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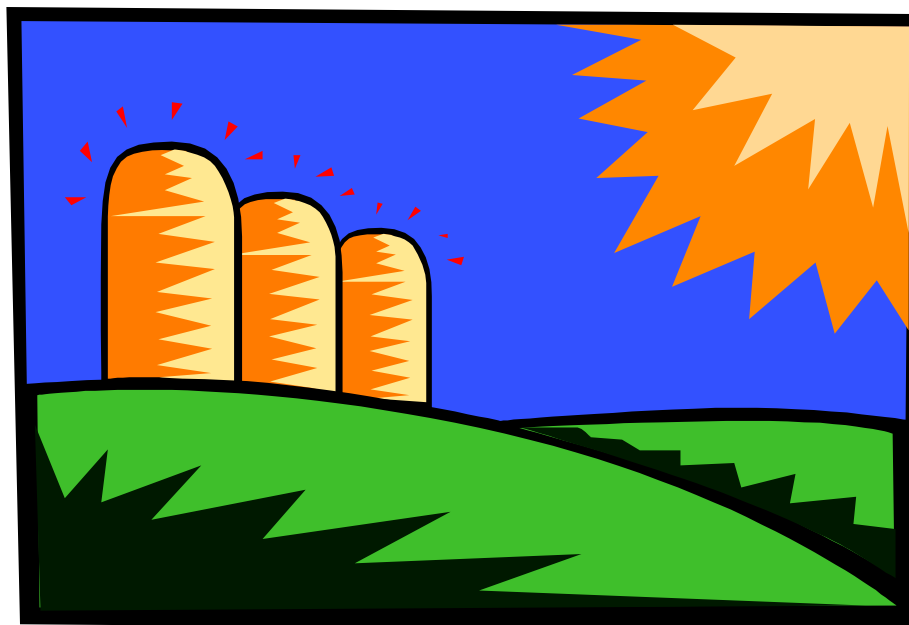
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Do I Need Crop Insurance?

*Self evaluating crop insurance as a risk
management tool in New York State*



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Do I Need Crop Insurance?

Self evaluating crop insurance as a risk management tool

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INTRODUCTION

Using this workbook

This workbook is intended to help farm producers understand the purposes of crop insurance and how it can be used as a tool to prevent financial disasters due to crop yield and/or market losses. After using this workbook, it is hoped that a farm producer will be better acquainted with the crop insurance choices available and whether or not crop insurance is a tool that will be useful for their particular operation.

Symbols found throughout workbook

There are three symbols you will see throughout this workbook. They represent discussion points, decision points, and more information.

Discussion Points

There will be many questions to answer and discuss along the way. This symbol will alert you that you need to discuss an important question or fill out a worksheet. All worksheets are included in this workbook.



Discussion Point

Decision Points

At each step in this workbook, you will be asked to make decisions regarding the future of your farm. This will help you narrow down the options that fit your particular situation. *Before you move to the next step in the process, you need to answer these questions!*



Decision Point

How does insurance work?

Insurance, basically defined, is a tool to protect yourself against a small probability of a large loss. Insurance companies provide a means for people to share risk—to protect against financial losses by combining their potential for loss with that of others. Insurance companies collect premiums contributed by individuals and invest these funds. The proceeds from these invested funds are then used to pay for losses experienced by anyone covered by one of their insurance policies. In this manner, large amounts of money can be available to any one person in the group that experiences a loss covered by the insurance policy.

Each consumer has his or her unique potential for loss. The premiums are adjusted higher or lower to reflect this loss potential. The higher the risk of a loss, the higher the premium will be. In addition, insurance companies are also businesses which have to cover their overhead expenses and generate a profit. Your premium is also adjusted to reflect these costs as well—so insurance is not a tool to make money, rather it is a tool to help compensate and individual or business for losses that might otherwise cause a financial disaster!

Question #1: What is your risk exposure?

How likely are you to experience a crop loss on your farm? This is important! Do you have a loss once every 5 years or once every 10 years? Are there other factors that may make your business more exposed to crop loss risks? This chapter will help you determine what your risk exposure is—which will be important in the following chapter and in your decision to purchase crop insurance.

What kinds of crop losses are most likely to occur on your farm?

Using the table below, try to make some rough estimates of what kinds of crop losses could occur, the loss in yield, and what this yield loss could cost your operation. To get an accurate estimate of what yield losses are likely, you should consult your historic crop production records. The importance of good records cannot be over emphasized!

When figuring the cost of a loss, figure how much it would cost you (market value) to replace the lost crops. In addition, if you really have to buy in crops during a year where there was a wide-spread loss, you will have to pay even higher prices to find and truck in the necessary crops.

Example

Our sample farmer is growing corn for grain. First, he figures out how many tons of corn a 20%, 40%, 60%, 80%, and 100% loss equals in bushels. Then takes the market price for corn and multiplies it the number of bushels to find out what his income loss would be in each scenario. The small table below shows what the losses would be on a farm that normally averages 40,000 bushels of corn at a market price of \$2.25/bushel.

Crop	20% Loss	40% Loss	60% Loss	80% Loss	Total Loss
Corn	-\$18,000	-\$36,000	-\$54,000	-\$72,000	-\$90,000

The results show that this farm *could* experience a range of losses from \$18,000 to \$90,000 in gross receipts. The next decision that this farmer should make is what % of losses are *likely* on his farm. Maybe it is unlikely that he will experience a total loss, but there is a high probability of a 20% loss during a drought year. This farmer should make decisions based on how he could cover \$18,000 in receipt losses during any one crop year.



Worksheet #1: Calculating the value of probable crop losses on your farm

Crop	20% Loss	40% Loss	60% Loss	80% Loss	Total Loss
Total					

After you have completed your worksheet, choose which column is the type of loss that might actually happen on your farm. This number will be your “Probable Loss.” You will need to use this number to make future decisions. You could also use a range of possible amounts.



Your Farm’s Probable Loss: \$ _____

What factors make your business more vulnerable to risk?

Read the items below and decide whether your business falls into one of these categories. If so, you may want to revise your risk exposure estimate.

