



# **Minimizing Your Risks: Crop Insurance Training for Tropical Fruit Growers in South Florida:**

## **Florida Fruit Tree Crop Insurance Handbook Avocados, Mango, Carambola and Limes**



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

## **Acknowledgements**

This Crop Insurance Manual is the product of several sources and resources. The following acknowledgments recognize the contributors to the body of this publication:

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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 the Florida Fruit Tree crop insurance program for 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 crop insurance concepts, and specific information about the Florida Fruit Tree base policy and endorsements. Section 2 teaches the growers how to obtain a crop insurance quote using the United States Department of Agriculture, Risk Management Agency (USDA/RMA) online tool. Section 3 is about the practical applications of the Florida Fruit Tree program including crop insurance case studies. Additionally, growers will learn to use an Excel tool that will allow them to compare different financial scenarios based on simulated tree losses and coverage levels. By using this tool, growers may be in a better position to make an informed decision about the Florida Fruit Tree policy and the different endorsements available to mitigate 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. The Florida Fruit Tree insurance program was created in 1996; later in 2017, it was designated as a permanent program.

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 risk management needs. Loss payments (indemnities) are received when damage value is higher than the deductible as stated in the insurance policy. The federal government is directly involved with determining crop insurance policy provisions and rates.

### *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 or leaving the industry.

### Florida Fruit Tree Insurance Eligibility

Each type of tree listed below is insurable if :

The actuarial documents provide premium rates;

Grown to produce a commodity intended to be sold as fruit or juice for human consumption; and

You have a share on the crop.

Florida fruit trees *are not insurable* if they:

- (1) Have been grafted within a 12-month period before the date insurance attaches, unless the grafting is a result of topworking;
- (2) Are non-grafted seedlings (grown from seed);
- (3) Are unsound, diseased, or unhealthy;
- (4) No longer have the potential to produce a yield typical of healthy trees of the same age as the subject trees, unless such trees were topworked or buckhorned and qualify as stage I or II;
- (5) Are toppled; or
- (6) Were damaged before the beginning of the insurance period (If trees suffered damage the previous crop year, then insurance will not attach until the previous year's damage is determined, you submit a revised acreage report, and the trees are accepted by the Federal Crop Insurance Corporation (FCIC)).

**Florida Fruit trees include:**

Avocado trees;

Carambola trees;

Grapefruit trees;

Lemon trees;

Lime trees;

Mango trees;

Orange trees (includes early, mid, and late-season navel and temple); and

Other citrus trees (includes tangerine, tangelo, and murcotts)

**Florida Fruit Tree Policy Definitions**Tree Growth Stage

A tree -classification system is used by the FCIC. At the time insurance attaches, the stage of each insurable tree in the unit is:

(a) For orange, grapefruit, lemon, lime, other citrus, avocado, and mango trees, if they:

- 1) Were set out less than three crop years, buckhorned or topworked less than two crop years, or were reset after having been toppled less than one crop year prior to the beginning of the current crop year, denoted as **stage I**.
- 2) Were set out three or more crop years, buckhorned or topworked two crop years or more, or were reset after having been toppled less than two crop years prior to the beginning of the current crop year, but do not yet qualify as stage III, denoted as **stage II**, except that:
- 3) Are able to produce a yield typical of a healthy tree of the current tree age, denoted as **stage III**, except that:

(i) Citrus, avocado, and mango trees will not qualify for stage III until after the sixth crop year after set out; and

(ii) Citrus, avocado, and mango trees will not qualify for stage III until after the fourth crop year after buckhorning or topworking.

(b) For carambola trees, if they:

(1) Were set out, buckhorned, or topworked less than one crop year prior to the beginning of the current crop year, denoted as **stage I**.

(2) Were set out, buckhorned, or topworked one or more crop years prior to the beginning of the current crop year, but do not yet qualify as stage III, denoted as **stage II**.

(3) Are able to produce a yield typical of a healthy tree of the current tree age, denoted as *stage III*; however, carambola trees will not qualify for stage III until after the second crop year after set out, buckhorning, or topworking.

Counties Available

*Avocado and Mango* - Miami Dade County.

*Carambola* - Lee and Miami Dade counties.

*Lemon* - Hendry and Martin counties.

*Lime* - Lee and Miami Dade counties.

*Grapefruit, Orange and other citrus* – Trees are insurable in 28 counties. See your crop insurance agent for more details.

Causes of Loss

You are protected against the following:

Freeze;

Wind;

Excess moisture;

Flooding due to high groundwater levels, *if allowed by the special provisions*; and

Insects, diseases, and other pathogens, as specifically provided by the Special Provisions.

Insurance Period

For carryover policies, insurance begins for each crop year on June 1 when an acreage report is submitted by the sales closing date. For new policyholders, insurance coverage begins:

June 1 when a newly completed application is received by the sales closing date and all other policy requirements are met; or

30 days after the company receives your completed application for applications received after the sales closing date, subject to all other requirements of the policy.

The insurance period ends with the earliest occurrence of one of the following:

May 31; or

The total destruction of insured trees on the unit.

