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Risk Management Strategies of Illinois Farmers

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BACKGROUND

❖ To be successful, farmers must manage several types of risk, including those inherent to production, marketing, financing, and human resources. A variety of risk management tools and practices have been developed to help farmers mitigate the wide range of production and financial risks that result from diseases, insects, and weather (Smith et al., 2007).

❖ A great deal of research has been conducted regarding crop insurance purchase decisions, election, and coverage levels. Knight and Coble (1997) published "Survey of U.S. Multiple Peril Crop Insurance Literature Since 1980" which provided a framework of 17 years worth of data and research regarding crop insurances' growth since its conception. Much research has been done around the topic of crop insurance since Knight and Coble's (1997) study; some have even expanded on the topic further, finding the risk factors that affect purchase decisions.

❖ Makki and Somwaru (2001) analyzed Iowa corn growers' decisions to participate in crop insurance and their insurance selection from 1995-1999. They found that risk tolerance, price, Federal subsidy, expect payout, and the availability of alternative insurance all played a major role when electing crop insurance.

❖ Miller et al. (2004) identified sources of risk for producers, categorizing them into production, marketing, financial, legal, and human risk. They identify several strategies in order to overcome some of those risks.

- *Marketing Strategies:* They recognize forward contracting as a means of overcoming some marketing risks; forward contacting is a method they identify as a way to lock in prices. Through forward contracting, producers are able to side step unstable basis levels, margin calls, premiums, and the minimum 5,000 bu. contract are all eliminated.
- *Production Strategies:* Diversification, geographic dispersion, variety selection, drainage, the use of cultural practices best suited to particular areas, etc. are all identified as possibly strategies.
- *Financial Strategies:* Carrying reserves of cash and the ability to adjust investments and withdrawal decisions are all means of tackling financial risks.

❖ Makki and Somwaru (2001), Miller et al. (2004), Sherrick et al. (2004), and Ginder et al. (2009) all examined the risk factors associated with running a daily farm operation.

❖ This study re-examines those factors, but at a more in-depth level, and examines how they are viewed by Illinois producers. Everything from back-up lines of credit, to irrigation and hedging are examined in this study, and more importantly, ranked in order of effectiveness in reducing risk.

OBJECTIVES

❖ To find out types of risk management tools, including crop insurance, adopted by the farmers in Illinois.
❖ To find out how effective do farmers believe each risk management strategy is in reducing risk.
❖ To analyze differences and similarities between risk takers vs. risk averse farmers in terms of their risk management strategies.

METHODOLOGY

❖ Subsequent to IRB approval, the mail survey method following Salant and Dillman (1994) survey principles is used to collect data.
❖ 1st Farm Credit Services and Farm Credit Services of Illinois provided access to their current and potential customer database. Their database has farmers' contact information as well as farm and farmer demographics like their gross farm income, age, acres-farmed, and net worth. Random sampling is used to select 2,000 farmers from their database.
❖ A donation to St. Jude's Children's Research Hospital is made on behalf of the respondents as an incentive to participate.
❖ After two mailings and a reminder postcard in between, the response rate was 34%. However, 399 surveys were complete.
❖ The data is entered into Excel worksheet and it is analyzed using SAS.

RESULTS

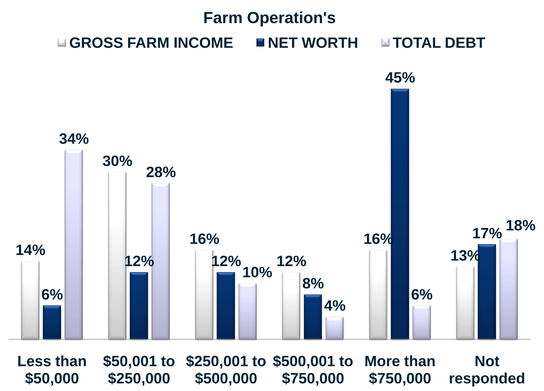
Corn Acres Farmed	545
Soybeans Acres Farmed	419
Wheat Acres Farmed	100
Other Acres Farmed	210

Number of Years Farming	32 years

Average Age	57.8 years

Male	87%
Female	9%
Did not respond	4%

Risk averse	11%
Risk neutral	57%
Risk taker	23%
Did not respond	9%



Use and Effectiveness of Risk Management Options in Reducing Risk

Risk Management Option	Percent Used	Weighted Effectiveness
Crop revenue insurance	56%	3.88
Forward contracting	65%	3.86
Financial savings/reserves	47%	3.75
Multiple seed varieties	67%	3.71
Spread crop sales	59%	3.70
Crop share leases	44%	3.65
Multiple crop enterprises	51%	3.58
Marketing contracts	45%	3.48
Farm in multiple locations	48%	3.47
Crop yield insurance	31%	3.42
Hedging	25%	3.10
Government programs	68%	3.06
Production contracts	19%	2.93
Options	23%	2.75
Irrigation	5%	2.67
Backup credit lines	18%	2.65
ACRE	28%	2.55
CAT	7%	1.75

On a scale of 1-not effective; 5-very effective.

	Risk Averse	Risk Neutral	Risk Taker
Did not purchase crop insurance	25%	16%	17%
Purchased crop insurance	70%	83%	77%

Statistically significant at 5% significance level.

Risk Management Option	Risk Averse	Risk Neutral	Risk Taker
ACRE	30%	28%	33%
Backup credit lines	14%	20%	18%
CAT	7%	8%	5%
Crop revenue insurance	55%	61%	58%
Crop yield insurance	32%	32%	34%
Crop share leases	43%	45%	52%
Financial savings/reserves	39%	50%	49%
Farm in multiple locations	52%	50%	49%
Forward contracting	59%	67%	73%
Government programs	70%	69%	76%
Hedging	11%	25%	34%
Irrigation	5%	4%	8%
Marketing contracts	39%	44%	56%
Multiple crop enterprises	34%	55%	58%
Multiple seed varieties	68%	69%	73%
Options	23%	20%	32%
Production contracts	18%	19%	22%
Spread crop sales	52%	63%	60%

All are statistically significant at 5% significance level.

ACKNOWLEDGMENTS

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New Program Participation	Overall	Risk Averse	Risk Neutral	Risk Taker
Applied for Biotechnology Endorsement (BE) discount*	31%	25%	33%	32%
Signed up for Average Crop Election Revenue (ACRE)	28%	27%	27%	33%
Applied for Supplemental Revenue Assistance (SURE)*	3%	2%	2%	3%
Chose Enterprise Unit (EU) with Crop Revenue Coverage (CRC)	30%	36%	32%	29%
Chose Enterprise Unit (EU) with Revenue Assurance (RA)	8%	5%	6%	12%

*Statistically significant at 5% significance level.

CONCLUSIONS

❖ Risk averse farmer is less likely to purchase crop insurance.
❖ Risk takers are more likely to use risk management tolls like forward contracting, hedging, and options.
❖ Very few farmers participated in new programs like BE discount, ACRE, SURE, and EU, regardless of risk attitude.
❖ Further analysis of data will provide more detailed information on relationships between risk management decisions, demographics of participants and their risk attitude.
❖ Further analysis will examine differences and similarities of small vs. large farmers and their risk management decisions.

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