- Stage in business life cycle: Businesses are more vulnerable to risk during certain stages in its development. Business life cycle is simply the stages of development a business goes through—from start-up to growth to maturity and then into decline. Certainly those businesses that are in start-up or growth phases are more vulnerable to production losses than those that are either mature or declining in production. Also, if a business is being transferred from one generation to the next, the business is basically at start-up (with new owners and managers) and is just as vulnerable to production losses.
- Have just suffered a loss in a recent year: The typical way crop insurance is purchased! A farm producer suffers a large loss before the need to purchase crop insurance is realized. While this may seem “after the fact”, it is reasonably considered—after all not many farms can withstand two crop loss years in a row.
- Undergoing changes in business or family: If a business is making changes, such as switching to a new production method, it may be more vulnerable to crop production losses. In addition, if a family is experiencing increased family living costs (due to health care, education, housing or any number of reasons), they could be more vulnerable to a loss in farm income due to crop production losses.
- Business is exposed to many other risks: Crop production losses are only one piece of the risk pie. Your farm could be exposed to any number of risks: legal (lawsuits), human resources (employees, family, business succession, divorce, disagreement), financial (interest rates, debt, bank foreclosure), and marketing risks (commodity prices rising/falling, losing access to markets). If you do not have plans or insurance to deal with these other risks, crop insurance may be a good idea.

Revising your risk exposure and estimating probable losses

You do not need to revise your estimate in terms of the magnitude of the loss (% crop failure, etc.), but more in terms of how vulnerable you are to a loss. The more vulnerable you are to a loss, the more a crop production loss may cost you—over and above the value of the crops. The sample farmer decides that, with 2 kids in college, his farm is at additional risk and he revises his estimate from \$18,000 to \$36,000 in probable losses, should there be a crop production loss.

Crop	20% Loss	40% Loss	60% Loss	80% Loss	Total Loss
Corn	-\$18,000	-\$36,000	-\$54,000	-\$72,000	-\$90,000

Note: This is a very simple way to revise your estimate of how much a crop loss will actually cost you. You could calculate a closer figure by actually calculating interest costs on outstanding bills and operating loans that would have to wait to be repaid if income fell due to a loss in crop production. Late fees, missing early bird discounts, cutting production inputs (and future yield) are just a few other items that might be considered.



Your Farm’s (Revised) Probable Loss: \$ _____

Question #2: How large of a loss can you afford?

The basic decision with any insurance product is: how much of a loss can you afford? This chapter will help you decide if you have enough equity or cash flow to cover a loss.

How can you absorb a crop loss?

Now that you know approximately how much of a loss is possible on your farm you can start to compare your options on how this loss would be absorbed on an annual basis. There are two basic methods to determine whether or not you can absorb a crop loss: equity and cash flow.

Equity: How much in assets (in reserve) do you have to spare?
Will a bank loan you more money if you suffer a crop loss?

Cash Flow: Can you absorb a loss and still pay the bills and the family expenses?



Worksheet #2: Determining how much equity you have

Fill out the worksheet below with current account balances (*market value*) for each category. You may already have a balance sheet that was created for you by your bank loan officer.

Equity Worksheet

Assets

Checking Account \$ _____
Savings Account \$ _____
Inventory for Sale \$ _____
Stocks & Bonds \$ _____

Livestock/Live Crops \$ _____
Machinery \$ _____
Farm Equip \$ _____
Tools/Supplies \$ _____

House \$ _____
Land \$ _____
Buildings \$ _____
Other \$ _____

Total Owned \$ _____

Liabilities

Credit Cards \$ _____
Unpaid Bills \$ _____
IOU's \$ _____
Operating Loans \$ _____

Equip Loans \$ _____
Vehicle Loans \$ _____
Other Loans \$ _____

Mortgage \$ _____
Other \$ _____

Total Owed \$ _____

Total Owned – Total Owed = Total Equity \$ _____

Example: Market value balance sheet for sample farm operation

Equity Worksheet

Assets		Liabilities	
Checking Account	\$ 1,000	Credit Cards	\$ 5,000
Savings Account	\$ 2,000	Unpaid Bills	\$ 5,000
Inventory	\$ 30,000	Operating Loan	\$ 20,000
Stocks & Bonds	\$ 10,000		
Livestock/Live Crops	\$ 30,000	Car Loans	\$ 20,000
Machinery	\$100,000	Other Loans	\$ 40,000
Farm Equip	\$ 75,000		
Tools/Supplies	\$ 10,000		
House	\$100,000	Mortgage	\$150,000
Land	\$300,000	Other	\$ _____
Other	\$ _____		
Total Owned	\$658,000	Total Owed	\$240,000
<i>Total Owned</i>		<i>- Total Owed = Total Equity</i>	
		<i>\$418,000</i>	

How much equity do you need?

Most agricultural lenders would like to see total equity greater than 60% of all assets (equity/total owned) so that they feel as if their loans are safe. Your banker may have a higher or lower number depending upon what kind of farm you operate—ask them which equity % they prefer to use. You may also have a personal goal to keep equity at a certain %. To determine the magnitude of the loss in equity on your farm, use the formulas below:

Step #1: Percent equity before the possible crop loss

Using the equity figure that you arrive at when you have completed the equity worksheet, figure out percent equity like this: $\text{Total Equity} / \text{Total Owned} * 100 = \text{Percent Equity}$

Example: Percent Equity for Sample Farm $(418,000/658,000)*100 = 63.53\%$



Your farm calculation:

Total Equity: _____
 Divided by Total Assets: _____
 Equals: Percent Equity: _____

Step #2: Percent equity after the possible crop loss

Use your possible loss figure to reduce your total equity (assuming all things stay the same, if you take out debt to pay for a crop loss, your equity will drop by that amount). Refigure your percent equity using these new numbers.

Example: Percent Equity for Sample Farm $(418,000 - 36,000/658,000)*100 = 58.05\%$



Your farm calculation:

Equity – Crop Loss: _____
 Divided by Total Assets: _____
 Equals Percent Equity: _____ (After the loss occurs)

Note: In our sample farm example, the farm's equity dropped from 63.53% to 58.05%. This example assumes that the value of the crop loss was equal to the cost of growing the crops, so real-life figures may differ—equity may drop less than the entire market value of the crop.

Our sample farm may be put in a tight situation if a 40% crop loss occurs. The bank, in this instance, may not loan the farm the money to cover its crop losses. If your farm's equity has the potential to drop to "danger levels" due to a crop disaster, you may decide that crop insurance is something that you should look into. However, you should read through the rest of this book to make other calculations that will make your decision easier.

Example: What is the sample farm's allowable fall in equity?

Current Equity level: 63.53%

Equity desired as the minimum level: 60%

The most equity can absorb in crop losses (current – minimum level) = 63.53% - 60% = 3.53%

Multiply the equity drop by the total assets: (3.53% * 658,000) = \$23,227.

Therefore, the most this farm can spare out of equity is \$23,227.



