



Kansas Farm Management Association Program Data Working for You

Presented to the
KANSAS WHEAT SEMINAR

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From Program to Products

- The Kansas Farm Management Association
- Whole Farm and Enterprise Analysis
- Utilization of the Data
- General Economic Conditions
- Strategic Analyses
- The Potential
- The "Sell"





Providing...

- Educational programs to enhance the ability of managers to use information
- Strategic services to assist decision makers using financial records and information
- Accounting systems to improve record keeping
- A portal to leading edge research and technology.





A Portal to Extensive KSU Resources

- Extension Agricultural Economists are faculty members in the Kansas State University Department of Agricultural Economics
- Linked through K-State Research & Extension, USDA





Accounting Systems

- Support and training for three integrated systems:
 - ▼ KFMA Account Book
 - ▼ K-MAR-105 Financial Plus
 - ▼ MCFP
- Various “accounting” programs





Individualized Services

- On-Farm Visits
 - ▼ Dedicated Farm-Level Business Management
 - ▼ Training with accounting systems and data management
- Directed and Integrated
 - ▼ Business Asset Management
 - ▼ Tax Management
 - ▼ Farm Business Financial Statements





Individualized Services (CONTINUED)

- Farm Business Profit Centers
 - ▼ Enterprise Analysis integrated with Decision Making
 - ▼ Enterprise Assessment with Whole Farm Awareness
- Superior Analysis and Directed Consultation with YOUR Information
 - ▼ Benchmarking
 - ▼ Dedicated system with strong support





Educational Programs

- Extension educational meetings to examine regional and enterprise information
- Providing updated information of importance to agricultural operations
- Working with members to enhance:
 - ▼ Understanding of economic concepts and financial indicators important to them
 - ▼ Problem solving skills
 - ▼ Decision-making skills.





Enterprise Data

- Crop Year Basis for Data Summary
- Operator's Share Included
- Full Economic Costing (calculated/adjusted)
- Composite Farms





Wheat Enterprises

- Nonirrigated
 - ▼ State
 - ▼ Six Associations
- No-Till Nonirrigated (North Central Assoc.)
- Irrigated
 - ▼ State
 - ▼ NW, SW





Application of Data

- Farm-Level Decision Making
- Broader Economic Implications
 - ▼ Specific Commodity/Practice Analyses
 - ▼ General Economic Conditions
 - ▼ Applied Studies





Data Utilization

- Historical References from the Data Bank
 - ▼ Trends
 - ▼ Benchmarking
- NC Association No-Till Study
- Successful Track Record of Analyses
- Realm of Possibilities



WHEAT SEMINAR: LANGEMEIER

- Trends in Wheat Income and Wheat Acres
- Efficiency and Less Tillage Index
- Financial Performance Benchmarks

Trends in Wheat Acres and Wheat Income

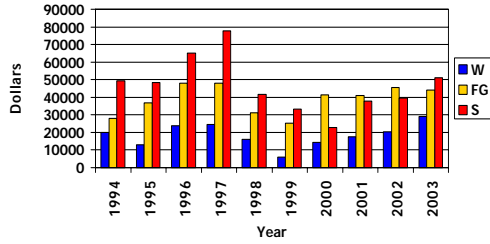
- KFMA Data
 - Farms with continuous data
 - 1994 to 2003
 - Averages for 2003:
 - Value of Farm Production: 237,435
 - Wheat Income: 52,742
 - Total Crop Acres: 1,186
 - Wheat Acres: 416

Trends in Wheat Acres and Wheat Income

- KFMA Data: Eastern Kansas
 - Averages for 2003:
 - Value of Farm Production: 237,986
 - Wheat Income: 28,946
 - Total Crop Acres: 937
 - Wheat Acres: 204

