



YELLOW CORN ENTERPRISES

1999 COSTS AND RETURNS

KENTUCKY FARM BUSINESS MANAGEMENT PROGRAM

Terry W. Moss
Steven K. Riggins

Agricultural Economics - Extension No. 2001-09

August 2001

University of Kentucky
Department of Agricultural Economics
400 Charles E. Barnhart Bldg.
Lexington, KY 40546-0276

Phone: 859-257-5762

Fax: 859-323-1913

URL: <http://www.uky.edu/Ag/AgEcon/>

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

About the Authors

The authors are Area Farm Business Analysis Specialist, and Extension Professor and State Grain Marketing 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.

Table of Contents

Introduction	1
Yellow Corn Production in Kentucky: Characteristics of the Sample	1
Methodology	1
Management Returns for State	3
Management Returns by Area	4
Variability in Cost and Returns	5
Summary	6

Tables

Table 1. All Yellow Corn Enterprises - Cost & Returns	7
Table 1A. All Yellow Corn Enterprises - Misc Information	8
Table 2. All Yellow Corn Enterprises by Area - Costs & Returns.	9
Table 2A. All Yellow Corn Enterprises by Area - Misc Information	10
Table 3. Pennyroyal Association Yellow Corn Enterprises - Costs and Returns	11
Table 3A. Pennyroyal Association Yellow Corn Enterprises - Miscellaneous Information ..	12
Table 4. Ohio Valley Association Yellow Corn Enterprises - Costs and Returns	13
Table 4A. Ohio Valley Association Yellow Corn Enterprises - Miscellaneous Information ..	14
Table 5. Comparison of Yellow Corn Enterprises for 1998 and 1999	15
Table 6. Historical Average Yellow Corn Yields by Area	16
Table 7. Historical Calendar Year Average Selling Price for Yellow Corn	16

Introduction

This is the second annual report on the costs and returns of yellow corn production based on data provided by the Kentucky Farm Business Management Program (KFBM).¹ This report provides summary financial data on the costs and returns for yellow corn, 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.

As this is the second report on yellow corn taken from the KFBM data, no trend analysis is presented. One table is devoted to comparison of 1998 and 1999 data. As future annual data are reported, trend information will become available.

Corn Production in Kentucky - Characteristics of the Sample

For 1999 Kentucky ranked 14th among the fifty states in corn produced for grain, producing 123.9 million bushels on 1.18 million acres. The corn crop (for grain) in Kentucky was valued at \$266.385 million. This makes corn the third highest value crop in the state behind tobacco and hay. Corn yield was 105 bushels per acre and was valued at 2.15 per bushel.²

Data from 50 corn producers were included in this report, representing 28705 acres of yellow corn. Average crop yield (118.6 bushels) and value (250.54) 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 corn 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 yellow corn enterprise by the cooperating farmers and their Farm Business Analysis Specialist.

¹The 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.

² Kentucky Agricultural Statistics, 1999-2000, United States Department of Agriculture and Kentucky Department of Agriculture

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 1998. This was achieved through including imputed charges on unpaid labor and capital investments.³ 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 the year end inventory value 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 value was established using a statewide price for corn 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.

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

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

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 4.5 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 yellow corn production represented in this sample of fifty producers was (\$88.01) per acre in 1999 (Table 1).⁴ Only a 1.33% rate of return was generated on the investment in the corn enterprise.

Low prices continues to be the major factor inhibiting profitability and higher returns from yellow corn. Total crop revenue from cash sales, feed use and inventory value was \$250.54 per acre. With yields of 118.6 bushels per acre, the value of corn produced in 1999 was \$2.11 per bushel.⁵ By comparison the per bushel value of corn produced as reflected in the 1998 report was \$2.31 per bushel with a yield of 128 bushels per acre. The 10 year average old and new crop prices received by KFBM cooperators has been \$2.64 and 2.51 respectively.⁶

⁴Dollar amounts in parentheses () are negative numbers in this report.

⁵This value per bushel does not include any government LDP payments. A sample of 40 producers in the Pennyroyal Area received an average of \$.23 per bushel LDP payment.