Important Dates (crop year 2020)

- Sales Closing: April 15, 2019
- Acreage Reporting: April 15, 2019
- Cancellation: May 31, 2019
- Premium Billing: March 1, 2020
- Termination: May 31, 2020

Any grower interested in the latest information on dates, reference prices and other relevant information may want to view the actuarial information browser at

<http://webapp.rma.usda.gov/apps/actuarialinformationbrowser/>

To get the information for the crop year 2020, you may click on *AIB Reinsurance Year 2019*. If you are an avocado grower, you may select from the drop-down menu as follows:

- Commodity: *Avocado Trees (0212)*
- Commodity Year: *2020*
- Insurance Plan: *Tree Based Dollar Amount of Insurance (40)*
- 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 displays the USDA Risk Management Agency's Actuarial Information Browser (AIB) interface. The browser shows the 'Commodity Report' for 'Avocado Trees (0212)' in 'Florida (12)' for the year '2020'. The 'Prices - Base County' table is visible, showing reference and catastrophic dollar amounts for different range classes and growth stages.

Prices - Base County			TR-1	TR-2	TR-3
Range Class	Growth Stage		No Type Specified 997 No Practice Specified 997	No Type Specified 997 No Practice Specified (OC) 723	No Type Specified 997 No Practice Specified (OT) 724
D01	I	Reference Maximum Dollar Amount	\$52.0000	\$52.0000	\$52.0000
		Catastrophic Dollar Amount	\$28.6000	\$28.6000	\$28.6000
D02	II	Reference Maximum Dollar Amount	\$113.0000	\$113.0000	\$113.0000
		Catastrophic Dollar Amount	\$62.4500	\$62.4500	\$62.4500



To get the relevant information for the crop year, you just need to click on the respective tab. On the screen above, the prices tab has been selected; it shows that the Reference Maximum Dollar Amount and the Catastrophic Dollar Amount for an avocado tree Growth Stage I is \$52.00 and \$28.60 per tree, respectively.

## **Basic Crop Insurance Concepts**

### Insurance Unit

There are four unit types available for crop insurance policies: basic, optional, enterprise, and whole-farm. However, most of the time the FFT policy only allows the basic and the optional unit.

- *Basic unit*: this type of unit, 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), and 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.

### Crop Insurance Coverage

Catastrophic Risk Protection (CAT) is the most basic coverage option. Coverage is set up at the 50 percent level and 55 percent of the maximum reference dollar amount for the appropriate tree growth stage, rounded at the nearest cent. For example, if the maximum referent dollar amount is \$50 per tree, and there are 100 trees in the grove, the CAT coverage results in a \$1,375 guarantee for a 100 trees grove. The cost for CAT coverage is an administrative fee of \$300 per crop per county, which the grower must pay in order to be eligible, regardless of the acreage.

Any coverage above CAT is considered buy-up coverage. Coverage levels range from 50 to 75 percent of the amount of insurance, which is based on the number of trees to be insured at different growth stages, and the reference prices per tree as shown on the actuarial information. For example if the maximum reference dollar amount for a tree stage growth II is \$103.00 per tree and there are 100 trees in the grove, a 65 percent coverage level results in a \$6,695 guarantee ( $\$103/\text{tree} * 100 \text{ trees} * 65\%$ ) for the 100 trees grove.

### Insurance Premium

The premium is the cost paid by the grower for crop insurance protection; premiums are set by the USDA/RMA. The premium depends on the desired coverage level (usually from 50 to 75 percent), and the maximum reference dollar amount per tree. To encourage crop insurance adoption, a percentage of the premium is subsidized by the Federal government. For the crop year 2020, the crop insurance premium is due on March 1, 2020 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 is 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.

### Insurance Indemnity

Technically, a loss occurs when trees are damaged or destroyed as result of one or more of the insurable causes of loss. After experiencing a loss, if the damage value is greater than the deductible, usually the grower receives a net indemnity (the calculated value of the indemnity minus grower's insurance premium).

*For additional information on reporting requirements and duties in the event of damage or loss, please consult a crop insurance agent.*

## **Florida Fruit Tree Policy Endorsements**

For an additional premium, the Florida Fruit Tree policy offers the *Occurrence Loss Option* and the *Comprehensive Tree Value* as policy endorsements for additional protection.

*Occurrence Loss Option (OLO):* this policy endorsement provides supplemental coverage for eligible trees. Under this endorsement, the insurance deductible is eliminated; the OLO endorsement uses a 5 percent unit value to estimate indemnities. *If the tree insured damage value exceeds the 5 percent unit value, then the insured damage is payable; if the tree insured damage value is less than the 5 percent unit value, there is no claim.* You must select the OLO endorsement when you apply for insurance or by the sales closing date, if you already have insurance.

*Comprehensive Tree Value (CTV):* this endorsement provides supplemental coverage for eligible trees. *It allows for the future value of destroyed or fully damaged trees.* You must choose the CTV when you apply for insurance or by the sales closing date, if you already have crop insurance. Trees must be reported on the acreage report by stage-block and tree subtype.

*The CTV endorsement is not available for carambola, lemon, lime, mango or stage I trees.*

*Only trees in Stage II and Stage III blocks considered fully (100%) damaged or destroyed are eligible for an indemnity under the CTV endorsement.*

For trees considered destroyed, in order to receive the full indemnity under this endorsement:

- (a) You must *plant an equivalent number of trees* within three calendar years of the date of the removal or destruction, unless otherwise specified on the Special Provisions;
- (b) *The trees you plant do not have to be the same crop as the destroyed trees*, but they must be grown to produce fruit, intended to be sold for human consumption; and
- (c) The trees must be *planted according to recognized good farming practices* and in an area within the state of Florida that the FCIC consider to be suitable for production of the specific fruit crop.
- (d) You will receive 50 percent of the indemnity within 30 days after we approve your claim for indemnity; the remaining 50 percent will be paid after we verify that you have met the requirements of this section

## II. Crop Insurance Premium Estimator

Any grower interested in obtaining a crop insurance quote for his operation may use the USDA/RMA website's online insurance premium estimator for that purpose.