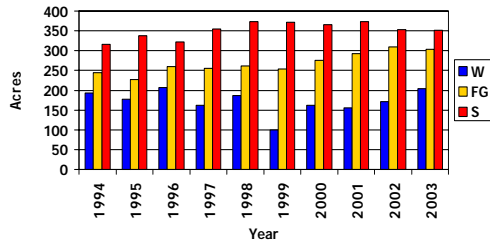


Crop Income: Eastern Kansas





Dryland Crop Acres Eastern Kansas



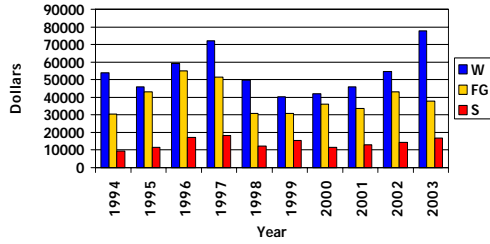


Trends in Wheat Acres and Wheat Income

- KFMA Data: Central Kansas
 - Averages for 2003:
 - Value of Farm Production: 227,852
 - Wheat Income: 77,903
 - Total Crop Acres: 1,260
 - Wheat Acres: 575

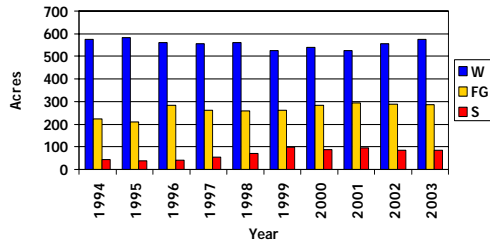


Crop Income: Central Kansas





Dryland Crop Acres Central Kansas



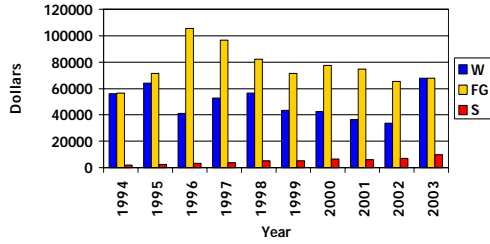


Trends in Wheat Acres and Wheat Income

- KFMA Data: Western Kansas
 - Averages for 2003:
 - Value of Farm Production: 256,786
 - Wheat Income: 67,740
 - Total Crop Acres: 1,757
 - Wheat Acres: 573

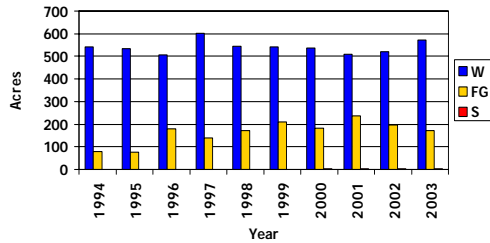


Crop Income: Western Kansas



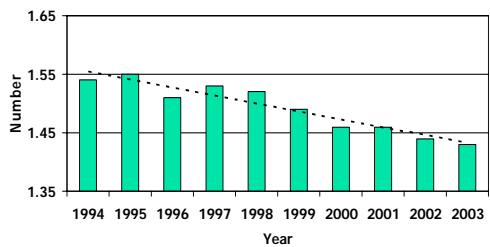


Dryland Crop Acres Western Kansas

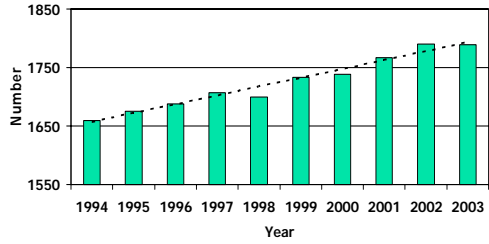




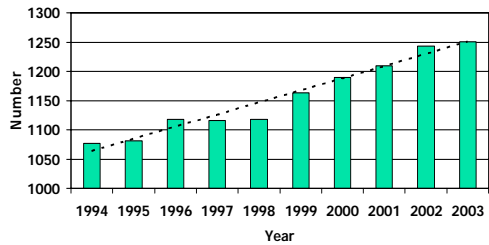
Change in Number of Workers per Farm Over Time



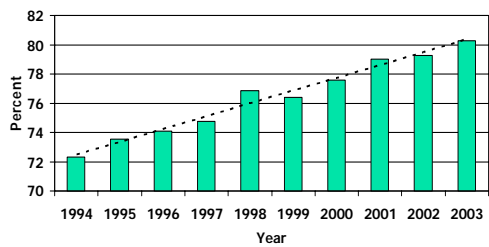
Change in Total Acres per Farm Over Time



Change in Total Acres per Worker Over Time



Change in Crop Labor Percentage Over Time



Efficiency and Less Tillage Index

- KFMA Data
 - Crop farms with continuous data
 - 1999 to 2003
 - 5-Year Averages:
 - Value of Farm Production: 214,604
 - Less Tillage Index: 0.266
 - Crop Labor as a Percent of Total Crop Costs: 36.9%

