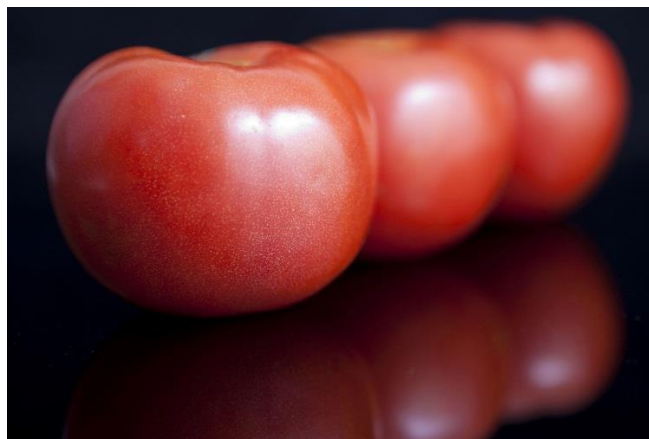




**Strengthening Risk Management Tools  
for Growers in South Florida:  
Crop Insurance Training.**

**Florida Fresh Market Tomato  
Crop Insurance Handbook**



**United States Department of Agriculture  
National Institute of Food and Agriculture**

## **Acknowledgements**

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## Introduction

This manual, developed by the Agricultural Economics Unit of the University of Florida, Tropical Research and Education Center, is intended to provide general guidelines about crop insurance for fresh tomato growers in South Florida. Specifically, the manual is aimed at simplifying the process, and increasing the understanding of growers, of how production risk might be mitigated by taking advantage of available federal crop insurance programs.

The manual is divided into three sections. Section 1 provides basic information about insurance eligibility and basic crop insurance concepts. Section 2 covers aspects related to how to obtain a crop insurance estimate using the United States Department of Agriculture, Risk Management Agency (USDA/RMA) online estimator. Section 3 provides some exercises on how to calculate an indemnity using an Excel tool to simplify the indemnity calculation process. Additionally, the Excel tool will allow the grower to compare the financial results with and without crop insurance, based on simulated losses and coverage levels selected by the grower. By using this tool, the grower may be in a better position to make an informed decision on how to minimize production risk.

We cannot guarantee the legal effect nor the appropriate use of the contents as individual results depend upon specific crop insurance policy details. Most of the information presented here was obtained from USDA/RMA and other industry sources.

***Note: Growers should consult with their crop insurance agents for a detailed crop insurance quote, and for more specific information about dates, specific conditions, and exclusions.***

## I. The Basics of Crop Insurance

### Background

Federal crop insurance was established in the 1930s, with multiple-peril crop insurance (MPCI) being the first crop insurance plan designed to cover yield losses from most natural causes. MPCI is better known as yield insurance or APH (Actual Production History) insurance. As is the case in other types of insurance, producers are able to select the coverage amount and structure of their crop insurance policy according to their needs. Loss payments (indemnities) are received when actual production (revenue) is below the yield (revenue) guaranteed as stated in the insurance policy. The federal government is directly involved with determining crop insurance policy provisions and rates.

### ***What Types of Losses Are Covered under Crop Insurance?***

- Adverse weather;
- Earthquake;
- Volcanic eruption;
- Fire (due to natural causes);
- Wildlife;
- Insects, but not damage due to insufficient or improper application of pest control measures;
- Plant disease, but not damage due to insufficient or improper application of disease control measures; or
- Failure of the irrigation water supply if due to unavoidable causes.

### ***Why Purchase Crop Insurance?***

Uncertainties about weather, yields, prices, government policies, global markets, and other factors make agriculture a risky business. Crop insurance is a risk management tool designed to mitigate the financial impact of adverse events; it may be the difference between financially surviving a bad year and leaving the industry.

### **Fresh Market Tomato Insurance Eligibility**

All field-grown, mature, green, or ripe, fresh-market tomatoes in the county are insurable if

- The actuarial documents provide premium rates;
- Planted to be harvested and sold as fresh market tomatoes ;
- Planted within the planting periods designated in the actuarial documents;
- Grown on acreage covered by plastic mulch;
- Irrigated;
- Not planted with an established grass or legume;
- Not inter-planted with another crop;
- Not direct-seeded unless allowed by written agreement;
- Not grown for direct marketing; and
- You have a share in the crop.

You must have grown tomatoes for commercial sale, or have participated in the management of a fresh market tomato farming operation, in at least 1 of the previous 3 crop years. See policy provisions for more detailed information.

### ***Florida Counties Eligible for Fresh Tomato Insurance Coverage***

This insurance program is available in Broward, Charlotte, Collier, De Soto, Glades, Hardee, Hendry, Hillsborough, Lee, Manatee, Martin, Miami-Dade, Palm Beach, Polk, Sarasota, and St. Lucie Counties.

### ***Covered Hazards in Tomato Crop Loss***

You are protected against the following hazards:

- Fire;
- Hail;
- Freeze;
- Tornadoes;
- Excess rain;
- Tropical Depressions/Hurricanes; or
- Failure of irrigation water supply if caused by an insured cause of loss during insurance period.

### ***Insurance Coverage Period***

Coverage begins when crop is planted and ends with the earliest event of one of the following:

- Total destruction of the tomato crop;
- Abandonment of the tomato crop;
- Date tomatoes should have been harvested but were not harvested ;
- Final harvest;
- Final adjustment of a loss; or
- 125 days after the date of transplanting or replanting with transplants.

## **Fresh Market Tomato Insurance Definitions**

### ***Allowable cost***

The dollar amount per carton for harvesting, packing, and handling as stated in the Special Provisions.

### ***Carton***

A unit of measure equal to 25 pounds of the insured crop.

### ***Minimum Value***

The dollar amount, per carton, used to value appraised and unsold harvested production. This value is posted on the prices tab of the actuarial documents online tool (shown below).

### ***Minimum Value Option Endorsement***

The dollar amount, per carton used to establish a floor sales price to be used to value harvested and sold production. This is a policy endorsement that offers additional protection; therefore, it carries a higher premium.

### ***Reference Maximum Dollar Amount***

The dollar amount that is used in calculating the dollar coverage amount, per acre, for the insurance guarantee. This value is posted on the prices tab of the actuarial documents online tool (shown below).