Worksheet #3: Determining maximum allowable fall in equity

Using the numbers from your balance sheet and your most likely loss scenario

Current Equity level: _____%

A

Equity desired as the minimum level: _____%

B

The most equity can absorb in crop losses (current – minimum level) = _____% - _____% = _____%

A

B

C

Multiply the equity drop by the total assets: (_____) * Your total Assets = \$_____.

C

Cash flow: what is sufficient?

Some farms may be able to weather their crop losses through annual cash flow or annual retained earnings. To know whether or not your farm will be able to do this, you should complete a cash flow budget to determine your cash carryover. To do a quick projection, make the following changes to your annual profit and loss (an accrual income statement).

Income: Include all income

Cash outflow: Include all expenses except depreciation; add in bank principal payments, family living expenses, and state and federal income taxes.

Example: Sample Farm

Income: 155,000

Cash outflow: 135,000 – 18,000 depreciation + 12,000 principal pmts + 20,000 family living
= \$149,000

Retained Earnings = Accrual Income – Cash outflow (with adjustments)

(cash carryover) = \$155,000 - \$149,000 = **\$6,000**

In this farm's case, their 1-year cash carryover is not enough to absorb the possible crop loss of \$36,000.



Worksheet #4: Determining cash carryover

Accrual Income:		_____
Accrual Expenses:	_____	
Less: Depreciation	_____	
Plus: Principal Payments:	_____	
Plus: Family Living Exp:	_____	
=Cash Outflow		_____
Accrual Income – Cash outflow		_____

However, to find out the true measure of what is absorbable in one year, add the maximum fall in equity to the cash carryover earnings that are available. This gives our sample farmer \$29,227 in funds to work with (See the example below).

Example: Total losses that would be absorbable

Maximum allowable drop in equity:	\$23,227
Plus: Maximum funds from cash flow:	<u>\$6,000</u>
Equals: Total amount of absorbable losses	\$29,227



Worksheet #5: Determining total absorbable losses for your farm

Maximum allowable drop in equity:	\$ _____
Plus: Maximum funds available from cash flow:	\$ _____
Equals: Total amount of absorbable losses	\$ _____



Will your farm have sufficient equity and/or cash flow to cover the losses that are likely to occur on your farm? _____. If no, what is your maximum absorbable loss? \$ _____

Question #3: What are your crop insurance options?

Your crop insurance options depend upon many factors: what state and county you live in, what types of crops you grow, the amount of each different type of crop you grow, and other factors. This chapter is going to briefly outline the different types of insurance that are *available in New York*. For more information about each of these policies, contact your crop insurance agent, or follow up with additional information listed at the end of this book.

The crop insurance policies available in New York are:

1. Multiple Peril Crop Insurance (MPCI)
 - a. Multiple Peril Crop Insurance—Catastrophic Coverage (CAT)
 - b. Multiple Peril Crop Insurance—Average Production History (APH)
2. Crop Revenue Coverage (CRC)
3. Indexed Income Protection (IIP)
4. Adjusted Gross Revenue (AGR) and (AGR)-Lite
5. Non-Insured Crop Disaster Coverage (NAP)—Catastrophic coverage for non MPCI crops

Table 1: Basic information on different crop insurance policies available in New York

Characteristics	MPCI-CAT	MPCI-APH	CRC	IIP	AGR/AGRLITE	NAP
Loss Based On	Low Yields	Low Yields	Low Yields Low Prices	Low Yields Low Prices	Low Gross Revenue	Low Yields
Yield Coverage	50% of Ave Production	You choose % Coverage level	50%-85% Ave Production	Based on gross revenue	Based on gross revenue	50% of Ave Production
Price Coverage	55% of price set by RMA	You choose % Coverage level	Harvest or Feb Futures Price	Harvest or Feb Futures Price	Based on gross revenue	55% of price set by RMA
Revenue Coverage	Not Applicable	Not Applicable	Losses due to price & yield	Losses due to price & yield	Any drop in gross revenue	Not Applicable

Crop yield coverage policies (MPCI-CAT, MPCI-APH)

The Multiple Peril policies cover a producer at a certain % of yield and pay out a certain % of the price for that crop. For example: Multiple Peril-Catastrophic 50/55 means 50% coverage/55% price. So, this policy would not start paying until over 50% crop loss occurs; and then it would pay out at the quantity of the loss below 50% at 55% of the RMA determined price. MPCI-CAT is very inexpensive, and is the minimum coverage that any producer can elect to buy.

With MPCI-APH, you will have the option to choose which coverage level and what price you want to insure your crops at (however these levels will be limited on what policies are offered in NY State). Frequently, when producers talk about “buying up” in crop insurance, they are talking about purchasing additional MPCI coverage over and above just the MPCI-CAT (50%/55%) level. Sometimes, FSA will require a buy-up of MPCI coverage before they will qualify a producer for USDA crop disaster payments (if the producer hasn’t already been purchasing MPCI-CAT). Disaster payments, however, have nothing to do with insurance—they are direct payments from the federal government to assist crop producers that have suffered disaster level crop losses.

Income coverage policies (CRC, IIP)

Crop Revenue Coverage (CRC) and Indexed Income Protection policies cover losses in income due to either yield losses or price losses. These policies have similar fractions describing the coverage level and price; however, instead of yield being the loss trigger, income (yield * price) becomes the loss figure.

The difference between these two policies is that CRC is based on field level results and IIP is based on farm level results. With CRC, if one field falls below the insured level, then you will receive a payment. With IIP, the entire farm must fall below the insured level in order to receive a payment. It must be noted, however, that not all revenue from a farm will be covered by these types of insurance; just the revenue from the particular insured crop.

Revenue coverage policies (AGR and AGR-Lite)

Adjusted gross revenue policy coverage levels are based on the adjusted gross revenue of the entire farm enterprise. The fractions used to describe the policy coverage are similar, but the first number is the amount of gross revenue that has to be lost before the policy starts paying and the second number is the amount of the loss that will be covered. For instance, AGR 85/90, will start covering a producer after they have lost more than 15% of their gross revenue (85% coverage level), and will pay 90% of the amount of the loss below the 85% coverage level. Adjusted gross revenue policies are designed for those producers that don't quite fit the mold of the previously mentioned insurance policies. Producers that have multiple numbers of crops, multiple sources of revenue, and multiple sources of risk (beyond just price and yield) are more likely to be interested in the AGR policies.

Non-insured crop policies

These policies are very similar to MPCCI-CAT policies, but are designed for those crops that MPCCI doesn't cover. The protection levels are the same as MPCCI-CAT, at 50%/55% coverage. Just like CAT, this insurance product is very inexpensive and is the minimum that any producer can elect to buy.