*Please keep in mind that your actual premium will depend upon your specific conditions and exclusions; refer to your crop insurance agent for more details.*

Below are two examples showing how to obtain a crop insurance premium quote online for the crop year 2020 on the USDA/RMA website. In the first example, it is assumed that an avocado grower (conventional practice) located in Miami Dade County, in a high risk area (Sub County Code AAA), wants to insure 500 avocado trees stage I, 500 avocado trees stage II, and 500 avocado trees stage III, grown on a basic unit. Also the grower has a 100 percent interest in the crop (i.e., the grower is not sharecropping).

*What would be the premium for crop year 2020, assuming a coverage level of 75 percent?*

*What would be the premium if the grower wants a 75 percent coverage level under the OLO endorsement?*

**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" and "Main Menu". The "Popular Topics" section lists "Appendix III/M-13", "Bulletins and Handbooks", and "Crop Policies and Pilots". The "Main Menu" section has a sub-section titled "Pop-Up Blockers" with a yellow border and a message: "Please disable your pop-up blocker before using this application or add this application to your list of safe sites." The user ID "CE0101" is visible in the top right corner.

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: *Avocado Trees 0212*
- Commodity Year: *2020*
- State: *Florida 12*
- County: *Miami-Dade 086*
- Type: *No Type Specified 997 (Populated by default)*
- Practice: *No Practice Specified (OT) 724*

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

- Unit of Measure: *DOL (Populated by default)*
- Policy Commencement Month: *June*
- Insured Share Percent: *1.000*
- Sub County Code: *AAA*
- Endorsement Values:

Base Values

Growth Stage Number of Trees Price Election

*I: 500*

*II: 500*

*III: 500*

The screen with the selected parameters will look like this:

https://ewebapp.rma.usda.gov/apps/costestimator/Estimates/QuickEstimate.aspx

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

**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** CE0401

**Quick Criteria**

- \* Commodity : Avocado Trees 0212
- \* Commodity Year : 2020
- \* State : Florida 12
- \* County : Miami - Dade 086
- \* Type : No Type Specified 997
- \* Practice : No Practice Specified (OT) 724

**Individual Coverage**

**Tree Based Dollar Amount Of Insurance 40**

- \* Unit of Measure : DOL
- \* Policy Commencement Month : June
- \* Insured Share Percent : 1.000
- Sub County Code : AAA
- \* Endorsement Values :

Base Values		
Growth Stage	Number of Trees	Price Election
I	500	52.0000
II	500	113.0000
III	500	144.0000

**Get Estimates**

Then click on Get Estimates and you will get this screen:

[Back](#) [Save](#) [Print/Export](#)

**Selected Initial Criteria**  
 \* Commodity : Avocado Trees 0212 \* Commodity Year : 2020 \* State : Florida 12  
 \* County : Miami - Dade 086 \* Type : No Type Specified 997 \* Practice : No Practice Specified (OT) 724

**Individual Coverage**  
**Tree Based Dollar Amount Of Insurance 40**  
 \* Unit of Measure : DOL \* Policy Commencement Month : June \* Insured Share Percent : 1.000  
 Sub County Code : AAA \* Endorsement Values :

Base Values		
Growth Stage	Number of Trees	Price Election
I	500	52.0000
II	500	113.0000
III	500	144.0000

**Show In Grid**  
 Liability Amount  Total Premium Amount  Producer Premium Amount  Subsidy Amount

**Liability Amount**

Individual Coverage										
	Growth Stage	PE %	75 %	70 %	65 %	60 %	55 %	50 %	View	
Tree Based Dollar Amount Of Insurance 40	BASE I	100 %	\$19,500.00	\$18,200.00	\$16,900.00	\$15,600.00	\$14,300.00	\$13,000.00	Worksheets	Detailed Estimate
	BASE II	100 %	\$42,375.00	\$39,550.00	\$36,725.00	\$33,900.00	\$31,075.00	\$28,250.00		
	BASE III	100 %	\$54,000.00	\$50,400.00	\$46,800.00	\$43,200.00	\$39,600.00	\$36,000.00		

[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.

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

**Liability Amount**

Individual Coverage										
	Growth Stage	PE %	75 %	70 %	65 %	60 %	55 %	50 %	View	
Tree Based Dollar Amount Of Insurance 40	BASE I	100 %	\$19,500.00	\$18,200.00	\$16,900.00	\$15,600.00	\$14,300.00	\$13,000.00	Worksheets	Detailed Estimate
	BASE II	100 %	\$42,375.00	\$39,550.00	\$36,725.00	\$33,900.00	\$31,075.00	\$28,250.00		
	BASE III	100 %	\$54,000.00	\$50,400.00	\$46,800.00	\$43,200.00	\$39,600.00	\$36,000.00		

[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.



The exercise above shows the producer's insurance premium (500 trees stage I, 500 trees stage II, 500 trees stage III, 100% price election) under different coverage levels ranging from 50 to 75 percent. If the grower selects the maximum 75 percent coverage level, the total insurance premium is \$1,719 (\$289 stage I, \$629 stage II, and \$801 stage III). Likewise, if the grower selects the minimum 50 percent coverage level, the insurance premium is \$613 (\$103 stage I, \$224 stage II, and \$286 stage III).

Also, this exercise shows that with CAT insurance, there is no producer premium. To purchase this insurance product, the grower will pay a \$300 fee independent of the acreage. It is important to remember that CAT has a fixed 50 percent coverage level, and a 55 percent price election of the maximum tree reference value.

