                        | 3.22                        |      |
| 1996                       | 4.14                     | 4.10                       | 4.36                        | 3.90                        |      |
| 1997                       | 3.46                     | 3.64                       | 3.50                        | 3.19                        |      |
| 1998                       | Old Crop                 | 3.00                       | 2.97                        | 3.21                        | 2.68 |
|                            | New Crop                 | 2.36                       | 2.36                        | 2.35                        | 2.30 |
| 1999                       | Old Crop                 | 2.79                       | 2.39                        | 2.72                        | 2.29 |
|                            | New Crop                 | 2.29                       | 2.45                        | 2.35                        | 2.15 |