Which policy to choose?

Which policy you choose will first be narrowed down by what crop you grow and where you are located. You should contact your crop insurance agent to ask what policies are available to you in your area. Next, you should choose a policy based on your belief of what type of loss is most likely to occur with your crop income—are you more exposed to yield/quality losses or market losses. If yield losses are more likely, then you may decide to pick a crop yield coverage policy. If quality losses are likely, you might need a rider on your yield insurance. If market price fluctuations are more likely to cause a loss, then you might be interested in an income coverage policy. If you have multiple sources of revenue, multiple crops, and multiple areas of risk, you may be interested in a policy that covers gross revenue. Even if you decide that you do not want to buy crop insurance, you should at least pay the nominal fee for MPCCI-CAT or NAP.

Choices faced by our sample farm

Our sample farmer is a corn grain grower in Cayuga County, New York. He can choose from MPCCI (CAT, APH), IIP, CRC, and AGR/AGR-Lite. Our sample farmer thinks corn prices can only move in one direction from where they are (up!), so he is more interested in insuring against yield loss and will desire to choose between the crop yield coverage policies (MPCCI-CAT, MPCCI-APH), but may also consider the revenue coverage policies (CRC, IIP, AGR) because they cover both yield and price.



What Type of crop loss is most likely to occur on your farm?

- | | |
|-------------------------------|--|
| Crop yield loss | _____ (yield based insurance: Analysis #1) |
| Crop quality loss | _____ (yield insurance or income ins.: Analysis #1 & #2) |
| Market loss (price) | _____ (income based insurance: Analysis #2) |
| Both yield and mkt. | _____ (income or revenue based insurance: Analysis #2) |
| Many products & risks of loss | _____ (revenue based insurance: Analysis #2) |

Analysis #1: Comparing yield-based insurance options

Choosing a coverage level and a payment level (yield-based insurance)

From the exercises in the previous chapter, you have determined your maximum absorbable loss. You have also calculated what % of a crop loss is likely. Remember these numbers—as this is going to relate to the amount of coverage and payout protection you will need. Below are some charts that examine the interplay between coverage level and payout amount. The higher the coverage level, the *least amount* of losses you would have to sustain in order for the policy to start paying. The higher the payout %, the closer your payment will be to market value.

Table 2: Worksheet results from sample farm

Table 2 below is the data from the worksheets completed by our sample farm. This data is used to fill out Table 3 and determine which insurance coverage level (of those offered in New York) is most appealing to the sample farm.

APH Yield (bushels)	Price (\$/bu)	Likely Loss in bushels	Likely loss in dollars	Absorbable Loss (\$)
40000	2.25	16000	\$ 36,000.00	\$ 29,227.00

Table 3: Illustrating the interplay between coverage and payout level (sample farm data)

% Yield Coverage	% Price Payout	Yield Loss Trigger (bu)	Insured bushels	Payout Price (\$/bu)	Insurance Pmt. (if 16000 bu loss)	Lost Revenue Less Insurance pmt
65%	75%	14,000	2,000	1.69	3,375	32,625
65%	80%	14,000	2,000	1.80	3,600	32,400
65%	85%	14,000	2,000	1.91	3,825	32,175
65%	90%	14,000	2,000	2.03	4,050	31,950
65%	95%	14,000	2,000	2.14	4,275	31,725
65%	100%	14,000	2,000	2.25	4,500	31,500
70%	75%	12,000	4,000	1.69	6,750	29,250
70%	80%	12,000	4,000	1.80	7,200	28,800
70%	85%	12,000	4,000	1.91	7,650	28,350
70%	90%	12,000	4,000	2.03	8,100	27,900
70%	95%	12,000	4,000	2.14	8,550	27,450
70%	100%	12,000	4,000	2.25	9,000	27,000
75%	75%	10,000	6,000	1.69	10,125	25,875
75%	80%	10,000	6,000	1.80	10,800	25,200
75%	85%	10,000	6,000	1.91	11,475	24,525
75%	90%	10,000	6,000	2.03	12,150	23,850
75%	95%	10,000	6,000	2.14	12,825	23,175
75%	100%	10,000	6,000	2.25	13,500	22,500
80%	75%	8,000	8,000	1.69	13,500	22,500
80%	80%	8,000	8,000	1.80	14,400	21,600
80%	85%	8,000	8,000	1.91	15,300	20,700
80%	90%	8,000	8,000	2.03	16,200	19,800
80%	95%	8,000	8,000	2.14	17,100	18,900
80%	100%	8,000	8,000	2.25	18,000	18,000
85%	75%	6,000	10,000	1.69	16,875	19,125
85%	80%	6,000	10,000	1.80	18,000	18,000
85%	85%	6,000	10,000	1.91	19,125	16,875
85%	90%	6,000	10,000	2.03	20,250	15,750
85%	95%	6,000	10,000	2.14	21,375	14,625
85%	100%	6,000	10,000	2.25	22,500	13,500

As you can see in table 3, we went a step further and shaded those levels of insurance that would be appealing to our sample farm. Our farmer would insure with a policy in the shaded area because the total losses in that area are less than his maximum absorbable loss of \$29,227. In addition, the policies that our producer can choose from do not offer yield coverage over 75%, so those policy levels are not shaded, even though they would be appealing to purchase .



Worksheet #6: Actual figures from your farm operation

Fill in the table below with the results gained from worksheets and exercises in previous chapters of this book. Remember, you only need to fill the worksheet out for those policies that are available to you in New York—it may cut down the pencil work!

APH Yield (bushels)	Price (\$/bu)	Likely Loss in bushels	Likely loss in dollars	Absorbable Loss (\$)
(A)	(B)	(C)	(D)	(E)



Worksheet #7: Comparing coverage level and payout price for your farm

% Yield Coverage (F)	% Price Payout (G)	Yield Loss Trigger (bu) (H)	Insured bushels (I)	Payout Price (\$/bu) (J)	Insurance Pmt. (if 16000 bu loss) (K)	Lost Revenue Less Insurance pmt (L)
		= (F) * (A)	= (C) - (H)	= (G) * (B)	= (I) * (J)	= (D) - (K)
50%	75%					
50%	80%					
50%	85%					
50%	90%					
50%	95%					
50%	100%					
55%	75%					
55%	80%					
55%	85%					
55%	90%					
55%	95%					
55%	100%					
60%	75%					
60%	80%					
60%	85%					
60%	90%					
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60%	100%					
65%	75%					
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85%	75%					
85%	80%					
85%	85%					
85%	90%					
85%	95%					
85%	100%					

At what level should you insure?