### ***Important Dates (crop year example)***

- Sales Closing/Cancellation: July 31
- Final Planting: Dates differ by county
- Acreage Reporting: Dates differ by county
- Premium Billing: May 1
- Contract Change Date: April 30
- Termination: July 31

## **Replant Payment**

You may receive a replant payment if, due to an insured cause of loss, more than 50 percent of the plant stand will not produce tomatoes and it is still practical to replant. *Talk to your crop insurance agent for more information.*

To access the latest information on dates, and reference prices you may want to go to the actuarial information browser at <http://webapp.rma.usda.gov/apps/actuarialinformationbrowser/>

Click on AIB Reinsurance Year 2017 to get the information for that particular crop year. Then select from the drop down menu as follows:

- Commodity: Fresh Market Tomatoes (0086)
- Commodity Year: 2017
- Insurance Plan: Dollar Amount of Insurance (50)
- State: Florida (12)
- County: Miami-Dade (086)

After selections have been made, click on *View Report*; you will see a screen like this:

The screenshot shows the USDA Risk Management Agency's AIB 2017 Commodity Report interface. The page is titled "Commodity Report" and includes search filters for Commodity, Year, Insurance Plan, State, and County. A table displays various commodity types and their associated dates. The "Dates" tab is selected, showing a table of dates for different commodity types.

	Cherry 048	Cherry 048	Cherry 048	Plum 094	Plum 094	Fi
<b>Commodity Type</b>	Cherry 048	Cherry 048	Cherry 048	Plum 094	Plum 094	
<b>Class</b>	Field Grown 007	Field Grown 007	Field Grown 007	Field Grown 007	Field Grown 007	Fi
<b>Sub Class</b>	No Subclass Specified 997	No Subclass Specified 997	No Subclass Specified 997	No Subclass Specified 997	No Subclass Specified 997	No S
<b>Intended Use</b>	Fresh 101	Fresh 101	Fresh 101	Fresh 101	Fresh 101	
<b>Irrigation Practice</b>	Irrigated 002	Irrigated 002	Irrigated 002	Irrigated 002	Irrigated 002	
<b>Cropping Practice</b>	Winter Transplanted Staked 055	Spring Transplanted Staked 050	Fall Transplanted Staked 035	Winter Transplanted Staked 055	Spring Transplanted Staked 050	Fall Tr
<b>Organic Practice</b>	No Organic Practice Specified 997	No Organic Practice Specified 997	No Organic Practice Specified 997	No Organic Practice Specified 997	No Organic Practice Specified 997	No
<b>Interval</b>	No Interval Specified 997	No Interval Specified 997	No Interval Specified 997	No Interval Specified 997	No Interval Specified 997	No Int
<b>Base County Dates</b>						
Sales Closing Date	07/31/2016	07/31/2016	07/31/2016	07/31/2016	07/31/2016	
Cancellation Date	07/31/2016	07/31/2016	07/31/2016	07/31/2016	07/31/2016	
Earliest Planting Date	10/16/2016	12/16/2016	08/10/2016	10/16/2016	12/16/2016	
Final Planting Date	12/15/2016	01/31/2017	10/15/2016	12/15/2016	01/31/2017	
Acreage Reporting Date	12/15/2016	02/15/2017	10/15/2016	12/15/2016	02/15/2017	

To get the relevant info for the crop year, you just need to click on the respective tab. On the screen above, the dates tab has been selected; it shows several deadlines, including planting and acreage reporting.

## Basic Crop Insurance Concepts

### *Crop Insurance Coverage*

Catastrophic Risk Protection (CAT) is the most basic insurance policy; it is a fixed coverage product. It provides a 50 percent coverage level, and 55 percent of the reference maximum dollar amount. CAT is 100 percent subsidized with no premium paid by the grower. There is an administrative fee of \$300 per crop per county, which the grower must pay to be eligible, regardless of the acreage.

Any coverage above CAT is considered buy-up coverage. It ranges from 50 to 75 percent (80 and 85 percent in some crop insurance policies) in 5 percent increments. For fresh market tomatoes, the Dollar Plan insurance coverage ranges from 50 to 75 percent of the reference maximum dollar amount, in 5 percent increments.

### *Insurance Premium*

The premium is the cost paid by the grower for crop insurance protection, premiums are set by the USDA. Premium amount depends on the desired coverage level (usually from 50 to 75 percent), and price election percentages (fixed in some policies). To encourage crop insurance adoption, a percentage of the premium is subsidized by the federal government. For the crop year 2017, the insurance premium is due on May 1<sup>st</sup>, or when an indemnity payment is received, whichever comes first.

Table 1 shows premium subsidy and producer's share based on specific coverage levels. Producer's premium share increases when a higher coverage level is selected, while premium subsidies decrease with a higher coverage level. For example, if you select the 75-percent coverage level, your premium share will be 45 percent of the base premium.

**Table 1.** Crop insurance premium subsidies and producer premiums based on coverage level

Item	Coverage Level					
	50	55	60	65	70	75
Premium Subsidy	67	64	64	59	59	55
Your Premium Share	33	36	36	41	41	45

### ***Insurance Deductible***

It is the loss limit that you as a crop insurance policy holder must absorb before benefits from the insurance policy are paid; in other words, the insurer generally pays all the losses beyond the deductible. Crop insurance deductibles range from 25 to 50 percent, in 5 percent increments (15 and 20 percent deductibles are available in some insurance products).

### ***Insurance Unit***

The type of unit to be insured also determines crop insurance premiums. There are four unit types available for crop insurance policies: basic, optional, enterprise, and whole-farm.

- *Basic unit:* this type of unit is determined by ownership of the commodity, cash rents, and owned land, is considered one basic unit.
- *Optional unit:* this type of unit is subdivided basic units (irrigated/non irrigated, by section), it allows insurance to be customized according to risk management needs. Insurance premiums for optional units carry a surcharge, and are available only for coverage levels above CAT.
- *Enterprise unit:* this type of unit includes all shares of the crop in the county which aggregates sharecropped land with owned and rented land.
- *Whole-farm unit:* this type of unit is available only on certain revenue insurance policies; it allows aggregation of all eligible insured crops grown in the county.