*What if I want to know the cost of extra protection like CTV?*

**Step 4a:** In the screen above, go *Back* to the previous page, verify that Unit Structure is *Basic*, go to Options by Commodity and select CV Comprehensive Tree Value, a new screen will appear, then fill out the number of trees stage II (500) and III (500) to be insured, and click *Get Estimates* (at bottom of screen below).

		Item 1	Delete																											
* Commodity	:	Avocado Trees 0212																												
* Type	:	No Type Specified 997																												
* Practice	:	No Practice Specified (OT) 724																												
* Unit of Measure	:	DOL																												
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																												
* Policy Commencement Month	:	June																												
* Insured Share Percent	:	1.000																												
* Unit Structure	:	<input checked="" type="radio"/> Basic <input type="radio"/> Optional																												
* Basic Unit Number	:	1																												
* Optional Unit Number	:	1																												
Sub County Code	:	AAA																												
Options By Unit	:	None Available																												
Options By Commodity	:	CV Comprehensive Tree Value 0.034 OW Olo Base Policy 0.052 OX Olo Ctv Endorsement 0.034																												
* Endorsement Values	:	<table border="1"> <thead> <tr> <th colspan="3">Base Values</th> </tr> <tr> <th>Growth Stage</th> <th>Number of Trees</th> <th>Price Election</th> </tr> </thead> <tbody> <tr> <td>I</td> <td>500</td> <td>52.0000</td> </tr> <tr> <td>II</td> <td>500</td> <td>113.0000</td> </tr> <tr> <td>III</td> <td>500</td> <td>144.0000</td> </tr> </tbody> </table> <table border="1"> <thead> <tr> <th colspan="3">(997) No Type Specified Endorsement Values</th> </tr> <tr> <th>Growth Stage</th> <th>Number of Trees</th> <th>Price Election</th> </tr> </thead> <tbody> <tr> <td>II</td> <td>500</td> <td>50.0000</td> </tr> <tr> <td>III</td> <td>500</td> <td>115.0000</td> </tr> </tbody> </table>	Base Values			Growth Stage	Number of Trees	Price Election	I	500	52.0000	II	500	113.0000	III	500	144.0000	(997) No Type Specified Endorsement Values			Growth Stage	Number of Trees	Price Election	II	500	50.0000	III	500	115.0000	
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Growth Stage	Number of Trees	Price Election																												
II	500	50.0000																												
III	500	115.0000																												
		<b>Get Estimates</b>																												

On the next screen, select *Producer Premium Amount* to obtain the following *Detailed Estimate*:



[Back](#) [Save](#) [Print/Export](#)

**Selected Initial Criteria**

\* Commodity Year : 2020 \* Insurance Plan : Tree Based Dollar Amount Of Insurance 40  
 \* County : Miami - Dade 086

**Show Inputs In Grid**  
 << Show Available Inputs >>

**Show Results In Grid**

Liability Amount
  Total Premium Amount
  **Producer Premium Amount**

**Producer Premium Amount**

Avocado Trees 0212	Growth Stage	PE %	75 %	70 %	65 %	60 %	55 %	50 %
Item 1	BASE I	100 %	\$289.00	\$233.00	\$206.00	\$158.00	\$135.00	\$103.00
	BASE II	100 %	\$629.00	\$506.00	\$447.00	\$344.00	\$292.00	\$224.00
	BASE III	100 %	\$801.00	\$645.00	\$570.00	\$439.00	\$373.00	\$286.00
	CV II	100 %	\$147.00	\$114.00	\$96.00	\$72.00	\$63.00	\$50.00
	CV III	100 %	\$338.00	\$262.00	\$221.00	\$165.00	\$146.00	\$115.00

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.

What is the cost of the extra protection? The screen above shows the insurance premium for the grower in the example (500 trees stage I, 500 trees stage II, 500 trees stage III, 100% price election, and CTV endorsement) under different coverage levels ranging from 50 to 75 percent. If the grower selects the maximum 75 percent coverage level, the total insurance premium is \$2,204 (\$1,719 Base I, II, III +\$147 CV II+\$338 CV III). Likewise, if the grower selects the minimum 50 percent coverage level, the insurance premium is \$778 (\$613 Base I, II, III +\$50 CV II+\$115 CV III).

Now let us look at a second example. In this scenario, it is assumed the grower wants to insure 1,000 mango trees (No Practice Specified (OT) 724), in full production (Stage III), grown on a basic unit in Miami Dade County, in a high risk area (Sub County Code AAA), the grower has a 100 percent interest in the grove. Using the USDA/RMA cost estimator website, we explore two different levels of insurance coverage.

What would be the premium for crop year 2020, assuming a coverage level of 70 percent? What would be the premium if the grower wants a 70 percent coverage level under the OLO endorsement?

The input for the Quick Estimate box will look like this

<https://ewebapp.rma.usda.gov/apps/costestimator/Estimates/QuickEstimate.aspx>

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**Quick Estimate** 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
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**Quick Criteria**

\* Commodity : Mango Trees 0214  
 \* Commodity Year : 2020  
 \* State : Florida 12  
 \* County : Miami - Dade 086  
 \* Type : No Type Specified 997  
 \* Practice : No Practice Specified (OT) 724

**Individual Coverage**

**Tree Based Dollar Amount Of Insurance 40**

\* Unit of Measure : DOL  
 \* Policy Commencement Month : June  
 \* Insured Share Percent : 1.000  
 Sub County Code : AAA

\* Endorsement Values :

Base Values		
Growth Stage	Number of Trees	Price Election
I		52.0000
II		113.0000
III	1000	144.0000

[Get Estimates](#)

As shown in the screen below, if you select 70 percent coverage level, your premium is \$1,289.