After you have completed worksheet #7 you need to compare your maximum absorbable loss with the far right column in worksheet #7 (column (L)). Those policies in which the lost revenue is less than the maximum absorbable loss are those that would be the most advantageous to examine. Draw a line around those coverage and payment levels that you find appealing to your farm operation (and that are offered in New York State). This will cut down on the worksheets that you will have to fill out in the next two chapters, as you will only have to fill in the worksheet boxes for those policies which are both offered and make sense on your farm.

Insure the accuracy of the data

Crop insurance policies may differ on what prices are used to determine column (B) above. Some use the futures market (CRC and IIP), some use a price set by RMA (CAT and APH), and some are based on harvest price (CRC bases price on harvest prices and February futures prices). This may affect your decision. In addition, not all policies will have coverage combinations like those listed above, but may offer more/less coverage. If you use the appropriate price and the appropriate coverage levels in your calculations, your worksheets will prove valuable in determining which policies might be appropriate for you.



Have you narrowed down the policies that you think make sense on your farm?

Analysis #2: Comparing revenue-based insurance

Choosing a coverage level and a payment level (revenue-based insurance)

From the exercises in the previous chapter, you have determined your maximum absorbable loss. You have also calculated what dollar amount in revenue losses are. These numbers will help you decide what coverage and payout level you will need for revenue based insurance. Below are some tables that examine the interplay between coverage level and payment level for revenue based insurance. Notice that the table is similar to the yield based insurance products, but that the loss is based on crop production revenue (yield and/or price) dropping.

Table 4: Worksheet results from sample farm

The table below is the data from the worksheets completed by our sample farm. This data is used to fill out Table 4 and determine which insurance coverage level is most appealing to the sample farm (Table 5).

Revenue Total (\$)	Likely Loss (Revenue \$)	Absorbable Loss (\$)
\$ 90,000.00	\$ 36,000.00	\$ 29,277.00

Table 5: Illustrating the interplay between coverage and payout level (sample farm data)

% Revenue Coverage	% Payout	Revenue Loss Trigger	Insured Revenue	Insurance Payment (\$)	Lost Revenue (Less Insurance)
65%	75%	31,500	4,500	3,375	32,625
65%	80%	31,500	4,500	3,600	32,400
65%	85%	31,500	4,500	3,825	32,175
65%	90%	31,500	4,500	4,050	31,950
65%	95%	31,500	4,500	4,275	31,725
65%	100%	31,500	4,500	4,500	31,500
70%	75%	27,000	9,000	6,750	29,250
70%	80%	27,000	9,000	7,200	28,800
70%	85%	27,000	9,000	7,650	28,350
70%	90%	27,000	9,000	8,100	27,900
70%	95%	27,000	9,000	8,550	27,450
70%	100%	27,000	9,000	9,000	27,000
75%	75%	22,500	13,500	10,125	25,875
75%	80%	22,500	13,500	10,800	25,200
75%	85%	22,500	13,500	11,475	24,525
75%	90%	22,500	13,500	12,150	23,850
75%	95%	22,500	13,500	12,825	23,175
75%	100%	22,500	13,500	13,500	22,500
80%	75%	18,000	18,000	13,500	22,500
80%	80%	18,000	18,000	14,400	21,600
80%	85%	18,000	18,000	15,300	20,700
80%	90%	18,000	18,000	16,200	19,800
80%	95%	18,000	18,000	17,100	18,900
80%	100%	18,000	18,000	18,000	18,000
85%	75%	13,500	22,500	16,875	19,125
85%	80%	13,500	22,500	18,000	18,000
85%	85%	13,500	22,500	19,125	16,875
85%	90%	13,500	22,500	20,250	15,750
85%	95%	13,500	22,500	21,375	14,625
85%	100%	13,500	22,500	22,500	13,500

As you can see in this example, the sample farm would be interested in the shaded policies. Again, the revenue policies available to our producer in NY stop offering yield coverage at 75%.



Worksheet #8: Actual figures from your farm operation

Fill in the table below with the results gained from worksheets and exercises in previous chapters of this book.

Revenue Total (\$)	Likely Loss (Revenue \$)	Absorbable Loss (\$)
(A)	(B)	(C)



Worksheet #9: Comparing coverage level and payout price for your farm

% Revenue Coverage (D)	% Payout (E)	Revenue Loss Trigger (F) = (D) * (A)	Insured Revenue (G) = (B) - (F)	Insurance Payment (\$) (H) = (E) * (G)	Lost Revenue (Less Insurance) (I) = (B) - (H)
50%	75%				
50%	80%				
50%	85%				
50%	90%				
50%	95%				
50%	100%				
55%	75%				
55%	80%				
55%	85%				
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80%	100%				
85%	75%				
85%	80%				
85%	85%				
85%	90%				
85%	95%				
85%	100%				

At what level should you insure?

After you have completed worksheet #9 you need to compare your maximum absorbable loss with the far right column in worksheet #9 (column (I)). Those policies in which the lost revenue is less than the maximum absorbable loss are those that would be the most advantageous to examine. Draw a line around those coverage and payment levels that you find appealing to your farm operation. When you start to fill out the worksheets in the next chapter, you will only have to fill in the worksheet for those policies which make sense on your farm.



Have you narrowed down the policies that you think make sense on your farm?

Decision: Deciding if you should buy crop insurance

The decision to buy or not to buy crop insurance should boil down to a basic decision. This decision is whether you wish to self insure or not. By completing the worksheets in this chapter, you should be able to make a conscious decision whether to buy crop insurance or to self-insure.

Narrowing down the policy decisions

After your farm suffers a loss, it is vulnerable to another loss, even with insurance. If you choose a policy that simply covers everything above your maximum absorbable loss, your farm is left vulnerable until it can build more cash and retained earnings. You need to determine which policies will cover the crop losses and give your farm enough time to recharge its reserves.

Step 1: Likely frequency of crop losses

The first prediction that you will have to make is: what is the interval (in years) that I expect between crop production losses? Or, what is the frequency of crop production losses *that I can withstand?*

Example: Our sample farmer expects that he has experienced a crop production loss (of a magnitude that is covered by insurance—that is a crop loss that greater than 25%) once every **8 years**. This is our sample farmer's **loss interval**.



What is your estimate of the frequency of crop losses (loss interval)?