⁶ "1999 Annual Financial Summary, Kentucky Farm Business Management Program," Ibendahl, Morgan, Heisterberg.

The total production costs in 1999 was \$338.55 per acre. The price required to cover all costs, given the 118.6 bushel yield was \$2.85 per bushel.

Price offerings, in the spring of 1999, for new crop yellow corn ranged from \$2.40 to \$2.55 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 cent 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 \$2.06 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 \$2.11 per bushel crop value generated in 1999, a statewide yield of 160 bushels per acre would have been required to cover all costs, a yield that is considerably above historical averages (Table 6).

Yellow corn producers did generate sufficient revenue to provide a \$53.92 return over operating costs in 1999. Consequently, the 1999 yellow corn crop provided a contribution to the producers short run cash flow, but failed to cover the total non-cash or overhead costs of \$141.93 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 Pennyroyal area producers had management losses of \$79.45 per acre from their 1999 yellow corn crop, they, nevertheless, fared somewhat better than the other groups. Purchase area producers finished a very close second with management losses of \$79.82 per acre. Ohio Valley group producers had losses of \$84.19 per acre with the Central Kentucky group finishing fourth with losses of \$119.96.

Higher yields was the sole reason the Pennyroyal group topped the other areas in terms of net returns. The Pennyroyal group yield of 125.9 bushels per acre was followed by the Ohio Valley (averaging 121.3 bushels per acre) the Purchase area (113.2 bushels per acre) and the Central Kentucky area (101.1 bushels per acre).

Because of yields the Pennyroyal producers surpassed the other areas in terms of crop revenue, generating \$262.55 per acre. The Ohio Valley group finished second with per acre crop revenue of \$257.12. Crop revenue for the Purchase and Central Kentucky groups was \$248.16 and \$213.15 respectively. The \$2.09 per bushel value of corn produced in the Pennyroyal Area was the lowest of all four groups.

Total costs for the Pennyroyal group, at 342.00 per acre, was the highest of the four groups represented. The Ohio Valley total costs were \$341.31, the Central Kentucky group had costs of \$333.11 per acre and the Purchase area's costs were \$327.98.

Operating costs, as a whole, were somewhat comparable across the state, varying from high to low by less than \$8 per acre. There were, however, some significant differences across the state in certain operating cost items such as hired labor.

There was more variation in non-cash costs. These costs for the Purchase area were significantly below the other four groups, a major reason that group finished so close to 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. Similar computations were made for those high and low return producers from the Pennyroyal and Ohio Valley areas (Tables 3 and 4).

Management returns varied significantly as indicated in all the tables. The high group in the state had management returns of (\$30.86) per acre compared to (\$180.53) for the low group, a difference of \$149.67. The variation in total revenue (a function of yield and crop value) was \$61.35 per acre, accounting for 41 percent of the difference in net returns. This variation in total revenue was due primarily to a 27.8 bushel yield difference.

Operating expenses of the state high third group were \$182.22 per acre compared to \$239.05 for the low third, a difference of \$56.83. This variation in operating costs accounted for 38 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 \$10.83 difference in machinery repair costs was the most notable.

The difference in non-cash costs between the high and low third groups statewide was \$31.49 per acre, accounting for 21 percent of the net return difference. The biggest difference in non-cash costs was unpaid labor.

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 \$35.77 per acre lower for the high third compared to the low third.

Large differences in management returns between high and low third producers were also observed in the Ohio Valley and Pennyroyal areas. However, these differences were not as great as

those exhibited statewide. Also the factors which contributed to variable results within these areas, differed from those which affected results statewide.

Differences in corn yields for farmers in the Ohio Valley area was more of an influence on results within that group than it was on statewide results. The yield difference of 31.4 bushels per acre between Ohio Valley high and low third farms was the primary factor contributing to a \$75.16 per acre difference in crop revenue. Crop revenue in turn accounted for 63 percent of the 119.15 difference in net returns for the group.