**USDA** United States Department of Agriculture  
Risk Management Agency

**Detailed Estimate 598040**

Back Save Print/Export

**Selected Initial Criteria**

\* Commodity Year : 2020 \* Insurance Plan : Tree Based Dollar Amount Of Insurance 40  
\* County : Miami - Dade 086

**Show Inputs In Grid**  
<< Show Available Inputs >>

**Show Results In Grid**

Liability Amount  Total Premium Amount  **Producer Premium Amount**

		Producer Premium Amount								
Mango Trees 0214	Growth Stage	PE %	75 %	70 %	65 %	60 %	55 %	50 %	CAT 50 %	
Item 1	BASE III	100 %	\$1,602.00	\$1,289.00	\$1,140.00	\$878.00	\$745.00	\$572.00	-	
		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.

What if you selected the OLO policy endorsement?

If you purchase additional protection (OLO), and select a 70 percent coverage level, your premium is \$2,083; the extra cost of the OLO endorsement is \$794.

**USDA** United States Department of Agriculture  
Risk Management Agency

**Detailed Estimate 598040**

Back Save Print/Export

**Selected Initial Criteria**

\* Commodity Year : 2020 \* Insurance Plan : Tree Based Dollar Amount Of Insurance 40  
\* County : Miami - Dade 086

**Show Inputs In Grid**  
<< Show Available Inputs >>

**Show Results In Grid**

Liability Amount  Total Premium Amount  **Producer Premium Amount**

		Producer Premium Amount							
Mango Trees 0214	Growth Stage	PE %	75 %	70 %	65 %	60 %	55 %	50 %	
Item 1	BASE III	100 %	\$2,449.00	\$2,083.00	\$1,934.00	\$1,568.00	\$1,437.00	\$1,198.00	

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.

### III. Estimating Indemnity Payments

#### Calculating Indemnities

As defined earlier, indemnities (insurance payouts) are received only if the actual damage/losses are higher than the insurance deductible. If the actual damage/losses are equal or less than the insurance deductible, there is no indemnity payment to the insured grower.

For the purpose of illustrating how an indemnity payment is estimated, let us assume a grower anticipates an active hurricane season and purchases crop insurance (Florida Fruit Tree, base policy) for 1,000 stage III avocado trees with a 75 percent coverage level. Now, let's assume that wind damage during the month of September damaged 500 avocado trees, and the damage was estimated at about 70% (crop insurance adjuster). What would be the indemnity payment (if any) under the current crop insurance policy?

**Step (1):** Determine the unit deductible

$$\begin{aligned} & \# \text{ of trees insured} * \text{ tree reference value} * (100 - \text{coverage level } \%) \\ & 1,000 \text{ trees} * \$144 \text{ (reference value stage III)} * 25\% \text{ (deductible)} = \$36,000 \end{aligned}$$

**Step (2):** Determine the damage value:

$$\begin{aligned} & \# \text{ of trees damaged} * \text{ tree reference value} * \% \text{ damage level} \\ & 500 \text{ trees damaged} * \$144 \text{ (reference value stage III)} * 70\% \text{ (damage } \%) = \$50,400 \end{aligned}$$

**Step (3):** Calculate indemnity value; if the amount in Step 3 is positive, the grower receives an indemnity payment.

$$\begin{aligned} & \text{Damage value} - \text{unit deductible} \\ & \$50,400 - \$36,000 = \$14,400 \text{ indemnity} \end{aligned}$$

From this example is clear that the grower is covering part of the losses, but *what would be the situation if the grower had decided to add policy endorsements to minimize his risk even more?* These questions will be answered in the next section.

#### Florida Fruit Tree Crop Insurance Excel Tool

Should you decide to purchase the Florida Fruit Tree policy, you do not have to go through the calculations shown before each time you want to evaluate the financial benefit of it. Rather, you can use the Excel tool (available at <http://agecon.centers.ufl.edu/cropins1.html>) to simulate potential losses (if any) covered by the Florida Fruit Tree policy under several coverage scenarios; including the CTV and OLO policy endorsements.

*Note: If your farm is located in a high-risk area (Sub county code AAA), please download the Excel file FFTAAA.xlsx; if your farm is not located in a high-risk area, please download the Excel file FFTR.xlsx.*

*Disclaimer: this excel tool includes the producer premium but it does not account for Administrative and Operating payments (A&O) and other administrative fees charged which result in a slightly higher producer premium; for a detailed crop insurance quote, please contact your crop insurance agent.*

After you download and open the Excel file [FFTAAA.xlsx](#), go to the Avocado spreadsheet. To keep it simple, we continue to work with the previous exercise.

Table 2 shows the FFT and the CAT avocado tree reference values in blue cells. The first step is to enter the number of trees at each stage growth to be insured. The user may enter on the green cells the number of trees to be insured at each stage; for this example it is 1,000 stage III avocado trees.

**Table 2.** Avocado tree reference price values for the FFT and CAT policies, and input information for the trees to be covered under the crop insurance policy

Tree stage	Tree Reference Value	CAT Reference Value	Number of Trees Insured	Insurance Coverage	Producer Premium
Stage I	52	28.60	0	75%	\$ 1,602
Stage II	113	62.15	0		
Stage III	144	79.20	1000		

After the number of trees to be insured has been entered, producer's premiums and deductibles by different coverage levels are shown in the table below (Table 3). Producer's premium range from \$572 for a 50% coverage level (subject to a \$72,000 deductible) to \$1,602 for a 75% coverage level (subject to a \$36,000 deductible).