Value of Farm Production (VFP)

- An accrual measure of farm size.
- Computed as follows:
 - $VFP = (\text{Gross Accrual Livestock Sales} + \text{Accrual Crop Sales} + \text{Accrual Miscellaneous Income}) - (\text{Gross Accrual Livestock Purchases}) - (\text{Feed Purchased})$

Economic Total Expense Ratio (ETER)

- Measure includes cash costs, depreciation, unpaid labor, and an opportunity charge on owned assets.
- Computed as follows:
 - $ETER = (\text{Cash Costs} + \text{Depreciation} + \text{Unpaid Labor} + \text{Opportunity Charge on Owned Assets}) / (\text{Value of Farm Production})$



Less Tillage Index (LTI)

- Measures relationship between herbicide use and machinery costs. Farms that have reduced tillage would be expected to have a higher index.
- Computed as follows:
 - $LTI = \frac{\text{Herbicide and Insecticide Cost}}{\text{Total Crop Machinery Cost}}$



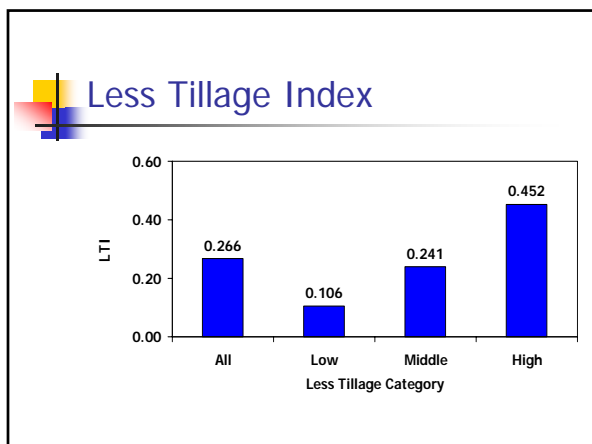
Crop Labor as a Percent of Total Crop Costs (PLABOR)

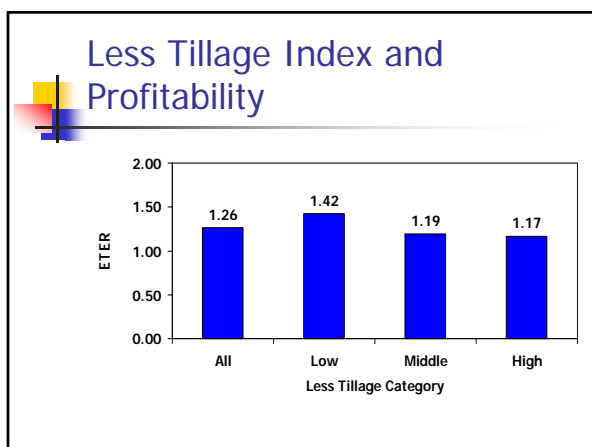
- Measure of labor efficiency. We would expect larger farms and farms that have adopted reduced tillage systems to have a lower value for "plabor".
- Computed as follows:
 - $PLABOR = \frac{\text{Cost of Labor Allocated to Crop Production}}{\text{Total Crop Cost}}$

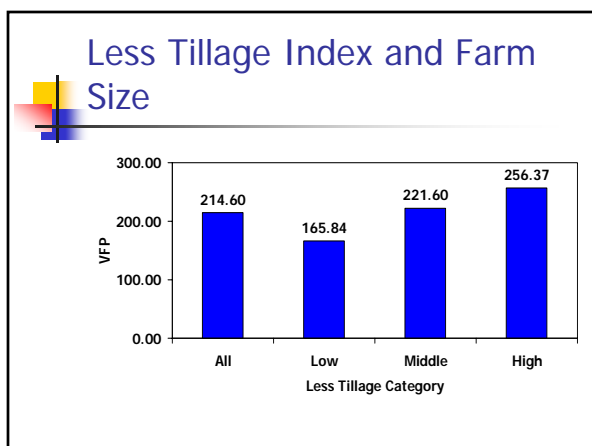


LTI Categories

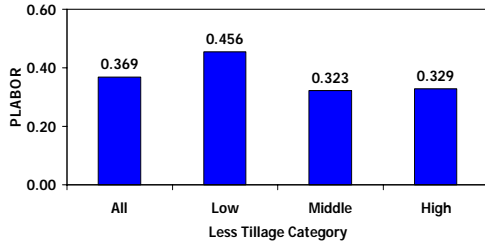
- Using the less tillage index, KFMA farms were divided into low one-third, middle one-third, and high one-third categories.
- The low one-third farms use relatively less herbicides and relatively more tillage.