However, for the Pennyroyal Group, costs played a more significant role. Operating costs for the high third Pennyroyal producer was \$43.95 per acre lower than those same costs for low third producers, constituting 37 percent of the net difference of \$119.57. Differences in non-cash costs were \$43.24 per acre or 36 percent of the net difference. Machinery costs (repairs, machine hire, fuel, light vehicle expense and depreciation) were \$54.61 per acre lower for the high third group compared to the low third.

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 yellow corn 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.

The information presented in this report illustrates the difficulty most producers in Kentucky had in generating a profit from yellow corn 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 corn 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 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. Yellow Corn Enterprises - 1999 - All Farms & By Management Results

	Average of All Farms	High Third	Middle Third	Low Third
Number of Farms	50	17	18	15
Total Acres	574.1	592.1	804.9	276.9
Operator Acres	508.5	492.9	750.5	235.7
Yield per Acre	118.6	132.8	113.4	105.0
Revenue - Per Acre				
Cash Sales	\$61.16	\$70.60	\$60.07	\$42.98
Feed & Seed Value	6.21	8.68	5.48	3.13
Inventory Value	<u>183.17</u>	<u>206.93</u>	<u>169.58</u>	<u>178.76</u>
Total Crop Revenue	\$250.54	\$286.22	\$235.13	\$224.87
Operating Expenses				
Fertilizer	\$53.46	\$53.06	\$51.54	\$61.73
Pesticides	32.16	30.74	32.38	34.70
Seed	28.63	28.08	28.21	31.58
Utilities	3.01	3.02	2.71	4.80
Machinery Repairs	15.20	13.19	14.14	24.02
Machine Hire	6.91	3.65	7.43	12.65
Fuel & Oil	6.73	6.52	6.57	7.83
Light Vehicle Expenses	0.24	0.14	0.07	1.17
Hired Labor	16.06	11.10	19.49	14.71
Drying & Storage	2.97	2.84	2.58	4.75
Building Rent	0.36	0.00	0.67	0.00
Building Repair	2.78	2.34	2.24	5.90
Insurance	6.90	6.94	6.48	8.39
Real Estate Tax	2.41	2.24	2.21	3.60
Miscellaneous	2.76	2.49	2.45	4.60
Interest Charge on Operating	<u>16.01</u>	<u>15.86</u>	<u>15.42</u>	<u>18.63</u>
Total Operating Costs	\$196.62	\$182.22	\$194.60	\$239.05
Return Over Operating Costs	\$53.92	\$104.00	\$40.53	\$(14.18)
Non-Cash Costs				
Unpaid Labor	\$19.58	\$20.43	\$14.85	\$35.66
Machinery Depreciation	21.43	16.62	22.58	28.44
Building Depreciation	2.52	1.89	2.63	3.58
Interest Charge on Non Land Investment	5.79	4.70	6.10	7.16
Interest Charge on Land Values	<u>92.61</u>	<u>91.21</u>	<u>93.77</u>	<u>91.52</u>
Total Non-Cash Costs	\$141.93	\$134.86	\$139.93	\$166.35
TOTAL ALL COSTS	\$338.55	\$317.08	\$334.53	\$405.41
MANAGEMENT RETURNS	<u>\$(88.01)</u>	<u>\$(30.86)</u>	<u>\$(99.40)</u>	<u>\$(180.53)</u>

Table 1A. All Yellow Corn Enterprises - Miscellaneous Information

	Average of All Farms	High Third	Middle Third	Low Third
Prices				
Price Required to Cover Operating Costs	\$1.66	\$1.37	\$1.72	\$2.28
Price Required to Cover Total Costs	2.85	2.39	2.95	3.86
Average Price Received for New Crop	2.06	2.00	1.93	2.11
Labor				
Paid Labor Months	4.35	3.92	6.90	1.78
Unpaid Labor Months	5.19	5.07	6.05	4.28
Acres Per 12 Month Equivalent	722.3	790.3	745.7	548.1
Investment				
Crop Inventory	\$196.14	\$207.09	\$183.65	\$217.90
Machinery Investment	110.14	91.49	115.57	133.58
Building Investment	26.03	19.20	27.95	34.84
Real Estate Investment	<u>1,852.24</u>	<u>1,824.16</u>	<u>1,875.40</u>	<u>1,830.33</u>
Total Investment	\$2,184.54	\$2,141.93	\$2,202.57	\$2,216.65
Rate Earned on Investment	1.33%	4.18%	0.79%	-3.16%
Land Rent				
Average Cash Rent Per Acre	\$77.72	\$83.05	\$76.28	\$71.16
Average Cash Rent Per Bushel	0.66	0.63	0.67	0.68
Cash Rent as a Percentage of Crop Revenue	31.02%	29.02%	32.44%	31.64%
Cash Rent as a Percentage of Land Value	4.20%	4.55%	4.07%	3.89%