### ***Insurance Guarantee***

A guarantee is a dollar insurance amount, per acre, that is determined by multiplying the reference maximum dollar amount by the coverage level you choose. For example, the reference maximum dollar amount is \$9,475 for the crop year, and if you elect a 75 percent coverage level, then the insurance guarantee is \$7,106. The percent of the insurance guarantee that is in force for fresh market tomatoes depends on the plant growth stage (Table 2). Insurance guarantees vary according to the crop stage. Table 2 shows that the percentage of insurance guarantee increases gradually from 50 percent at Stage 1 to 100 percent in the Final Stage when harvest begins.



**Table 2.** Percentage of insurance guarantee based on growth stage

Stage	Percent of Insurance Guarantee	Length of Time
1	50	From planting through 29 days after planting
2	75	From 30 days after planting until the beginning of stage 3
3	90	From 60 days after planting until the beginning of the final stage
Final	100	Begins the earlier of 75 days after planting or beginning of harvest

### ***Insurance Indemnity***

Indemnity is the payment made by a crop insurer (insurance company) to the insured (grower) when an insured grower experiences a loss. Technically, a loss occurs when the actual yield (revenue) is below the yield (revenue) guarantee as stated in the crop insurance policy. After experiencing a loss, usually the grower receives a net indemnity (the calculated value of the indemnity minus grower's insurance premium).

### ***Where to Purchase Crop Insurance***

All multi-peril crop insurance, including CAT policies, are available from private crop insurance agents. A list of crop insurance agents is available at all USDA service centers and on the RMA website at [www.rma.usda.gov/tools/agent.html](http://www.rma.usda.gov/tools/agent.html).

## **II. Crop Insurance Premium Estimator**

A grower interested in getting a crop insurance quote for his operation may want to visit the USDA/RMA website and use the site's online insurance premium estimator for that purpose. ***Please keep in mind that your actual premium may depend upon your specific conditions and exclusions; refer to your crop insurance agent for more details.***

Below are two exercises showing how to obtain an online crop insurance premium quote for crop year 2017 at the USDA/RMA website. In the first scenario, it is assumed that during the fall, the grower produces non-organic, traditional round tomatoes on a crop area of 10 acres in full production, and has 100 percent interest in the crop. The grower wants to know his crop insurance premium cost at different coverage levels.

**Step 1:** Open the cost estimator at <https://ewebapp.rma.usda.gov/apps/costestimator/Default.aspx>

***After loading the web page, please disable your pop-up blocker (see website message example below)***

The screenshot shows the top navigation bar with the breadcrumb "You are: Home > Information Browser > Cost Estimator > Main Menu" and a "Log In" button. Below the navigation, there are two main sections: "Popular Topics" with links to "Appendix III/M-13", "Bulletins and Handbooks", and "Crop Policies and Pilots"; and "Main Menu" with a highlighted "Pop-Up Blockers" section. The "Pop-Up Blockers" section contains a message: "Please disable your pop-up blocker before using this application or add this application to your list of safe sites."

After the pop-up blocker has been disabled, click on the *Quick Estimate* link. Then choose the *Quick Criteria* box, and select the following options using the drop-down menu:

- Commodity: Fresh Market Tomatoes 0086
- Commodity Year: 2017
- State: Florida 12
- County: Miami-Dade 086
- Commodity Type: Traditional Round 219
- Class: Field Grown 007
- Subclass: No Subclass Specified 997
- Cropping Practice: Fall Transplanted Staked 035
- Irrigation Practice: Irrigated 002
- Organic Practice: No Organic Practice Specified 997
- Intended Use: Fresh 101
- Interval: No Interval Specified 997

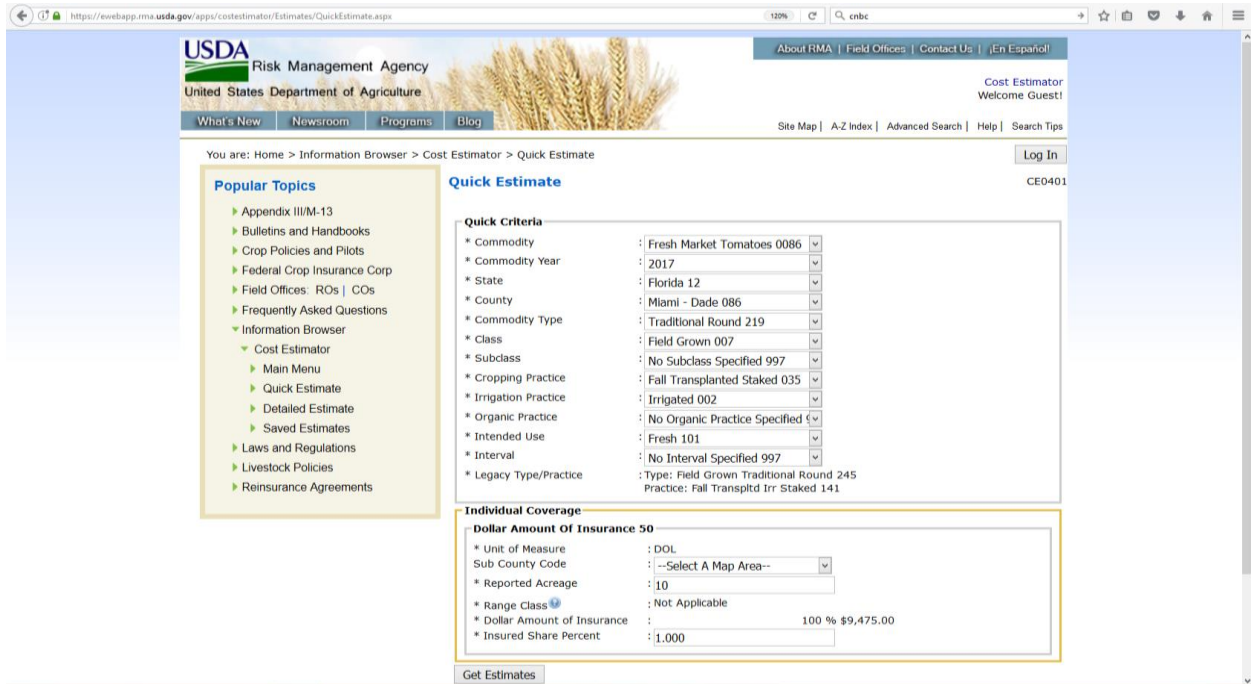
The screenshot shows the USDA Risk Management Agency Cost Estimator Quick Estimate page. The page is titled "Quick Estimate" and includes a "Log In" button. The "Quick Criteria" section is expanded, showing a list of dropdown menus with the following selections:

Criteria	Selected Value
* Commodity	Fresh Market Tomatoes 0086
* Commodity Year	2017
* State	Florida 12
* County	Miami - Dade 086
* Commodity Type	Traditional Round 219
* Class	Field Grown 007
* Subclass	No Subclass Specified 997
* Cropping Practice	Fall Transplanted Staked 035
* Irrigation Practice	Irrigated 002
* Organic Practice	No Organic Practice Specified
* Intended Use	Fresh 101
* Interval	No Interval Specified 997
* Legacy Type/Practice	Type: Field Grown Traditional Round 245 Practice: Fall Transplntd Irr Staked 141

**Step 2:** Farther down the screen, choose the *Individual Coverage* box and select:

- Reported Acreage: 10
- Insured Share Percent: 1.000

The screen with the selected parameters will look like this:



Click on the *Get Estimates* link (at bottom of screen above)

**Step 3:** Find the *Individual Coverage* box, and click on *Detailed Estimate*

Liability Amount												
Individual Coverage	PE %	75 %	70 %	65 %	60 %	55 %	50 %	View				
Dollar Amount Of Insurance 50	100 %	\$71,060.00	\$66,330.00	\$61,590.00	\$56,850.00	\$52,110.00	\$47,380.00	Worksheets	<b>Detailed Estimate</b>	CEPP	SPOI	AIB

[Recalculate](#)

The Cost Estimator only provides a general premium estimate. Refer to your crop insurance agent and policy for specific information regarding insurance coverage, actuarial information, conditions and exclusions.

You will now see the following screen:

* Does Conservation Compliance (CC) apply?	<input type="radio"/> No <input type="radio"/> Yes									
* Range Class	Not Applicable									
* Dollar Amount of Insurance	100 % \$9,475.00									
* Insured Share Percent	1.000									
* Unit Structure	<input checked="" type="radio"/> Basic <input type="radio"/> Optional									
* Basic Unit Number	1									
* Optional Unit Number	1									
Options By Unit	None Available									
Options By Commodity	HF Hail & Fire Exclusion 0.950 VO Minimum Value Option 1.450									

[Get Estimates](#)

**Step 4:** Find *Unit Structure*, and select *Basic*. Now click on *Get Estimates* (at bottom of screen above).

On the next screen, click on *Producer Premium Amount*, you will see the following information:

Show Results In Grid

Liability Amount
  Total Premium Amount
  **Producer Premium Amount**
 Subsidy Amount
  Loss Trigger Point

**Producer Premium Amount**

Fresh Market Tomatoes 0086	PE %	75 %	70 %	65 %	60 %	55 %	50 %	CAT 50 %	View				
Item 1	100 %	\$2,412.00	\$1,773.00	\$1,432.00	\$1,033.00	\$851.00	\$647.00	-	Worksheets	CEPP	SPOI	AIB	
	55 %	-	-	-	-	-	-	\$0.00					

The Cost Estimator only provides a general premium estimate. Refer to your crop insurance agent and policy for specific information regarding insurance coverage, actuarial information, conditions and exclusions.

The reference *Maximum Dollar Amount* to estimate the insurance guarantee and premiums for this insurance policy (price election fixed at 100 percent) is \$9,475 (value set by USDA/RMA). If the grower selects 75 percent coverage level, insurance guarantee is \$71,060 ( $\$9,475 \times 0.75 \times 10$  acres) and associated premium is \$2,412 (\$241/acre). Note: producer premiums decrease with reduced coverage levels. If the grower selects 50 percent coverage (\$47,380 insurance guarantee), the premium is \$647 (\$64.7/acre). If the grower selects CAT insurance (50/55) with a \$26,060 insurance guarantee ( $\$9,475 \times 0.50 \times 0.55 \times 10$  acres), there is no producer premium; grower pays a \$300 administrative fee independent of the acreage.

Table 3 illustrates insurance guarantee, total premium, producer premium, premium subsidy, and producer premium share based on the available coverage levels for the grower in our exercise. A higher coverage level results in both a higher insurance guarantee and a higher total premium. While higher protection (insurance guarantee) means a higher premium for the grower, an insurance premium reduction from the subsidies would be considerable if the grower were to pay the full cost.

**Table 3.** Crop insurance cost, and subsidies to insure a 10-acre fresh market tomato farm with different coverage levels

Crop Year	Coverage Level						
	75%	70%	65%	60%	55%	50%	CAT 50%
Insurance Guarantee	\$71,060	\$66,330	\$61,590	\$56,850	\$52,110	\$47,380	\$26,060
Total Premium	\$ 5,359	\$4,325	\$3,492	\$2,869	\$2,364	\$1,961	\$547
Producer Premium	\$2,412	\$1,773	\$1,432	\$1,033	\$851	\$647	0
Subsidy	\$2,947	\$2,552	\$2,060	\$1,836	\$1,513	\$1,314	\$547
Producer's Premium Share	45%	41%	41%	36%	36%	33%	—

What happens if the grower purchases a Minimum Value Option endorsement?

To explore this option, go back to Step 3 and find *Options by Commodity*. Select *VO Minimum Value Option 1.450*, and the click on *Get Estimates*.

Are acres under multiple cropping?	<input checked="" type="radio"/> No <input type="radio"/> Yes			
Qualify for Beginning Farmer Rancher?	<input checked="" type="radio"/> No <input type="radio"/> Yes			
* Does Conservation Compliance (CC) apply?	<input checked="" type="radio"/> No <input type="radio"/> Yes			
* Range Class	Not Applicable			
* Dollar Amount of Insurance	100 % \$9,475.00			
* Insured Share Percent	1.000			
* Unit Structure	<input checked="" type="radio"/> Basic <input type="radio"/> Optional			
* Basic Unit Number	1			
* Optional Unit Number	1			
Options By Unit	None Available			
Options By Commodity	<input type="radio"/> None Available <input checked="" type="radio"/> <b>VO Minimum Value Option 1.450</b>			

Get Estimates

The Cost Estimator only provides a general premium estimate. Refer to your crop insurance agent and policy for specific information regarding insurance coverage, actuarial information, conditions and exclusions.

