

**Making Informed Crop Insurance Decision**  
**By Mark Nelson, Brent Gloy and Jerry White**  
**Department of Applied Economics and Management**  
**Cornell University**

**Why Buy Crop Insurance?**

The March 15 deadline for making crop insurance decisions is rapidly approaching. If you have been putting off this decision, it may be because you question “why buy crop insurance?” Simple...it’s about profit! Read on, to better understand how crop insurance is tied to profits.

Buying crop insurance should help increase profits, right? Well, not exactly. It is best to think of crop insurance as a management expense *not an investment*. This leads one to wonder – why would I want to incur an additional management expense? What do I receive for this expense?

Crop insurance products can help you to manage risk by supporting income when perils beyond your control have a strong adverse impact on your crop production or the prices you receive for your crops. In other words, crop insurance products can be useful in building a *safety net*, which supports income in bad times. Does a safety net come for free? No, building a safety net costs money.

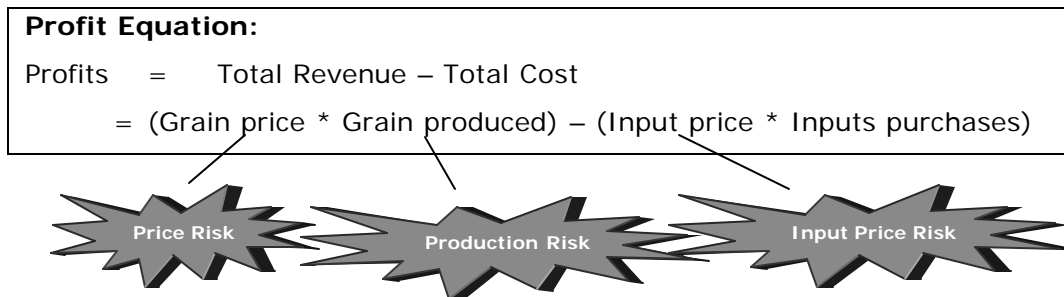
That means you need to determine:

- 1) Does my operation need/want a safety net and how much am I willing to pay for it? and
- 2) If you need/want a safety net, what risks should it cover and how high it should be?

The good news is that the government provides substantial subsidies which make building a safety net that cover crop losses and market price declines much cheaper than it would otherwise be.

**What is a safety net?**

Crop production is subject to many risks. An examination of the basic profit equation is useful in identifying these risks. Figure 1 illustrates the three common classes of risk are: production risk, price risk, and input price risk. Profits can be influenced by low prices, production shortfalls, and increases in operating costs.



Various crop insurance products provide protection against the risks related to the revenue component of profit, price and production risk. These products provide a safety net by paying producers when yields or revenue falls. In other words, they protect against the *down-side* potential of yields and/or prices. In this way crop insurance places a safety net beneath cash flow.

# Making Informed Crop Insurance Decision

By Mark Nelson, Brent Gloy and Jerry White

## Determine your need for a safety net

The process of determining your need for a safety net begins by answering a few basic questions. If bad times occur, how will your operation be impacted? First, determine your cash flow needs. These should include any debt servicing needs and personal living needs. The more substantial your cash flow needs, the more important that you have a safety net in place. Next, consider how you would handle a revenue shortfall. Are your current savings and unused credit reserves large enough to service your debt or family living needs? Are you willing to use these savings or credit reserves to meet your cash flow needs? Many things can influence your willingness to rely on these assets. Perhaps you are at a stage of your life, near retirement, that using these assets is less attractive to you. Plans for expansion may also have to be put on hold if they are used. In severe situations, family living budgets may need to be trimmed. Savings and credit reserves are components of your safety net. The greater these components and the more willing you are to use them in bad times, the less need to augment your safety net. Finally, ask yourself how likely do you think a shortfall is? The more likely it is that a shortfall will occur, the greater the need for a safety net. The question of when a safety net will be needed is a difficult one to answer because it differs for every operation.

All of these features influence the value of an augmented safety net. The value of a safety net will also differ by operation. With respect to your yield variability and what risks you are willing to accept, you know your operation best. The variability associated with your own profit equation as well as your willingness to take on risk are critical questions to address in developing a risk management plan. Stated differently, how high of a safety net are you willing to purchase for your operation?

## Using Crop Insurance to Augment Your Safety Net

There are a variety of crop insurance products and each addresses different risks. A key component in evaluating what insurance product is right for your operation as well as what coverage level is appropriate is an understanding of the relationship between dollars of coverage (types of risks reduced and amount of risk reduction) and the cost of risk reduction (management expense). The more risk that a product protects against, the more that you should expect the product will cost. Basically, crop insurance products protect against yield risk or the combination of yield and price (revenue) risk.

There are two basic yield risk products, catastrophic coverage (CAT) and actual production history (APH) coverage. Both of these products offer basic protection against the risk production losses due to weather, wildlife damage, fire, or other catastrophe. The payments are based on a pre-specified price which may be higher or lower than the actual harvest price. CAT coverage is highly subsidized, but only pays when yields fall below 50 percent of your proven yield. APH provides protection on greater amounts of your proven yield and consequently costs more. Because these products only guard against yield risk they are generally the least costly crop insurance products.