Table 2. All Yellow Corn Enterprises by Area for 1999.

Geographic Area	Central Kentucky	Ohio Valley	Pennyroyal	Purchase
Number of Farms	8	18	18	6
Total Acres	602.1	562.9	577.5	560.3
Operator Acres	550.2	451.6	547.4	506.7
Yield per Acre	101.1	121.3	125.9	113.2
Revenue - Per Acre				
Cash Sales	\$60.10	\$57.05	\$57.19	\$16.32
Feed & Seed Value	17.26	1.21	0.93	20.68
Inventory Value	<u>135.78</u>	<u>183.17</u>	<u>204.43</u>	<u>140.88</u>
Total Crop Revenue	\$213.15	\$257.12	\$262.55	\$248.16
Operating Expenses				
Fertilizer	\$41.43	\$58.74	\$53.40	\$56.94
Pesticides	35.96	30.21	32.32	31.36
Seed	27.59	29.93	27.68	29.79
Utilities	2.29	3.53	3.29	1.79
Machinery Repairs	17.12	17.50	13.38	12.19
Machine Hire	6.41	8.13	6.29	6.40
Fuel & Oil	5.76	7.47	6.52	6.80
Light Vehicle Expenses	0.00	0.75	0.00	0.02
Hired Labor	20.78	10.46	19.26	13.86
Drying & Storage	2.75	2.48	1.74	8.57
Building Rent	1.50	0.00	0.00	0.98
Building Repair	0.64	4.21	2.75	2.16
Insurance	7.64	4.28	8.65	7.18
Real Estate Tax	2.39	2.23	2.46	2.78
Miscellaneous	3.99	2.11	2.78	2.65
Interest Charge on Operating	<u>14.75</u>	<u>16.45</u>	<u>16.39</u>	<u>15.42</u>
Total Operating Costs	\$191.00	\$198.49	\$196.91	\$198.88
Return Over Operating Costs	\$22.15	\$58.63	\$65.63	\$49.29
Non-Cash Costs				
Unpaid Labor	\$12.42	\$27.25	\$17.78	\$15.32
Machinery Depreciation	22.48	17.90	22.88	24.68
Building Depreciation	1.92	2.73	2.99	1.29
Interest Charge on Non Land Investment	5.72	4.41	6.67	6.71
Interest Charge on Land Values	<u>99.57</u>	<u>90.54</u>	<u>94.77</u>	<u>81.10</u>
Total Non-Cash Costs	\$142.11	\$142.82	\$145.08	\$129.10
TOTAL ALL COSTS	\$333.11	\$341.31	\$342.00	\$327.98
MANAGEMENT RETURNS	<u>(\$119.96)</u>	<u>(\$84.19)</u>	<u>(\$79.45)</u>	<u>(\$79.82)</u>

Table 2A. All Yellow Corn Enterprises by Area for 1999 - Miscellaneous Information