Less Tillage Index and Labor Efficiency



NC KFMA No-Till Cost Study

- No-Till Comparative Analysis
 - Everson, Rempe, and Thielen
 - 13 counties in NC Kansas
- Objective:
 - Compare production costs between no-till crop farms and other crop farms.
- Analysis represents averages for the 1997-2003 period.

Production Cost per Harvested Acre

- No-Till Farms
 - Total Machinery Cost: \$34.28
 - Total Labor Cost: \$24.04
 - Total Asset Charge: \$37.40
 - Total Other Crop Cost: \$54.45
- Other Crop Farms
 - Total Machinery Cost: \$39.67
 - Total Labor Cost: \$28.23
 - Total Asset Charge: \$37.13
 - Total Other Crop Cost: \$41.88



Summary of NC KFMA Analysis

- Production cost per harvested acre between no-till crop farms and other crop farms was similar.
- The no-till farms were larger and used more intensive cropping rotations.



Crop Tillage and Water Quality

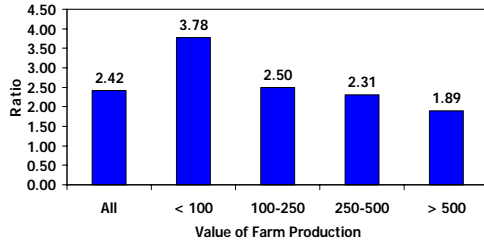
- On-Going KDHE Funded Project
 - Devlin, Fjell, Nelson, and Langemeier
- Objective:
 - Investigate the relationship between crop rotation profitability and water quality.
- Water Quality Indices
 - Computed using EPIC model.



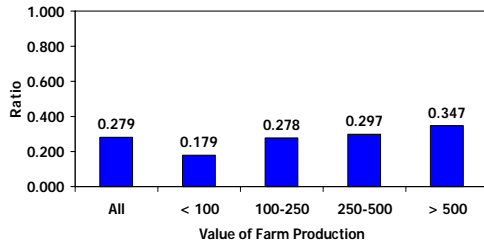
Financial Performance Benchmarks

- KFMA Data
 - Farms with continuous data
 - 1994 to 2003
 - 10-Year Averages:
 - VFP: 203,613
 - NFI: 40,288
 - Total Assets: 742,477

Current Ratio, KFMA (1994-2003 Average)



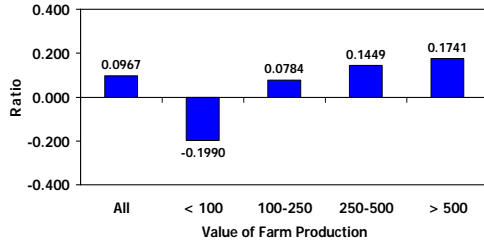
Debt to Asset Ratio, KFMA (1994-2003 Average)



Profitability

- Operating Profit Margin Ratio
 - $(\text{Net Farm Income} + \text{Interest} - \text{Unpaid Labor}) / (\text{Value of Farm Production})$
 - Average:
 - $(40,288 + 15,130 - 35,735) / (203,613) = 0.0967$
 - Top quartile:
 - OPMR = 0.2050

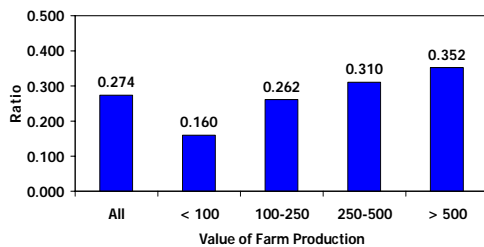
Profit Margin Ratio, KFMA (1994-2003 Average)



Financial Efficiency

- Asset Turnover Ratio
 - $(\text{Value of Farm Production}) / (\text{Average Total Assets})$
 - Measures the effectiveness of the farm in utilizing assets.
 - Average:
 - $(203,613) / (742,477) = 0.274$
 - Top quartile:
 - $\text{ATR} = 0.370$