Expected frequency of crop losses (>25%): _____ years = your loss interval

To self insure or to buy crop insurance

This decision usually starts with how scary the premium is—if it isn't so scary, like MPCI-CAT (catastrophic) insurance (total of \$100), then the decision is easy. If the premium is up in the price range of \$10-\$50 an acre (with corn being in the range of \$4 to \$15 an acre), then the decision becomes more complicated. However, with the completed worksheets in this book, the decision does not need to be that hard—you just need to decide what you would be *willing* to pay for insurance.

What would you be willing to pay for insurance?

While it would be great to do a cost benefit analysis for premiums and policies for this individual farm, there are just too many intricate policy details to do this analysis justice. For actual premiums for your farm, you need to speak to your crop insurance agent. The only decision factor left is to decide what premium you would be willing to pay for your desired crop insurance protection. If the premiums are less than this amount, then you should buy the insurance. If the premiums are higher than you are willing to pay, then you may decide to “self-insure.”

Step 2: What would be the maximum premium you would be willing to pay?

The maximum premium you would be willing to pay is equal to the amount it would cost you to self insure. To do this, we have to calculate the **value** that a crop insurance policy represents. First, we will simply divide the expected payout from the policy by the expected frequency of the crop loss. Second, we will compare the time it takes to **recover** (how many years it takes to regain the lost capital through annual cash flow) from a self-insured crop loss to the time it takes to recover from an insurance covered crop loss. Third, we will increase/decrease the amount that the policy should be worth by setting it equal to the value of self-insuring. The answer (column to the far right) is the **maximum premium** your particular farm should be willing to pay for crop insurance.

Tables 6 & 7: Determining the maximum premiums our sample farm would be willing to pay

Annual cash	Absorbable loss	Likely Loss	Loss Interval
6,000	29,277	36,000	8
(A)	(B)	(C)	(D)

The table below shows the policies that are both offered and appealing to our sample farm and the premiums he would be willing to pay (shaded)

Coverage %	Payment %	Insurance Payment (E) (wkshts 7&9)	Revenue Loss Less Insurance (F) (wkshts 7&9)	Recovery w/no insurance (yrs) (G) =(C)/(A)	Annual value (cost) of Ins. (H) =(E)/(D)	Recovery (yrs) w/ Ins. Cost/benefits (I) =(F)/(A-H)	Maximum Premium (J) =(H*G)/(I)
70%	75%	6,750	29,250	6	\$ 843.75	5.67	892.43
70%	80%	7,200	28,800	6	\$ 900.00	5.65	956.25
70%	85%	7,650	28,350	6	\$ 956.25	5.62	1,020.76
70%	90%	8,100	27,900	6	\$ 1,012.50	5.59	1,085.99
70%	95%	8,550	27,450	6	\$ 1,068.75	5.57	1,151.97
70%	100%	9,000	27,000	6	\$ 1,125.00	5.54	1,218.75
75%	75%	10,125	27,125	6	\$ 1,265.63	5.73	1,325.41
75%	80%	10,800	26,533	6	\$ 1,350.00	5.71	1,419.54
75%	85%	11,475	25,942	6	\$ 1,434.38	5.68	1,514.67
75%	90%	12,150	25,350	6	\$ 1,518.75	5.66	1,610.86
75%	95%	12,825	24,758	6	\$ 1,603.13	5.63	1,708.21
75%	100%	13,500	24,167	6	\$ 1,687.50	5.60	1,806.79

What does our sample farmer decide?

Just for example, let's say that our farmer can buy corn crop insurance for \$5 an acre with the government subsidy (the USDA subsidizes crop insurance premiums, so you will want to see if stated premiums are with or without the subsidy). To produce his 40,000 bushels, he insures 285 acres of land (average yield of 140 bu/acre). He would be willing to buy any insurance product listed above if the premiums were less than \$1425/year. The shaded premiums and policies above are attractive to our producer and he would most likely buy this insurance, because it provides valuable risk management to his operation.



Worksheet #10: Determining the maximum premium you would be willing to pay

Annual cash	Likely Loss	Loss Interval
(A)	(C)	(D)

Coverage %	Payment %	Insurance Payment (E) (wkshts 7&9)	Revenue Loss Less Insurance (F) (wkshts 7&9)	Recovery w/no insurance (yrs) (G) =(C)/(A)	Annual value (cost) of Ins. (H) =(E)/(D)	Recovery with Ins. Cost/benefits (I) =(F)/(A-H)	Maximum Premium (J) =(H*G)/(I)
50%	75%						
50%	80%						
50%	85%						
50%	90%						
50%	95%						
50%	100%						
55%	75%						
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85%	75%						
85%	80%						
85%	85%						
85%	90%						
85%	95%						
85%	100%						

Other factors that may affect your decision to buy insurance

What if the loss interval is shorter than I thought it would be?

This would be a good argument for buying insurance! Crop losses that are close together do occur. Past weather is no indication that future weather will be the same or different! If the premiums are close to what you would be willing to pay, then this concept may tip the scales in favor of buying crop insurance.

Insurance doesn't cover everything!

Not all losses are insurable. Some typical causes of loss that aren't insured are: failure to follow recognized good farming practices for the crop, losses caused by employees, mechanical failures, etc. Revenue policies, for example, do not cover income lost due to value added activities. Each policy is different, but the bottom line is that you better read what constitutes a loss and what doesn't!

What about disaster payments?

Crop disaster payments, while they have occurred in past years, may not continue into the future. In addition, the payments usually take at least a year after the disaster to reach the producer—in the meantime, what happens? Also, certain types of crop insurance will pay the producer and allow him/her to collect the disaster payment in addition to the indemnity payment. Furthermore, the USDA is starting to require producers to sign up for crop insurance in order to be eligible for future disaster payments.

Does crop insurance make sense on your farm?

There are many factors in the decision to buy crop insurance. While the exercises in this workbook will not give you an exact answer to your questions on crop insurance, it has hopefully brought you closer to a well educated decision. Briefly review the decision factors in this workbook:

- ❑ What is your risk exposure?
 - Are crop losses likely to occur on your farm?
 - What would be the value of the loss on your farm?
- ❑ How large of a loss can you afford?
 - Can you cover that loss through cash flow and/or equity?
 - What are the maximum absorbable losses on your farm?
- ❑ What are your crop insurance options?
 - What policies are available in your part of the state
 - Is a yield based or a revenue based policy best for your farm?
 - At what coverage level does it make sense to insure?
- ❑ What is the maximum premium you are willing to pay?
 - What is the likely frequency of a crop loss?
 - What is the value of the insurance policy to your farm?
 - Are there other factors that make crop insurance more or less appealing?