	Central Kentucky	Ohio Valley	Pennyroyal	Purchase
Prices				
Price Required to Cover Operating Costs	\$1.89	\$1.64	\$1.56	\$1.76
Price Required to Cover Total Costs	3.29	2.81	2.72	2.90
Average Price Received for New Crop	2.11	1.97	2.09	2.06
Labor				
Paid Labor Months	6.14	2.94	5.32	3.28
Unpaid Labor Months	4.03	6.30	5.02	3.88
Acres Per 12 Month Equivalent	710.0	731.2	669.9	938.5
Investment				
Crop Inventory	\$170.90	\$205.14	\$205.14	\$179.42
Machinery Investment	117.11	79.91	122.82	139.78
Building Investment	17.53	23.81	34.08	18.17
Real Estate Investment	<u>1,991.36</u>	<u>1,810.72</u>	<u>1,895.35</u>	<u>1,622.08</u>
Total Investment	\$2,296.89	\$2,119.57	\$2,257.39	\$1,959.45
Rate Earned on Investment	0.00%	1.42%	1.87%	1.32%
Land Rent				
Average Cash Rent Per Acre	\$62.16	\$88.79	\$81.98	\$71.00
Average Cash Rent Per Bushel	0.61	0.73	0.65	0.63
Cash Rent as a Percentage of Crop Revenue	29.16%	34.53%	31.22%	28.61%
Cash Rent as a Percentage of Land Value	3.12%	4.90%	4.33%	4.38%

Table 3. Pennyroyal Association Yellow Corn Enterprises

	Average of All Farms	High Third	Middle Third	Low Third
Number of Farms	18	6	6	6
Total Acres	577.5	477.0	882.2	373.3
Operator Acres	547.4	449.7	831.0	361.7
Yield per Acre	125.9	129.9	125.9	121.2
Revenue - Per Acre				
Cash Sales	\$57.19	\$56.61	\$43.33	\$89.75
Feed & Seed Value	0.93	0.00	0.21	3.72
Inventory Value	<u>204.43</u>	<u>224.38</u>	<u>215.09</u>	<u>155.15</u>
Total Crop Revenue	\$262.55	\$280.99	\$258.63	\$248.62
Operating Expenses				
Fertilizer	\$53.40	\$47.34	\$51.08	\$66.24
Pesticides	32.32	27.57	31.23	40.72
Seed	27.68	27.66	28.22	26.46
Utilities	3.29	2.50	4.07	2.50
Machinery Repairs	13.38	9.25	13.73	17.72
Machine Hire	6.29	7.10	4.39	9.64
Fuel & Oil	6.52	5.80	6.84	6.67
Light Vehicle Expenses	0.00	0.00	0.01	0.00
Hired Labor	19.26	14.56	22.27	18.16
Drying & Storage	1.74	1.84	1.93	1.19
Building Rent	0.00	0.00	0.00	0.00
Building Repair	2.75	2.07	3.58	1.70
Insurance	8.65	9.40	7.91	9.41
Real Estate Tax	2.46	2.37	2.70	2.03
Miscellaneous	2.78	2.98	2.48	3.23
Interest Charge on Operating	<u>16.39</u>	<u>15.85</u>	<u>17.47</u>	<u>14.58</u>
Total Operating Costs	\$196.91	\$176.30	\$197.91	\$220.25
Return Over Operating Costs	\$65.63	\$104.69	\$60.72	\$28.37
Non-Cash Costs				
Unpaid Labor	\$17.78	\$16.66	\$13.60	\$28.77
Machinery Depreciation	22.88	9.62	27.95	27.70
Building Depreciation	2.99	0.80	4.57	2.10
Interest Charge on Non Land Investment	6.67	2.71	8.75	6.80
Interest Charge on Land Values	<u>94.77</u>	<u>92.09</u>	<u>94.06</u>	<u>99.73</u>
Total Non-Cash Costs	\$145.08	\$121.87	\$148.92	\$165.11
TOTAL ALL COSTS	\$342.00	\$298.17	\$346.84	\$385.37
MANAGEMENT RETURNS	(\$79.45)	(\$17.18)	(\$88.21)	(\$136.75)

Table 3A. Pennyroyal Association Yellow Corn Enterprises - Miscellaneous Information