Asset Turnover Ratio, KFMA (1994-2003 Average)



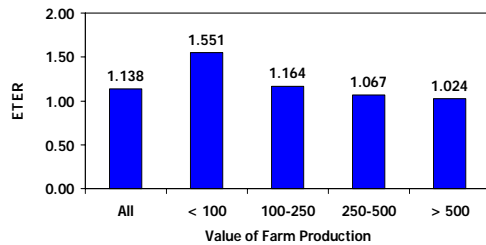


Financial Efficiency

- Total Expense Ratio
 - Includes cash expenses and depreciation.
- Economic Total Expense Ratio
 - Includes cash expenses, depreciation, and opportunity charges on unpaid labor and owned assets.
 - Average = 1.138
 - Top Quartile = 0.971

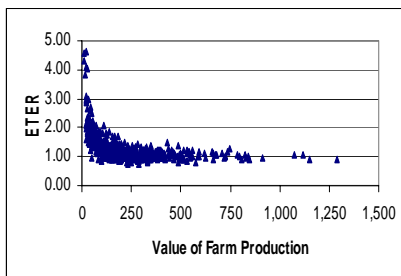


Farm Size and Economic Total Expense Ratio





Farm Size and Economic Total Expense Ratio





Financial Stress

- Definition of Financial Stress
 - Negative Return on Equity
 - Net farm income minus unpaid labor is negative.
 - High Debt to Asset Ratio
 - Debt to asset ratio greater than 0.70.

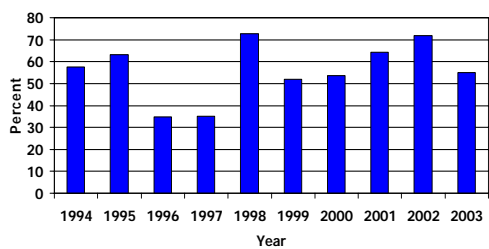


Financial Stress, KFMA (1994 to 2003)

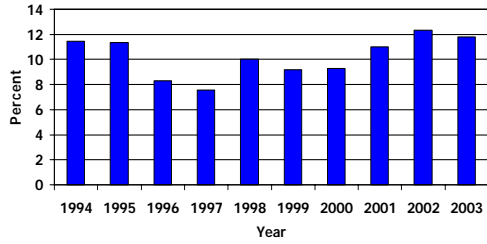
- Percentage of Farms (10-Year Averages)
 - Negative Return on Equity = 56.02%
 - High Debt = 10.23%
 - Financially Stressed = 7.38%



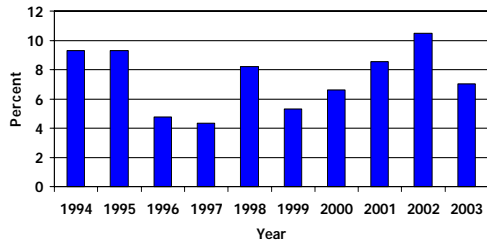
Percent of Farms with Negative Return on Equity



Percent of Farms with High Debt



Percent of Farms Financially Stressed



Financial Stress, KFMA (1994 to 2003)

- Percentage of Farms
 - No Financial Stress = 78.51%
 - Financially Stressed over 50% of Time = 4.32%
 - Financially Stressed every Year = 0.54%
 - No Debt = 3.02%

Contact Information: Langemeier

- Departmental Publications:
 - www.agmanager.info

- E-mail:
 - mlange@agecon.ksu.edu



Success for Kansas Producers

- Disaster Assistance
 - ▼ Evidence of current and historical conditions
- Sales and Property Tax
 - ▼ Impact assessments for producers





Potential for Greater Utilization

- Specific applied research projects
 - ▼ No-Till
 - ▼ Irrigation
 - ▼ Alternative Crops
- Enhanced Economic Assessment
- Policy Alternative Modeling





There is no substitute

- Farm-level data from actual farms promotes action more than estimates and theoretical models.
- Sound records and the ability to use the resulting information makes for more informed decision making.
- While the primary benefit will accrue to members who participate in the entire program, the public benefit is extremely large.





Kansas Farm Management Association

Helping You Put Knowledge To Work

www.agmanager.info