**Table 3.** Avocado tree producer premium, under different coverage levels

Coverage Level	Amount of Protection	Unit Deductible	Premium by Tree Stage			Producer Premium
			I	II	III	
75%	\$ 108,000	\$ 36,000	\$ -	\$ -	\$ 1,602	\$ 1,602
70%	\$ 100,800	\$ 43,200	\$ -	\$ -	\$ 1,289	\$ 1,289
65%	\$ 93,600	\$ 50,400	\$ -	\$ -	\$ 1,140	\$ 1,140
60%	\$ 86,400	\$ 57,600	\$ -	\$ -	\$ 878	\$ 878
55%	\$ 79,200	\$ 64,800	\$ -	\$ -	\$ 745	\$ 745
50%	\$ 72,000	\$ 72,000	\$ -	\$ -	\$ 572	\$ 572
CAT	\$ 39,600	\$ 39,600	-	-	-	-

In this example, the producer is interested in a 75% coverage level; therefore, he selects the 75% coverage (green cell), his insurance premium is \$1,602. If the producer were interested in Catastrophic crop insurance (CAT), he would be required to pay only an administrative fee of \$300.

To calculate an indemnity under the base FFT policy, the next step is to enter the number of trees damaged and the percentage of damage after wind damage. In table 4 (below) the user may enter the following information (green cells) as follows: 500 stage III avocado trees with a 70% damage level.

**Table 4.** Avocado tree input information for indemnity calculation

	Stage					
	I	II	III			
# Trees Damaged		0	500			
% Damage	0%	0%	70%			
Damage Value	Insurance Deductible	CAT Damage	CAT Indemnity	FFT Indemnity	Producer Premium	Net Indemnity
\$ 50,400	\$ 36,000	\$ 27,720	\$ -	\$ 14,400	\$ 1,602	\$ 12,798

After entering this information, the yellow cells at the bottom show the damage value (\$50,400), the insurance deductible with a 75% coverage level (\$36,000), and the CAT crop insurance damage value (\$27,720), respectively. The next two cells show the indemnity payment under the CAT (\$0) and the FFT (\$14,400) crop insurance policies, respectively. If the grower had elected the FFT with a 75% coverage level, then after subtracting the producer premium, the net indemnity payment will be \$12,798 (\$14,400 - \$1,602).

At this point is important to remember that under the base FFT policy, insured losses will be paid only after the deductible has been met. If the grower did not have crop insurance, losses will be equal to the tree damage value (\$50,400); if the grower had the FFT base policy with a 75 percent coverage level, his losses will be equal to the policy deductible (\$36,000), *crop insurance does not eliminate losses, it helps to reduce losses*. If the grower had elected CAT crop insurance, the grower does not receive any indemnity, the damage value is not high enough for an indemnity payment based on the CAT policy.

**Florida Fruit Tree Crop Insurance Case Study I**

Now let’s continue with another example, suppose that a grower located in Miami Dade County is the sole owner of a conventional avocado grove located on the high-risk AAA area. He wants to insure 1,000 avocado trees stage II, and 1,000 avocado trees stage III, he purchases the FFT crop insurance policy with a 75% coverage level, and to minimize even more his risk he may purchase the Occurrence Loss Option (OLO) or the Comprehensive Tree Value (CTV) endorsement.

Later during the crop season, his grove suffers freeze damage: 1,000 stage II avocado trees have 50% damage, and 1,000 stage III avocado trees have 50% damage.

*What would be the premiums and the indemnity payments for the FFT base policy?*

*What would be the premiums and the indemnity payments under the OLO and CTV endorsement options?*

- FFT base policy

The producer’s premium to insure 1,000 stage II and 1,000 stage III avocado trees with a 75% coverage level will be \$2,859 as shown next:

Tree stage	Tree Reference Value	CAT Reference Value	Number of Trees Insured	Insurance Coverage	Producer Premium
Stage I	52	28.60	0	75%	\$ 2,859
Stage II	113	62.15	1000		
Stage III	144	79.20	1000		

To estimate the indemnity under the base FFT policy is necessary to enter the damage information (green cells): 1,000 stage II avocado trees have 50% damage, and 1,000 stage III avocado trees have 50% damage as shown below:

	Stage					
	I	II	III			
# Trees Damaged		1000	1000			
% Damage	0%	50%	50%			
<b>Damage Value</b>	<b>Insurance Deductible</b>	<b>CAT Damage</b>	<b>CAT Indemnity</b>	<b>FFT Indemnity</b>	<b>Producer Premium</b>	<b>Net Indemnity</b>
\$ 128,500	\$ 64,250	\$ 70,675	\$ -	\$ 64,250	\$ 2,859	\$ 61,391

The damage value for 1,000 avocado trees stage II and 1,000 avocado trees stage III with a 50% damage level is \$128,500, the insurance unit has a deductible of \$64,250, and the CAT damage value is \$70,675. In this case, the losses are greater than the deductible (\$64,250); therefore, the indemnity under the FFT base policy is \$64,250. After factoring in the producer premium (\$2,859), the grower may be eligible for a net

indemnity payment of \$61,391. In this example, there is no indemnity payment from the CAT policy because the value of the losses is not high enough to pay benefits.