On the next screen, click on *Producer Premium Amount* to obtain the following information:

USDA United States Department of Agriculture Risk Management Agency Cost Estimator Welcome Guest!

**Detailed Estimate 465717**

Selected Initial Criteria  
 \* Commodity Year : 2017 \* Insurance Plan : Dollar Amount Of Insurance 50 \* State : Florida 12  
 \* County : Miami - Dade 086

Show Inputs In Grid  
 << Show Available Inputs >>

Show Results In Grid  
 Liability Amount  Total Premium Amount  **Producer Premium Amount**  Subsidy Amount  Loss Trigger Point

Fresh Market Tomatoes 0086	PE %	75 %	70 %	65 %	60 %	55 %	50 %	View
Item 1	100 %	\$3,496.00	\$2,571.00	\$2,076.00	\$1,498.00	\$1,234.00	\$939.00	Worksheets

The Cost Estimator only provides a general premium estimate. Refer to your crop insurance agent and policy for specific information regarding insurance coverage, actuarial information, conditions and exclusions.

The grower in our exercise will pay a premium of \$3,496 (\$1,084 extra) to purchase additional protection of the Minimum Value option. Note: This extra level of protection is unavailable with CAT insurance.

Now let us look at the second exercise. In this scenario, it is assumed the grower owns 10 acres of non-organic, spring (transplanted staked), cherry tomatoes grown on a basic unit located in Broward County and has 100 percent interest in the farm (i.e., not sharecropping). Using the USDA/RMA cost estimator website, we explore two different levels of insurance coverage. What would be the producer insurance premium for crop year 2017, assuming a coverage of 70 percent? What would be the producer insurance premium based on the Minimum Value Option, assuming a coverage of 75 percent?

The input for the *Quick Estimate* box will look like this

You are: Home > Information Browser > Cost Estimator > Quick Estimate Log In CE0401

**Popular Topics**

- Appendix III/M-13
- Bulletins and Handbooks
- Crop Policies and Pilots
- Federal Crop Insurance Corp
- Field Offices: ROs | COs
- Frequently Asked Questions
- Information Browser
  - Cost Estimator
    - Main Menu
    - Quick Estimate
    - Detailed Estimate
    - Saved Estimates
  - Laws and Regulations
  - Livestock Policies
  - Reinsurance Agreements

**Quick Estimate**

**Quick Criteria**

- \* Commodity : Fresh Market Tomatoes 0086
- \* Commodity Year : 2017
- \* State : Florida 12
- \* County : Broward 011
- \* Commodity Type : Cherry 048
- \* Class : Field Grown 007
- \* Subclass : No Subclass Specified 997
- \* Cropping Practice : Spring Transplanted Staked 05
- \* Irrigation Practice : Irrigated 002
- \* Organic Practice : No Organic Practice Specified
- \* Intended Use : Fresh 101
- \* Interval : No Interval Specified 997
- \* Legacy Type/Practice : Type: Field Grown Cherry 246 Practice: Spr. Transpltd Irr Staked 341

**Individual Coverage**

**Dollar Amount Of Insurance 50**

- \* Unit of Measure : DOL
- Sub County Code : --Select A Map Area--
- \* Reported Acreage : 10
- \* Range Class : Not Applicable
- \* Dollar Amount of Insurance : 100 % \$9,475.00
- \* Insured Share Percent : 1.000

Get Estimates

For a 70 percent coverage level, the premium is **\$2,167** (see information below)

Show Results In Grid  
 Liability Amount  Total Premium Amount  **Producer Premium Amount**  Subsidy Amount  Loss Trigger Point

Fresh Market Tomatoes 0086	PE %	75 %	70 %	65 %	60 %	55 %	50 %	CAT 50 %	View
Item 1	100 %	\$2,947.00	\$2,167.00	\$1,750.00	\$1,262.00	\$1,040.00	\$791.00	-	Worksheets
	55 %	-	-	-	-	-	-	\$0.00	

The Cost Estimator only provides a general premium estimate. Refer to your crop insurance agent and policy for specific information regarding insurance coverage, actuarial information, conditions and exclusions.

Choosing the Minimum Value Option endorsement at the 75 percent coverage level, the premium is **\$4,274** (see information below)

Show Results In Grid

Liability Amount
  Total Premium Amount
  **Producer Premium Amount**
 Subsidy Amount
  Loss Trigger Point

Producer Premium Amount

Fresh Market Tomatoes 0086	PE %	75 %	70 %	65 %	60 %	55 %	50 %	View
Item 1	100 %	\$4,274.00	\$3,143.00	\$2,537.00	\$1,830.00	\$1,508.00	\$1,147.00	Worksheets

CEPP SPOI AIB

The Cost Estimator only provides a general premium estimate. Refer to your crop insurance agent and policy for specific information regarding insurance coverage, actuarial information, conditions and exclusions.

### III. Estimating Indemnity Payments

#### Calculating Indemnities

For the purpose of illustrating how an indemnity payment is estimated, we continue with our exercises. We examine a scenario where the grower is located in Miami-Dade County; produces non-organic, traditional round tomatoes during the fall season; and has a 100 percent interest in the unit. Anticipating bad weather for the crop season, the grower purchases crop insurance at the 75 percent coverage level to manage production risk. In this scenario, the grower's premium cost is \$2,412.

What would happen if the grower suffers crop losses during the final growth stage due to bad weather? What is the indemnity payment from the insurer if the grower sells 5,000 cartons (500 cartons per acre) at \$10 per carton, and has an additional unsold harvested production of 1,000 cartons (100 cartons per acre).