	Average of All Farms	High Third	Middle Third	Low Third
Prices				
Price Required to Cover Operating Costs	\$1.56	\$1.36	\$1.57	\$1.82
Price Required to Cover Total Costs	2.72	2.30	2.75	3.18
Average Price Received for New Crop	2.09	2.12	2.06	2.09
Labor				
Paid Labor Months	5.32	5.08	7.29	3.58
Unpaid Labor Months	5.02	3.88	5.88	5.31
Acres Per 12 Month Equivalent	669.9	638.4	803.6	503.7
Investment				
Crop Inventory	\$205.14	\$212.54	\$230.67	\$137.28
Machinery Investment	122.82	57.64	151.48	138.00
Building Investment	34.08	6.06	54.45	22.11
Real Estate Investment	1,895.35	1,841.80	1,881.11	1,994.64
Total Investment	\$2,257.39	\$2,118.05	\$2,317.71	\$2,292.03
Rate Earned on Investment	1.87%	4.91%	1.54%	-0.73%
Land Rent				
Average Cash Rent Per Acre	\$81.98	\$67.39	\$99.55	\$77.50
Average Cash Rent Per Bushel	0.65	0.52	0.79	0.64
Cash Rent as a Percentage of Crop Returns	31.22%	23.98%	38.49%	31.17%
Cash Rent as a Percentage of Land Value	4.33%	3.66%	5.29%	3.89%

Table 4. Ohio Valley Association Yellow Corn Enterprises.

	Average of All Farms	High Third	Middle Third	Low Third
Number of Farms	18	7	5	6
Total Acres	562.9	696.1	685.4	305.5
Operator Acres	451.6	530.4	592.2	242.3
Yield per Acre	121.3	137.7	108.0	106.3
Revenue - Per Acre				
Cash Sales	\$57.05	\$46.55	\$92.43	\$11.78
Feed & Seed Value	1.21	2.66	0.00	0.00
Inventory Value	<u>198.86</u>	<u>252.23</u>	<u>124.26</u>	<u>214.49</u>
Total Crop Revenue	\$257.12	\$301.44	\$216.69	\$226.28
Operating Expenses				
Fertilizer	\$58.74	\$59.71	\$54.90	\$64.08
Pesticides	30.21	30.39	30.03	30.12
Seed	29.93	28.14	32.44	29.38
Utilities	3.53	3.28	2.67	5.89
Machinery Repairs	17.50	16.59	14.76	25.38
Machine Hire	8.13	1.62	14.37	12.05
Fuel & Oil	7.47	7.65	7.61	6.73
Light Vehicle Expenses	0.75	0.32	0.56	2.27
Hired Labor	10.46	10.77	11.58	7.40
Drying & Storage	2.48	3.61	1.44	1.70
Building Rent	0.00	0.00	0.00	0.00
Building Repair	4.21	2.95	4.86	6.12
Insurance	4.28	3.74	4.04	6.12
Real Estate Tax	2.23	2.80	1.33	2.61
Miscellaneous	2.11	2.64	1.04	2.93
Interest Charge on Operating	<u>16.45</u>	<u>18.19</u>	<u>13.14</u>	<u>18.78</u>
Total Operating Costs	\$198.49	\$192.42	\$194.76	\$221.57
Return Over Operating Costs	\$58.63	\$109.02	\$21.93	\$4.71
Non-Cash Costs				
Unpaid Labor	\$27.25	25.70	23.59	38.64
Machinery Depreciation	17.90	22.07	10.32	22.69
Building Depreciation	2.73	3.08	1.45	4.46
Interest Charge on Non Land Investment	4.41	5.75	1.41	7.08
Interest Charge on Land Values	<u>90.54</u>	<u>92.47</u>	<u>87.87</u>	<u>91.04</u>
Total Non-Cash Costs	\$142.82	\$149.07	\$124.63	\$163.91
TOTAL ALL COSTS	\$341.31	\$341.49	\$319.39	\$385.48
MANAGEMENT RETURNS	(\$84.19)	(\$40.05)	(\$102.70)	(\$159.20)

Table 4A. Ohio Valley Association Yellow Corn Enterprises - Miscellaneous Information