*It is important to remember that the producer premium is due by March 1 of the crop year or when an indemnity payment is received, whichever occurs first.*

- OLO policy endorsement

Now let's see what would be the situation if the grower had elected the *OLO policy endorsement*. The producer premium for 1,000 avocado trees stage II and 1,000 avocado trees stage III with a 75% coverage with this endorsement is \$4,059 as shown next:

Tree Stage	Tree Reference Value	Number of Insured Trees	Insurance Coverage	Producer Premium
Stage I	52	0	75%	\$ 4,059
Stage II	113	1000		
Stage III	144	1000		

The additional premium may (may not) have extra protection benefits, as we will see next. *The way the OLO endorsement works is as follows: the OLO option specifies a value, which is 5 percent of the amount of protection. As long as the amount of insured damage is greater the OLO value (5 percent of the amount of protection), the indemnity owned is equal to the insured damage.*

To estimate the indemnity under the base FFT policy with the OLO endorsement please enter the damage information (green cells): 1,000 stage II avocado trees have 50% damage, and 1,000 stage III avocado trees have 50% damage as shown below:

	Stage				
	I	II	III		
# Trees Damaged	0	1000	1000		
% Damage	0%	50%	50%		
<b>Damage Value</b>	<b>OLO Value</b>	<b>Insured Damage</b>	<b>Producer Premium</b>	<b>OLO Indemnity</b>	<b>OLO Net Indemnity</b>
\$ 128,500	\$ 9,638	\$ 96,375	\$ 4,059	\$ 96,375	\$ 92,316

After entering the damage information, the tree damage value is the same as before (\$128,500). The OLO value (\$9,638) is substantially lower than the insured damage \$96,375; therefore, the insured grower will receive an indemnity. For this particular example, the OLO indemnity is \$96,375, after subtracting the producer premium, the net indemnity is \$92,316 (\$96,375 - \$4,059) as shown above.

- CTV policy endorsement

Finally, let's look at the same scenario but assuming that the grower had elected the *CTV policy endorsement*. The producer premium for 1,000 avocado trees Stage II, and 1,000 avocado trees Stage III with a 75 percent coverage level and the CTV policy endorsement is \$3,830 as shown next:

Tree Stage	Tree Reference Value	CTV Reference Value		Number of Insured Trees	Insurance Coverage	Producer Premium
		Minimum	Maximum			
Stage I	52	-	-	0	75%	\$ 3,830
Stage II	113	41	50	1000		
Stage III	144	66	115	1000		

The additional premium may (may not) bring extra protection benefits, as we will see next. The way indemnities are calculated under this policy endorsement is a two-stage process. First, damages are calculated as in the FFT policy; second, to estimate the CTV indemnity, only trees that are either fully damaged (100%) and/or completely destroyed qualify for benefits under this endorsement. In this example, *the trees are neither fully damaged nor destroyed; therefore, there are no benefits paid from the CTV endorsement.*

To estimate the indemnity under the base FFT policy with the CTV endorsement, please enter the damage information (green cells): *1,000 stage II avocado trees have 50% damage, and 1,000 stage III avocado trees have 50% damage.* Do not enter information under the CTV section given that the trees are neither fully damaged and/or destroyed as shown below:

	Base FFT				CTV	
	I	II	III		II	III
# Trees Damaged		1000	1000	Damaged trees 100% damage		
% Damage	0%	50%	50%	Destroyed trees		
<b>FFT Deductible</b>	<b>FFT Damage Value</b>	<b>FFT Indemnity</b>	<b>Producer Premium</b>	<b>Net Indemnity</b>		
\$ 64,250	\$ 128,500	\$ 64,250	\$ 3,830			
<b>CTV Deductible</b>	<b>CTV damage Value</b>	<b>CTV Indemnity</b>	<b>Total Indemnity</b>	<b>\$ 60,420</b>		
\$ 41,250	\$ -	\$ -	\$ 64,250			

First, damage value is calculated as in the FFT policy; the damage value is the same as before (\$128,500) and the FFT indemnity is \$64,250. The CTV endorsement has a deductible (equal to the % of the deductible of the base FFT policy) to be met before benefits are paid. However, in this example, *the trees are neither fully damaged nor destroyed; therefore, there are no benefits paid from the CTV endorsement.* After subtracting the producer premium, the net indemnity under this endorsement is \$60,420.



## Florida Fruit Tree Crop Insurance Case Study II

Now let us suppose that a grower located in Miami Dade County is the sole owner of a conventional avocado grove located on the high-risk AAA area. He wants to insure 1,000 avocado trees stage II, and 1,000 avocado trees stage III, he purchases the FFT crop insurance policy with a 70% coverage level, and to minimize even more his risk he may purchase the Occurrence Loss Option (OLO), or the Comprehensive Tree Value (CTV) endorsement.

Later during the crop season, his grove suffers extensive wind damage, 1,000 stage II avocado trees have 75% damage, and 1,000 stage III avocado trees are completely destroyed.

*What would be the premiums and the indemnity payment for the FFT base policy? What would be the premiums and the indemnity payments under the OLO and CTV endorsement options?*

- FFT base policy

The producer's premium to insure 1,000 stage II and 1,000 stage III avocado trees with a 70% coverage level is \$2,300 as shown below:

Tree stage	Tree Reference Value	CAT Reference Value	Number of Trees Insured	Insurance Coverage	Producer Premium
Stage I	52	28.60	0		
Stage II	113	62.15	1000	70%	\$ 2,300
Stage III	144	79.20	1000		

To calculate the indemnity under the FFT base policy, please enter the damage information (green cells): 1,000 stage II avocado trees have 75% damage, and 1,000 stage III avocado trees destroyed as shown below:

	Stage					
	I	II	III			
# Trees Damaged		1000	1000			
% Damage	0%	75%	100%			
Damage Value	Insurance Deductible	CAT Damage	CAT Indemnity	FFT Indemnity	Producer Premium	Net Indemnity
\$ 228,750	\$ 77,100	\$ 125,813	\$55,137.50	\$ 151,650	\$ 2,300	\$149,350

After entering the damage information, the estimated damage value is \$228,750, the insured unit has a deductible of \$77,100, the damage value under CAT is \$125,813. Given the magnitude of the losses, there is an indemnity payment under both CAT (\$55,138), and FFT (\$151,650), respectively. After subtracting the

producer premium, the grower is eligible for a net indemnity payment of \$149,350 under the base FFT policy.