Based on the actuarial information for the crop year 2017:

- Allowable cost (of production) price: \$3.35 per carton
- Minimum value price (to value unsold production): \$6.15 per carton

**Step (1):** Determine insurance guarantee

\$9,475 Reference Maximum Dollar Amount  
 $\$9,475 * 0.75$  Coverage level = \$7,106

**Step (2):** Determine the value of the sold production

Cartons sold \* (Selling price – allowable cost)  
*If (Selling price – allowable cost) < minimum value price, use minimum value price*  
 $500 \text{ cartons} * (\$10/\text{carton} - \$3.35/\text{carton}) = \$3,325$

**Step (3):** Determine the value of the unsold production

$100 \text{ cartons of unsold harvested production} * \$6.15 \text{ Minimum value per carton}$   
 $100 * \$6.15 = \$615$

**Step (4):** Determine total value of production to count (PTC)

Add the results of Steps (2) and (3)  
 $\$3,325 + \$615 = \$3,940$

**Step (5): Determine indemnity per acre**

Subtract the total value of PTC from the amount of insurance in Step (1)  
 $\$7,106 - \$3,940 = \$3,166$  indemnity per acre

**Step (6): Determine net indemnity**

$(\$3,166/\text{acre} * 10 \text{ acres} * 100 \text{ percent interest on the crop}) - \text{Insurance premium}$   
 $\$31,660 - \$2,412 = \$29,247$  Net indemnity

The grower in the exercise receives a net indemnity payment of \$29,247. This highlights the fact that as long as the total value of production to count is lower than the insurance guarantee, the grower is eligible for an indemnity payment.

**Using a Tomato Crop Insurance Excel Case Study**

If you decide to purchase fresh market tomato crop insurance, you do not have to go through the calculations shown above each time you want to examine potential losses covered by crop insurance. Rather, you can use Excel file [tomatoes-ins.xlsx](http://agecon.centers.ufl.edu/cropins.html) (available online at <http://agecon.centers.ufl.edu/cropins.html>) to estimate indemnity payments.

What happens if we change the assumptions? Using a 65 percent coverage level (\$1,432 insurance premium), assume that during the final growth stage of the crop, the grower sells 4,000 cartons (400 cartons per acre) at a selling price of \$8.25 per carton. Due to bad weather, the grower suffers crop losses, and has an additional unsold harvested production of 200 cartons per acre (2,000 total). What is the indemnity payment from the insurer?

After you download and open the Excel file [tomatoes-ins.xlsx](http://agecon.centers.ufl.edu/cropins.html) file, go to the *Dollar Plan* spreadsheet. Table 4 illustrates the reference maximum dollar amount, allowable cost per carton, minimum value per carton, CAT amount of insurance, and CAT administrative fee that are pre-populated specific for crop year 2017 (blue cells). To estimate the indemnity payment (if any) based on a 65 percent coverage level (0.65), see input information shown in the seven green cells in Table 4.

**Table 4.** Dollar plan crop insurance indemnity estimator screen

Indemnity Estimator Fresh Market Tomatoes			
Reference Maximum Dollar Amount	\$ 9,475	Dollar Amount of Insurance per acre	\$ 6,159
Allowable Cost per Carton	\$ 3.35	Producer Premium per acre	\$ 143
Minimum Value per Carton	\$ 6.15	Value per Carton	6.15
CAT Amount of insurance	\$ 2,606		
CAT adm. Fee	\$ 300	Value of Sold Production	\$ 2,460
		Value of Unsold Production	\$ 1,230
Coverage Level	0.65	Penhooker salvage value	
Number of Acres	10		
Interest on the crop	100%	Value of Production to Count	\$ 3,690
Sale Price per Carton	\$ 8.25	Indemnity per Acre	\$ 2,469
Number of Cartons harvested per acre	600	Net Indemnity per acre	\$ 2,326
Number of Cartons Sold per acre	400	Total Net Indemnity	\$ 23,256
Number of Cartons Unsold per acre	200		

Once the coverage level has been selected, the dollar amount of insurance and producer premium will automatically appear in the last column (yellow cells). With a 65 percent coverage (0.65), the insurance guarantee is \$6,159 per acre, and the premium is \$143/acre. If we enter the number of acres to be insured (10), grower's share/interest on the crop (100%), the sale price per carton (\$8.25), number of cartons harvested per acre (600), and number of cartons sold per acre (400) in the respective (green) cells, the number of cartons unsold is calculated automatically (200). After the required values have been entered, the value of production to count, indemnity per acre, net indemnity per acre, and total net indemnity value is calculated automatically (yellow cells). With a lower coverage level and higher losses, the net indemnity is \$2,326 per acre (\$23,256 for 10 acres).

### Assessing the Financial Benefit of Crop Insurance

The grower in the exercise receives an indemnity payment, but this situation raises questions: (1) How did the catastrophic event affect the grower's revenue after being compensated by the losses incurred, and (2) What would be the situation had the grower not purchased crop insurance? Table 5 shows the projected revenue under no-insurance, Dollar Plan insurance, and CAT crop insurance.

Production to count value (PTC) is shown for a range from 100 to 1,800 cartons using the sales price of \$8.25 per carton for the sold cartons and the established minimum value of \$6.15 per carton for the unsold (marketable) cartons. The PTC value is needed to calculate indemnities for crop insurance based on the assumptions of 400 cartons sold at \$8.25/carton and 200 unsold cartons at \$6.15/carton.

If the grower selects CAT insurance, he is ineligible to receive an indemnity under CAT. To receive benefits from CAT, the total number of cartons sold should be 500 or less (i.e., the grower's revenue should be less than the CAT amount of insurance to receive benefits). Assuming that the grower produces only 500 cartons of fresh market tomatoes per acre, revenue is \$2,576 (\$2,450 revenue + \$126 CAT indemnity) under CAT and \$2,450 with no insurance at all.