	Average of All Farms	High Third	Middle Third	Low Third
Prices				
Price Required to Cover Operating Costs	\$1.64	\$1.40	\$1.80	\$2.08
Price Required to Cover Total Costs	2.81	2.48	2.96	3.63
Average Price Received for New Crop	1.97	2.00	1.94	1.94
Labor				
Paid Labor Months	2.94	3.49	4.29	1.18
Unpaid Labor Months	6.30	6.78	7.56	4.68
Acres Per 12 Month Equivalent	731.2	813.6	694.2	625.1
Investment				
Crop Inventory	\$205.14	\$253.75	\$127.46	\$239.18
Machinery Investment	79.91	102.89	27.85	127.25
Building Investment	23.81	32.46	5.33	39.34
Real Estate Investment	1,810.72	1,849.34	1,757.36	1,820.75
Total Investment	\$2,119.57	\$2,238.44	\$1,918.00	\$2,226.52
Rate Earned on Investment	1.42%	3.85%	-0.02%	-2.13%
Land Rent				
Average Cash Rent Per Acre	\$88.79	\$93.16	\$85.17	\$69.80
Average Cash Rent Per Bushel	0.73	0.68	0.79	0.66
Cash Rent as a Percentage of Crop Returns	34.53%	30.90%	39.31%	30.85%
Cash Rent as a Percentage of Land Value	4.90%	5.04%	4.85%	3.83%

Table 5. Comparison of Kentucky Yellow Corn Enterprise for 1998 and 1999

	1998	1999	Difference
Number of Farms	66	50	
Total Acres	NA	574.1	
Operator Acres	424	508.5	
Yield per Acre	128	118.6	-9.37
Revenue - Per Acre			
Cash Sales	\$58.77	\$61.16	
Feed & Seed Value	7.43	6.21	
Inventory Value	<u>229.35</u>	<u>183.17</u>	
Total Crop Revenue	\$295.54	\$250.54	\$(45.00)
Operating Expenses			
Fertilizer	\$59.62	\$53.46	\$(6.16)
Pesticides	31.90	32.16	0.26
Seed	29.11	28.63	(0.48)
Utilities	3.24	3.01	(0.23)
Machinery Repairs	17.31	15.20	(2.11)
Machine Hire	5.62	6.91	1.29
Fuel & Oil	6.74	6.73	(0.01)
Light Vehicle Expenses	0.49	0.24	(0.25)
Hired Labor	16.94	16.06	(0.88)
Drying & Storage	5.06	2.97	(2.09)
Building Rent & Repair	3.60	3.15	(0.45)
Insurance	6.75	6.90	0.15
Real Estate Tax	2.21	2.41	0.20
Miscellaneous	<u>3.40</u>	<u>2.76</u>	<u>(0.64)</u>
Total Operating Costs	\$191.99	\$180.60	\$(11.39)
Return Over Operating Costs	\$103.55	\$69.94	\$(33.61)
Interest & Land Costs			
Cash Interest	23.98	19.09	(4.89)
Land Costs	50.62	44.05	(6.57)
Depreciation			
Machinery Depreciation	22.27	21.43	(0.84)
Building Depreciation	4.67	2.52	(2.15)
Operating Expense & Depreciation	\$293.53	\$267.70	\$(25.83)
NET INCOME	\$2.01	\$(17.16)	\$(19.17)

Table 6. Historical Average Yellow Corn Yields by Area.

Production Year	Purchase Area	Pennyroyal Area	Ohio Valley Area	Central Kentucky
1991	85	110	102	93
1992	145	150	155	135
1993	103	112	124	112
1994	141	148	144	112
1995	125	133	107	103
1996	122	150	132	115
1997	124	126	111	81
1998	120	135	116	124
1999	113	124	122	88
Most Recent 5-year Average	120.8	133.4	117.6	102.0

Table 7. Historical Calendar Year Average Selling Prices for Yellow Corn.

Production Year	Purchase Area	Pennyroyal Area	Ohio Valley Area	Central Kentucky
1991	\$2.50	\$2.54	\$2.51	\$2.58
1992	2.36	2.41	2.46	2.55
1993	2.35	2.34	2.32	2.39
1994	2.43	2.51	2.56	2.43
1995	2.51	2.57	2.47	2.72
1996	3.80	3.41	3.30	3.58
1997	2.74	2.93	2.93	2.89
1998	Old Crop	2.64	2.63	2.68
	New Crop	2.11	2.25	2.30
1999	Old Crop	2.11	2.29	2.32
	New Crop	2.02	2.10	2.03