There are several crop insurance products that protect against yield and price or revenue risk. These products include crop revenue coverage (CRC) and indexed income protection (IIP)<sup>1</sup>. Your proven yields and futures prices from the Chicago Board of Trade are used to set a revenue guarantee for each producer. Payments are made when the combination of

---

<sup>1</sup> Adjusted gross revenue (AGR) insurance is also now available. Consult Dr. Jerry White's publication for more information on this product.

[http://aem.cornell.edu/special\\_programs/hortmgt/risk/resources.htm](http://aem.cornell.edu/special_programs/hortmgt/risk/resources.htm)

## Making Informed Crop Insurance Decision

By Mark Nelson, Brent Gloy and Jerry White

prices and yields falls below critical levels. However, it is important to note that the price guarantees are not based on your local prices, but a harvest time average of prices at the Chicago Board of Trade. Because revenue insurance products guard against both price and yield risk they are generally more costly than CAT and APH coverage.

The revenue products also incorporate other subtle differences that impact the amount of risk protection that they provide and the amount that you can expect to pay to purchase them. CRC is based on the revenue at the field level. Thus, if revenue from one field falls below the critical level, you will receive a payment. IIP is based on revenue at the farm level. In order to receive a payment, the revenue from your entire farm must be below a critical level. Generally, CRC will cost more than IIP because it insures more risk. Farm level revenues are generally less variable than field level revenues. Table 1 lists each of these insurance products, their acronyms, the types of risk that they protect against, and the deadlines for sign up.

Table 1. Crop Insurance Products and the Risks Covered by Each Product.

Crop Insurance Product	Acronym	Protection Against	Decision Deadline
Catastrophic Coverage	CAT	Low yields	March 15
Actual Production History	APH	Low yields	March 15
Indexed Income Protection	IIP	Low yields; Low prices; Farm-level	March 15
Crop Revenue Coverage	CRC	Low yields; Low Prices; Field-level	March 15
Adjusted Gross Revenue	AGR	Low revenue; Farm-level	January 31

Be sure to make note of recent changes that increased government subsidy levels as well as relatively new revenue insurance products because additional coverage levels (risk reduction) are not as expensive as they were in the past. It is also worthwhile to note that government loan rates provide some free protection against low prices. Historically, New York grain growers have largely purchased catastrophic coverage. In the light of increased subsidy dollars, growers may want to revisit the cost of purchasing additional coverage.

### **Conclusion**

Crop insurance can be used to form a component of the safety net protecting your cash flow. For assistance in evaluating which crop insurance product is right for your operation as well as what coverage level is appropriate, contact your local insurance agent for assistance. They can provide important details regarding the specific mechanics of how a particular product works as well as its price.

# Making Informed Crop Insurance Decision

By Mark Nelson, Brent Gloy and Jerry White

## Additional Resources

There are many additional resources which provide a significant amount of information regarding crop insurance products. This includes information on calculating proven yields, premiums, indemnity prices, etc. Below is a list of some of the internet sites which contain this information.

*Risk Management Agency:* <http://www.act.fcic.usda.gov/>

*Risk Management:* <http://www.rma.usda.gov/pubs/2000/PAN-1667-03.pdf>

- Introduction to Risk Management: <http://www.act.fcic.usda.gov/pubs/1997/riskmgmt.pdf>
- Building a Risk Management Plan: <http://www.act.fcic.usda.gov/pubs/1998/barmp/rmp.pdf>
- Managing Risk: [http://aem.cornell.edu/special\\_programs/hortmgt/risk/](http://aem.cornell.edu/special_programs/hortmgt/risk/)
- Why Buy Crop Insurance: [http://aem.cornell.edu/special\\_programs/hortmgt/risk/newsletters/Why\\_buy\\_crop\\_insurance.pdf](http://aem.cornell.edu/special_programs/hortmgt/risk/newsletters/Why_buy_crop_insurance.pdf)

*Crop Insurance Products:*

- Multiple Peril Crop Insurance: [http://www.rma.usda.gov/pubs/rme/fsh\\_6.html](http://www.rma.usda.gov/pubs/rme/fsh_6.html);  
<http://www.exnet.iastate.edu/Publications/FM1826.pdf>
- Catastrophic Coverage: <http://www.exnet.iastate.edu/Publications/FM1852.pdf>
- Actual Production History: <http://www.exnet.iastate.edu/Publications/FM1860.pdf>
- Crop Revenue Coverage: <http://www.exnet.iastate.edu/Publications/FM1853.pdf>
- Adjusted Gross Revenue: <http://www.rma.usda.gov/pubs/2001/PAN-1667-06.pdf>

*Crop Insurance Decision Aids:*

- Premium Calculator: [http://www3.rma.usda.gov/apps/premcalc/calc\\_login.cfm](http://www3.rma.usda.gov/apps/premcalc/calc_login.cfm)
- Revenue Calculator: [http://www.agmkt.com/revenuecalculator/revenue\\_calculator\\_v2.asp](http://www.agmkt.com/revenuecalculator/revenue_calculator_v2.asp)