**Table 5.** Projected revenue per acre with and without Dollar Plan and CAT crop insurance

Production to Count (PTC)				CAT			Dollar Plan		
Total	Cartons	Cartons	PTC	Net	Revenue		Net	Revenue	
Cartons	Sold	Unsold	Value	Indemnity	No Ins.	Insurance	Indemnity	No ins.	Insurance
1800	1800	0	\$ 11,070	\$ (30)	\$ 8,820	\$ 8,790	\$ (143)	\$ 8,820	\$ 10,927
1700	1700	0	\$ 10,455	\$ (30)	\$ 8,330	\$ 8,300	\$ (143)	\$ 8,330	\$ 10,312
1600	1600	0	\$ 9,840	\$ (30)	\$ 7,840	\$ 7,810	\$ (143)	\$ 7,840	\$ 9,697
1500	1500	0	\$ 9,225	\$ (30)	\$ 7,350	\$ 7,320	\$ (143)	\$ 7,350	\$ 9,082
1400	1400	0	\$ 8,610	\$ (30)	\$ 6,860	\$ 6,830	\$ (143)	\$ 6,860	\$ 8,467
1300	1300	0	\$ 7,995	\$ (30)	\$ 6,370	\$ 6,340	\$ (143)	\$ 6,370	\$ 7,852
1200	1200	0	\$ 7,380	\$ (30)	\$ 5,880	\$ 5,850	\$ (143)	\$ 5,880	\$ 7,237
1100	1100	0	\$ 6,765	\$ (30)	\$ 5,390	\$ 5,360	\$ (143)	\$ 5,390	\$ 6,622
1000	1000	0	\$ 6,150	\$ (30)	\$ 4,900	\$ 4,870	\$ (134)	\$ 4,900	\$ 6,016
900	900	0	\$ 5,535	\$ (30)	\$ 4,410	\$ 4,380	\$ 481	\$ 4,410	\$ 6,016
800	800	0	\$ 4,920	\$ (30)	\$ 3,920	\$ 3,890	\$ 1,096	\$ 3,920	\$ 6,016
700	700	0	\$ 4,305	\$ (30)	\$ 3,430	\$ 3,400	\$ 1,711	\$ 3,430	\$ 6,016
600	400	200	\$ 3,690	\$ (30)	\$ 2,940	\$ 2,910	\$ 2,326	\$ 2,940	\$ 6,016
500	500	0	\$ 3,075	\$ 126	\$ 2,450	\$ 2,576	\$ 2,941	\$ 2,450	\$ 6,016
400	400	0	\$ 2,460	\$ 616	\$ 1,960	\$ 2,576	\$ 3,556	\$ 1,960	\$ 6,016
300	300	0	\$ 1,845	\$ 1,106	\$ 1,470	\$ 2,576	\$ 4,171	\$ 1,470	\$ 6,016
200	200	0	\$ 1,230	\$ 1,596	\$ 980	\$ 2,576	\$ 4,786	\$ 980	\$ 6,016
100	100	0	\$ 615	\$ 2,086	\$ 490	\$ 2,576	\$ 5,401	\$ 490	\$ 6,016



If the grower selects the Dollar Plan insurance, there is a negative net indemnity value of \$143 for total cartons sold above 1,000, indicating that a premium is due and the crop insurance plan did not pay any indemnities. Based on 400 cartons sold at \$8.25/carton, and 200 unsold tomato cartons valued at \$6.15/carton, while the net indemnity is \$2,326 per acre, the revenue per acre in this particular situation is \$6,016 (\$3,690 PTC value + \$2,326 net indemnity) which falls short of \$143 (premium paid) to be equal to the dollar amount of insurance (\$6,159/acre). Although crop insurance covers any shortfall in the dollar amount of insurance selected after accounting for PTC values, it is important to remember that premiums are due at the end of the crop year or when an indemnity is paid, whichever comes first.

What if the grower selects not to purchase crop insurance? Without any insurance, revenue is \$2,940 per acre (600 cartons\*[\$8.25/carton - \$3.35 allowable cost]). This result in an additional loss of \$3,076 (\$6,016 – \$2,940) compared to the Dollar Plan.

### **Estimating Indemnity Payments with a Minimum Value Option**

A policy endorsement denominated the Minimum Value Option is available for additional protection. It protects growers from sharp price drops by establishing a price floor to value production to count for harvested and sold production. Benefits from additional protection comes with higher producer premiums.

We examine a scenario where a grower with 10 acres of non-organic, traditional round tomatoes purchases Dollar Plan insurance at 75 percent coverage. Later, during the final growth stage of the crop, the grower sells 5,000 cartons (500 cartons per acre) at \$6 per carton. Due to bad weather, the grower suffers crop losses, and has an additional unsold harvested production of 100 cartons per acre (1,000 total). What is the indemnity payment from the insurer?

Based on the actuarial information for crop year 2017:

- Allowable cost (of production) price: \$3.35 per carton
- Minimum value price (to value unsold production): \$6.15 per carton
- Minimum Value Option (VO): \$3.65 per carton

**Step (1):** Determine the unit amount of insurance

$$\begin{aligned} & \$9,475 \text{ Maximum Reference Value} \\ & \$9,475 * 0.75 \text{ Coverage level} = \$7,106.3 \end{aligned}$$

**Step (2):** Determine the value of sold production

$$\begin{aligned} & (\text{Selling price} - \text{allowable cost}) * \text{cartons sold} \\ & \text{If } (\text{Selling price} - \text{allowable cost}) < \text{VO, then use VO price} \\ & (\$6/\text{carton} - \$3.35/\text{carton}) = \$2.65 < \$3.65 \text{ VO, then use } \$3.65 \text{ the VO value} \\ & \$3.65/\text{carton} * 500 \text{ cartons} = \$1,825 \end{aligned}$$

**Step (3):** Determine the value of unsold production

$$100 \text{ cartons of unsold harvested production} * \$6.15 \text{ Minimum value per carton} = \$615$$

**Step (4):** Determine the total value of production to count (PTC)

$$\begin{aligned} & \text{Add the values of sold and unsold production (Steps (2) and (3))} \\ & \$1,825 + \$615 = \$2,440 \end{aligned}$$

**Step (5):** Determine indemnity per acre

Subtract the value of PTC from the amount of insurance in Step (1)

$$\$7,106.3 - \$2,440 = \$4,666.3 \text{ indemnity per acre}$$

**Step (6):** Determine total net indemnity

$(\$4,666.3/\text{acre} * 10 \text{ acres} * 100 \text{ percent interest on the crop}) - \text{Insurance premium}$

$$\$46,663 - \$3,496 = \$43,167 \text{ Net indemnity.}$$

**Using a Tomato Crop Insurance Excel Case Study with Value Option Endorsement**

What happens if we change the assumptions? Using A 65 percent coverage level (\$208/acre insurance premium), assume that during the final growth stage of the crop, the grower sells 4,000 cartons (400 cartons per acre) at an average selling price of \$6.00 per carton. Due to bad weather, the grower suffers crop losses, and has an additional unsold harvested production of 1,000 cartons (100 cartons per acre). What is the indemnity payment from the insurer?

After you download and open the Excel file [tomatoes-ins.xlsx](#) file, go to the VO spreadsheet. Table 6 illustrates the reference maximum dollar amount, allowable cost per carton, minimum value per carton, and minimum value option that are pre-populated specific for crop year 2017 (blue cells). To estimate the indemnity payment (if any) based on a 65 percent coverage level (0.65), see input information shown in the seven green cells in Table 6.