If you think that crop insurance might be a good risk management tool on your farm, contact one of the companies that issue policies in New York State. A crop insurance representative will be able to give you up to date price quotes and policy details. If you have Microsoft excel and wish to use the spreadsheets created for this book, email str4@cornell.edu. In addition, a more comprehensive spreadsheet analysis is available from Kansas State University at: <http://www.agmanager.info/crops/insurance/spreadsheets/default.asp>

Supporting Materials

Insurance Terms Defined¹

Acronyms: The US government loves these!

ACT--The Federal Crop Insurance Act, (7 U.S.C. 1501 et seq.)

AGR-- Adjusted Gross Revenue

APH--Actual Production History

CAT--Catastrophic Risk Protection

CCC--Commodity Credit Corporation

CIH--Crop Insurance Handbook

CSREES--Cooperative State Research, Education, and Extension Service

FSA--Farm Service Agency

FCIC--Federal Crop Insurance Corporation

IRS--Internal Revenue Service

LAM--Loss Adjustment Manual

MPCI--Multiple Peril Crop Insurance

PHTS--Policyholder Tracking System

RMA--Risk Management Agency

USA--United States of America

USDA--United States Department of Agriculture

Crop Insurance Forms and Documents

Actuarial documents. Available at the producer's insurance agent's office, this material for a specific crop year shows the amount of insurance or production guarantees, coverage levels, premium rates, practices, insurable acreage, and other related information regarding crop insurance in the county.

Catastrophic Risk Protection Endorsement. The part of the crop insurance policy that contains provisions specific to catastrophic risk protection.

Crop Provisions. The part of the policy that contains the specific provisions of insurance for each insured crop.

Insured crop. The crop for which coverage is available under the Basic Provisions and the applicable Crop Provisions as shown on the application for insurance.

Policy. The agreement between the producer and the insurance company, consisting of the accepted application, the Basic Provisions, the Crop Provisions, the Special Provisions, other applicable endorsements or options, the actuarial documents for the insured crop, the Catastrophic Risk Protection Endorsement (if applicable), and the applicable regulations published in the Federal Register.

Special Provisions. The part of the policy that contains specific provisions of insurance for each insured crop that may vary by geographic area.

¹ http://www.aginsurance.org/Crop_Insurance_Terms.htm

Summary of coverage. The insurance company's statement to the producer, based upon the producer's acreage report. It specifies the insured crop and the guarantee or amount of insurance coverage provided by unit.

Written agreement. A document that alters designated terms of a policy as authorized under the Basic Provisions, the Crop Provisions, or the Special Provisions for the insured crop.

Coverage Levels and Price Election Terms

Additional coverage. Crop insurance coverage equal to or greater than 65 percent of the approved yield indemnified at 100 percent of the expected market price, or a comparable coverage as established by the Federal Crop Insurance Corporation (FCIC).

Administrative fee. An amount you must pay for catastrophic risk protection, limited, and additional coverage for each crop year as specified in the Federal Register and the Catastrophic Risk Protection Endorsement. (\$100 per crop policy per country).

Coverage. The insurance provided by a policy against loss of production or value, by unit, as shown on your summary of coverage.

Deductible. The amount of loss incurred before insurance coverage begins, determined by subtracting the coverage level percentage you choose from 100 percent. For example, if you elected a 65 percent coverage level, your deductible would be 35 percent (100% -65% = 35%).

Economic significance. The value of a crop, or of a type or variety of a crop (if the applicable crop policy allows the producer the option to separately insure individual crop types or varieties), equal to 10 percent or more of the total value of your share of all crops grown in the county the previous crop year, or that you expect to grow in the current crop year. However, an amount is not considered economically significant if the expected liability under the Catastrophic Risk Protection Endorsement is equal to or less than the administrative fee required for the crop or the crop type or variety.

Price election. The prices contained in the Special Provisions or an addendum. They are used to compute the value per pound, bushel, ton, carton, or other unit of measure so that premium and indemnity can be determined.

Production guarantee (per acre). The number of pounds, bushels, tons, cartons, or other unit of measure determined by multiplying the approved yield per acre by the coverage level percentage you elect.

Special Provisions. The part of the policy that contains specific provisions of insurance that may vary by geographic location.

Farm terms used in crop insurance policies

Abandon. Failure to care for the crop, providing too little care to benefit the crop, or failure to harvest in a timely manner, unless an insured cause of loss prevents the producer from properly caring for or harvesting the crop or causes damage to it to the extent that most producers of the crop on similar acreage in the area would not normally further care for or harvest it.

Agricultural commodity. All insurable crops produced for human or animal consumption. Grain and non-grain crops, vegetables, fruits, nuts, nursery plants, floriculture, Christmas trees, Maple tree sap, animals, products from animals such as milk, eggs, etc., and any other agricultural production, excluding timber, forest, and forest products.

Changes. Changes in ownership, business structure, size of operation, share, management practices, type of farming activity, accounting methods or any other practices that may alter average farm income and may affect your eligibility for a policy.

Crop year. The period within which the insured crop is normally grown and designated by the calendar year the insured crop is normally harvested.

Damage. Injury, deterioration, or loss of production of the insured crop.

Good farming practices. The cultural practices generally in use in the county for the crop. Practices required for the crop to produce at least the yield used to determine the production guarantee or amount of insurance. These practices are recognized by the Cooperative State Research, Education, and Extension Service as compatible with agronomic and weather conditions in the county.

Interplanted. Acreage on which two or more crops are planted in a manner that does not permit separate agronomic maintenance or harvest of the insured crop.

Irrigated practice. Watering a crop to produce at least the yield used to establish: 1) the irrigated production guarantee; 2) the amount of insurance on the irrigated production guarantee; or 3) the amount of insurance on the irrigated acreage planted to the insured crop.

Late planted. Acreage initially planted to the insured crop after the final planting date.

Negligence. The failure to use such care as a reasonably prudent and careful person would use under similar circumstances.

Perennial Crop. An agricultural commodity that is produced from the same root structure for two or more years.

Planted acreage. Land in which the insured crop has been properly planted.

Practical to replant. The insurance company's determination, after loss or damage to the insured crop, that replanting the crop will allow it to be harvested before the end of the insurance period. It will not be considered practical to replant after the end of the late planting period or the final planting date unless replanting is generally occurring in the area. Unavailability of seed or plants is not considered a valid reason for failure to replant.

Prevented planting. Failure to plant the insured crop by the final planting date designated in the Special Provisions for the insured crop in the county. You may also be eligible for a prevented planting payment if you were unable to plant because of an insured cause of loss that is general in the surrounding area.