This particular example is based on a very pessimistic scenario; however, it is helpful to highlight the difference between two crop insurance policies CAT vs the base FFT. *Because of the low insured value under CAT, benefits are received only under very catastrophic situations.* If the grower had elected the CAT coverage, the indemnity value will be \$55,138, which is almost a third of the indemnity received under the FFT policy; of course, the higher level of protection from the FFT has an extra cost.

- OLO policy endorsement

Now let's see what would be the situation if the grower had elected the *FFT policy and the OLO policy endorsement*. The producer premium to insure 1,000 stage II and 1,000 stage III avocado trees with the OLO endorsement is \$3,452 as shown below:

Tree Stage	Tree Reference Value	Number of Insured Trees	Insurance Coverage	Producer Premium
Stage I	52	0	70%	\$ 3,452
Stage II	113	1000		
Stage III	144	1000		

The additional premium may (may not) have extra protection benefits, as we will see next. To calculate an indemnity under the base FFT with the OLO endorsement, please enter the damage information (green cells): 1,000 avocado trees stage II with a 75% damage and 1,000 avocado trees stage III destroyed as shown below:

	Stage					
	I	II	III			
# Trees Damaged	0	1000	1000			
% Damage	0%	75%	100%			
Damage Value	OLO Value	Insured Damage	Producer Premium	OLO Indemnity	OLO Net Indemnity	
\$ 228,750	\$ 8,995	\$ 160,125	\$ 3,452	\$160,125	\$ 156,673	

The tree damage value is the same as before (\$228,750); the OLO value (\$8,995) is substantially lower than the insured damage (\$160,125). Therefore, the producer in the example is eligible to receive an indemnity, which is equal to the insured damage. The net indemnity after subtracting the producer premium is \$156,673

- CTV policy endorsement

Finally, let's look at what would be the situation had the grower elected the CTV policy endorsement. The producer premium to insure 1,000 stage II and 1,000 stage III avocado trees with the CTV policy endorsement is \$3,050 as shown next:

Tree Stage	Tree Reference Value	CTV Reference Value		Number of Insured Trees	Insurance Coverage	Producer Premium
		Minimum	Maximum			
Stage I	52	-	-	0		
Stage II	113	41	50	1000	70%	\$ 3,050
Stage III	144	66	115	1000		

The additional premium may (may not) bring extra protection benefits, as we will see next. To estimate an indemnity under the base FFT with the CTV endorsement, please enter the damage information (green cells): 1,000 avocado trees stage II with a 75% damage and 1,000 avocado trees stage III destroyed as shown below:

	Base FFT				CTV	
	I	II	III		II	III
# Trees Damaged		1000	1000	Damaged trees ( 100% damage)		
% Damage	0%	75%	100%	Destroyed trees		1000

  

FFT Deductible	FFT Damage Value	FFT Indemnity	Producer Premium	Net Indemnity
\$ 77,100	\$ 228,750	\$ 151,650	\$ 3,050	
CTV Deductible	CTV damage Value	CTV Indemnity	Total Indemnity	\$ 214,100
\$ 49,500	\$ 115,000	\$ 65,500	\$ 217,150	

The indemnity calculation under the CTV endorsement is a two-stage process. First, damages are calculated as in the FFT policy; therefore, the damage value is the same as before (\$228,750), the FFT indemnity is \$151,650. Second, in this example, 1,000 trees stage III are destroyed; therefore, the producer may be eligible to receive benefits from the CTV endorsement. The CTV endorsement has a deductible to be met before benefits are paid; the CTV damage value (\$115,000) is greater than the CTV deductible (\$49,500) which results in a CTV indemnity of \$96,250. After adding up both (FFT and CTV) indemnities and subtracting the premium (FFT, CTV), the net indemnity is \$214,100.

At this point some clarification is needed, the CTV endorsement uses two different tree references prices to calculate an indemnity, *the minimum reference price is used to estimate the indemnity when the damage is equal to 100% meaning that the tree is severely damaged but it can be rehabilitated. The maximum reference price is used when the tree is destroyed (dead), no rehabilitation is possible and the tree has to be replaced.* Therefore, that is an important consideration when looking at this endorsement.

In this example, when trees are fully damaged (100% damage), the CTV endorsement uses the minimum tree reference value (\$41/tree stage II, \$66/tree stage III) to estimate the CTV damage value. When avocado trees

are destroyed, the CTV endorsement uses the maximum tree reference value (\$50/tree stage II, \$115/tree stage III) to estimate the CTV damage value.

### **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 or 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 such as policy endorsements. 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**

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<https://www.rma.usda.gov/-/media/RMAweb/Policies/Florida-Fruit-Tree/2020/Florida-Fruit-Tree-Crop-Provisions-20-0014.ashx>

USDA/RMA (2018). *Florida Fruit Tree CTV Endorsement*. Retrieved from

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