Once the coverage level has been selected, the dollar amount of insurance and producer premium will automatically appear in the last column (yellow cells). With a 65 percent coverage (0.65), the insurance guarantee is \$6,159 per acre, and the premium is \$208/acre. If we enter the number of acres to be insured (10), grower's share/interest on the crop (100%), the sale price per carton (\$6.00), number of cartons harvested per acre (500), and number of cartons sold per acre (400) in the respective (green) cells, the number of cartons unsold is calculated automatically (100). After the required values have been entered, the total value of production to count, indemnity per acre, net indemnity per acre, and total net indemnity value is calculated automatically (yellow cells). With a lower coverage level and higher losses, the net indemnity is \$3,876 per acre (\$38,762 for 10 acres).

**Table 6.** Indemnity estimator fresh market tomatoes value option screen

<b>Indemnity Estimator Fresh Market Tomatoes Value Option</b>			
Reference Maximum Dollar Amount	\$ 9,475	Dollar Amount of Insurance per acre	\$ 6,159
Allowable Cost per Carton	\$ 3.35	Producer Premium per acre	\$ 208
Minimum Value per Carton	\$ 6.15	Minimum Value Option per Carton	\$ 3.65
Minimum Value Option	\$ 3.65		
		Value of Sold Production	\$ 1,460
Coverage Level	0.65	Value of Unsold Production	\$ 615
Number of Acres	10	Penhooker salvage value	
Share of the crop	100%	Value of Production to Count	\$ 2,075
Sale Price per Carton	\$ 6.00	Indemnity per Acre	\$ 4,084
Number of Cartons Harvested per acre	500	Net Indemnity per acre	\$ 3,876
Number of Cartons Sold per acre	400	Total Net Indemnity	\$ 38,762
Number of Cartons Unsold per acre	100		

### Assessing the Financial Benefit of the VO Policy Endorsement

The grower in the exercise receives a higher indemnity payment because of the VO endorsement, but this situation raises questions: (1) How did the catastrophic event affect the grower's revenue after being compensated by the losses incurred, and (2) What would be the situation had the grower not purchased crop insurance? Table 7 shows the projected revenue under no-insurance and VO Dollar Plan insurance.

**Table 7.** Projected revenue with VO Dollar Plan insurance and without crop insurance

Production to Count PTC				Dollar Plan		
Total	Cartons	Cartons	PTC	Net	Revenue	
Cartons	Sold	Unsold	Value	Indemnity	No ins.	Insurance
1800	1800	0	\$ 6,570	\$ (208)	\$ 4,770	\$ 6,362
1700	1700	0	\$ 6,205	\$ (208)	\$ 4,505	\$ 5,997
1600	1600	0	\$ 5,840	\$ 111	\$ 4,240	\$ 5,951
1500	1500	0	\$ 5,475	\$ 476	\$ 3,975	\$ 5,951
1400	1400	0	\$ 5,110	\$ 841	\$ 3,710	\$ 5,951
1300	1300	0	\$ 4,745	\$ 1,206	\$ 3,445	\$ 5,951
1200	1200	0	\$ 4,380	\$ 1,571	\$ 3,180	\$ 5,951
1100	1100	0	\$ 4,015	\$ 1,936	\$ 2,915	\$ 5,951
1000	1000	0	\$ 3,650	\$ 2,301	\$ 2,650	\$ 5,951
900	900	0	\$ 3,285	\$ 2,666	\$ 2,385	\$ 5,951
800	800	0	\$ 2,920	\$ 3,031	\$ 2,120	\$ 5,951
700	700	0	\$ 2,555	\$ 3,396	\$ 1,855	\$ 5,951
600	600	0	\$ 2,190	\$ 3,761	\$ 1,590	\$ 5,951
500	400	100	\$ 2,075	\$ 3,876	\$ 1,325	\$ 5,951
400	400	0	\$ 1,460	\$ 4,491	\$ 1,060	\$ 5,951
300	300	0	\$ 1,095	\$ 4,856	\$ 795	\$ 5,951
200	200	0	\$ 730	\$ 5,221	\$ 530	\$ 5,951
100	100	0	\$ 365	\$ 5,586	\$ 265	\$ 5,951

If the grower chooses the VO endorsement, there is a negative net indemnity value of \$208 for total cartons sold above 1,700, indicating that a premium is due and the crop insurance plan did not pay any indemnities. Based on 400 cartons sold at \$6.00/carton and 100 unsold tomato cartons valued at \$6.15/carton, while the net indemnity is \$3,876 per acre, the revenue per acre in this particular situation is \$5,951 (\$2,075 PTC value + \$3,876 net indemnity). The difference between the dollar amount of insurance (\$6,159/acre) and the revenue (\$5,951) is the producer premium. Although crop insurance covers any shortfall in the dollar amount of insurance selected after accounting for PTC values, it is important to remember that premiums are due at the end of the crop year or when an indemnity is paid, whichever comes first. With a sales price of \$6.00 per carton, the net indemnity per acre is \$2,941 without the VO endorsement versus \$3,876 with the VO endorsement (i.e., higher premiums bring additional protection).

What if the grower selects not to purchase crop insurance? Without any insurance, revenue is \$1,325 per acre (500 cartons\*[\$6.00/carton - \$3.35 allowable cost]). This result in an additional loss of \$4,626 (\$5,951 – \$1,325) compared to the VO Dollar Plan of insurance.

## Concluding Remarks

In summary, crop insurance should be viewed as a financial risk management tool to protect you from catastrophic events. It should not be viewed as supplemental income or as a potential source of income. Having crop insurance may be the difference between surviving a bad year and going out of business. While an indemnity payment helps minimize losses significantly, there will still be losses, although much smaller compared to the case of no crop insurance at all.

The decision to obtain crop insurance involves certain tradeoffs related to coverage level, insurance guarantee, and its associated costs. This issue is even more complex when considering the extra cost of additional protection for a specific commodity. In the end, it depends on risk tolerance, short-term expectations, and the availability of financial resources to stay afloat if a catastrophic event occurs.

## References

USDA Federal Crop Insurance Corporation. 2016. *Fresh Market Tomato (Dollar Plan) Loss Adjustment Standards Handbook*. <https://www.rma.usda.gov/handbooks/25000/2017/17-25180.pdf>

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