Replanting. Replacing the seed or plants of the same crop in the insured acreage with the expectation of producing at least the yield used to determine the production guarantee.

Representative sample. Portion of the insured crop that must remain in the field for examination by the insurance company's loss adjuster when making a crop appraisal. In certain instances the producer may harvest the crop and leave only samples of the crop residue in the field.

Timely planted. Planted on or before the final planting date designated in the Special Provisions for the insured crop in the county.

Reports and information used to underwrite a policy

Acreage report. A report stating the producer's share of all acreage of an insured crop in the county, whether insurable or not insurable.

Another use, notice of. The written notice required when you wish to plant acreage to another crop.

Application. The form you must complete and that the insurance company must accept before coverage will begin. If the insurance coverage is canceled or terminated for any reason, the producer must reapply.

Claim for indemnity. Producer's assertion for damage or loss to an insured crop.

Consent. Approval in writing by the insurance company for the insured to take a specific action.

Damage, notice of. A written notice the producer must file with the insurance company as soon as it is discovered the insured crop has been damaged to the extent that a loss is probable.

Loss, notice of. The producer must give notice to the insurance company not later than 72 hours after certain losses or 15 days after the end of the insurance period, whichever is earlier.

Production report. A written record showing the producer's annual production. The insurance company uses it to determine your yield for insurance purposes. The report contains yield information for previous years, including planted acreage and harvested production. This report must be supported by written, verifiable records from a warehouseman or buyer of the insured crop, by measurement of farm-stored production, or by other records of production approved by the insurance company.

Underwriting Review. A review of the applicant/insured's underwriting information by a person designated by the insurance provider (verifier or underwriter) to evaluate the grower's request for insurance.

Parties to the crop insurance policy

Assignment of indemnity. An arrangement whereby the producer assigns your right to an indemnity payment to any party of your choice for the crop year.

Contract. The contractual agreement between the insured and the insurance provider.

Person. An individual, partnership, association, corporation, estate, trust, or other legal entity, and wherever applicable, a state or a political subdivision or agency of a state. "Person" does not include the United States government or any agency thereof.

Insurance Provider. A company reinsured by FCIC that provides crop insurance coverage to producers participating in any Federal crop insurance program administered under the Federal Crop Insurance Reform Act of 1994.

Insured. The person whose name is on the application accepted by the insurance company. This term does not extend to any other person having a share or interest in the crop (for example, a partnership, landlord, or any other person) unless specifically indicated on the accepted application.

Limited resource farmer. A producer or operator of a farm:

- 1) With an annual gross income of \$20,000 or less derived from all sources, including income from a spouse or other members of the household, for each of the prior 2 years; or
- 2) With less than 25 acres total for all crops, who makes a majority of his gross income from farming, and whose gross income from farming is not more than \$20,000.

Share. The producer's percentage of interest in the insured crop as an owner, operator or tenant. However, only for the purpose of determining the amount of indemnity, the producer's share will not be more than it was at the earlier of the time of loss or the beginning of harvest.

Tenant. A person who rents land from another person for a share of the crop or a share of the proceeds of the crop.

Substantial beneficial interest. An interest of at least 10 percent in the insured crop.

Dates and definitions

Acreage reporting date. The date by which the insured is required to submit an acreage report.

Cancellation date. The date specified in the Crop Provisions on which coverage for the crop will automatically renew unless canceled.

Contract change date. The date by which the insurance company makes any policy changes available for inspection in the agent's office.

Coverage begins, date. The date insurance begins on the insured crop, or the date planting begins on the unit.

Days. Calendar days.

Delinquent account. Any account in which premiums and interest on those premiums is not paid by the termination date specified in the Crop Provisions.

Earliest planting date. The earliest date established for planting the insured crop.

End of insurance period, date of. The date upon which your crop insurance coverage ceases for the crop year.

Final planting date. The date in the Special Provisions by which the crop must initially be planted in order to be insured for the full production guarantee or amount of insurance per acre.

Fiscal Year. Twelve consecutive months ending on the last day of any month except December. A producer using a fiscal tax year is not eligible to participate in the AGR pilot program.

Insurance Year/Insurance Period. The period beginning January 1 and extending through December 31 of the same year and corresponds to the period of coverage under the AGR policy.

Lag Year. The tax year immediately prior to the insurance year. Tax documents for the lag year will generally not have been filed with the IRS by the sales closing date.

Late planting period. The period that begins the day after the final planting date for the insured crop and ends 25 days later, unless otherwise specified in the Crop Provisions or Special Provisions.

Premium billing date. The earliest date upon which you will be billed for insurance coverage based on your acreage report. The premium billing date is in the Special Provisions.

Sales closing date. A date in the Special Provisions by which an application must be filed. The last date you may change your crop insurance coverage for a crop year.

Termination date. The date in the Crop Provisions upon which your insurance ceases to be in effect because of nonpayment of any amount due the insurance company.

Crop Insurance resources for further study

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/
- Why Buy Crop Insurance: http://aem.cornell.edu/special_programs/hortmgt/risk/newsletters/Why_buy_crop_insurance.pdf

Crop Insurance Products:

- Crop Insurance Plans: <http://www.rma.usda.gov/pubs/2000/2000rcip.pdf>
- Multiple Peril Crop Insurance: 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:

- Crop Insurance Plan Worksheet: <http://www.aec.msu.edu/agecon/blackj/Planning.xls>
- AgRisk: <http://aede.osu.edu/Programs/AgRisk/>
- Premium Calculator: http://www3.rma.usda.gov/apps/premcalc/calc_login.cfm
- Revenue Calculator: http://www.agmkts.com/revenuecalculator/revenue_calculator_v2.asp

University Risk Management Websites:

- Michigan State University: <http://www.aec.msu.edu/agecon/blackj/NERRisk.html>
- Cornell University: Coming Soon - <http://www.AgRisk.cornell.edu>
 - Horticulture: http://aem.cornell.edu/special_programs/hortmgt/risk/
- University of Wisconsin: <http://cdp.wisc.edu/>
- Kansas State University: <http://www.agecon.ksu.edu/risk/>
- University of Illinois: <http://www.farmdoc.uiuc.edu/cropins/index.html>
- Iowa State: <http://www.extension.iastate.edu/pubs/cr.htm>
- Ohio State University: <http://aede.osu.edu/Programs/AgRisk/>
- Texas A&M University: <http://trmep.tamu.edu/farm.htm>

Ask an Expert:

- @griculture Online: <http://www.agriculture.com/aginsure/askexpert/artbio.html>

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