MyIPM for Vegetables

Commercial vegetable producers have a new tool to assist with integrated pest management (IPM) of diseases and insects in vegetables. MyIPM for Vegetables is the newest resource in the MyIPM app series (<u>https://myipm.app/</u>) for smartphones and smart devices. It currently includes modules for diseases and insects of cucurbits and tomatoes; modules for diseases and insects of additional vegetable crops are planned.

Modules contain images and descriptions of diseases and insects; information on available chemical, biological, and cultural management methods for each disease/insect; and tables of labeled fungicides and insecticides that include active ingredients, product names, FRAC/IRAC codes, efficacy ratings, application rates, preharvest intervals (PHIs), and restrictedentry intervals (REIs). Links to additional resources may also be included.

App content is focused on commercial vegetable production in the southeastern U.S., but users outside this area and home gardeners may also find information in the app useful. MyIPM for Vegetables content development was led by vegetable entomology and plant pathology specialists from universities within the southeastern U.S. who are part of the Southeastern Vegetable Extension Workers (SEVEW). The SEVEW are also responsible for the popular *Southeast U.S. Vegetable Crop Handbook* (www.vegcrophandbook.com) that has been a key resource for commercial vegetable producers in the southeastern U.S. for over 20 years. Author and image credits for specific disease or insect profiles and pictures are available at https://myipm.app/vegetables/. MyIPM for Vegetables is not intended to replace product labels. It is a tool to help vegetable producers make informed IPM decisions. Pesticide users should always read and follow label instructions prior to use. Product labels may change. Product rates may differ depending on the site of application (e.g., field or greenhouse) or type of application (e.g., foliar-applied or soil-applied). Check product labels for additional instructions, precautions, and/or restrictions not listed in the app. Also, check the state registration status of products prior to purchase and use; products may not be registered for use in all states.

MyIPM for Vegetables is free to download for Apple (Apple Store) and Android (Google Play) devices. Content is downloaded directly to phones/devices; an internet connection or cell signal is not required to access content once it is downloaded. Updates, however, do require an internet connection or cell signal, and notifications will pop up when updates for downloaded modules and the appropriate internet/cell connection is available.

The MyIPM series began with MyIPM Fruit & Nut, which was originally developed by Clemson University in 2012 and focused on peaches and strawberries; the app has since expanded to include other small fruits, tree fruits, and pecans. Other apps in the series include MyIPM Row Crops and MyIPM Hawaii. The Southern IPM Center maintains the databases for the MyIPM series apps.



Scan to visit the MyIPM for Vegetables website.

Acknowledgment

This work is supported by the Southern IPM Center (Project S23-043) as part of the USDA National Institute of Food and Agriculture Crop Protection and Pest Management Regional Coordination Program (Agreement No. 2022-70006-38002).

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MyIPM for Vegetables How-To Guide

Step 1: Search your app store (Apple Store shown) for "MyIPM for Vegetables" and download the app to your smartphone or smart device.

Step 2: Locate the MyIPM for Vegetables app on your smart device screen and tap the icon to open the app.



Step 3B: A download notification will appear to indicate the size of the data to be downloaded. Tap "Download" to start the download.





Step 3C: A second download notification will appear. Tap "Okay." *Note: It may take a few minutes for audio and image files to download completely.*



Step 3A: Select the module(s) you want to download. Then tap "Update" at the bottom of the screen.



Step 4: After downloading the desired module(s), locate and select the module you want to open.



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Select

Step 5: Once a desired module is open, swipe left or right to view images of the diseases/insects or tap "Select" for a list of the diseases/insects in the app.



Step 6C: The "Summary" provides a brief overview and description of the symptoms, damage, and management of the selected disease or insect.



Step 6A: Tap "Overview/Gallery/More" to access the disease or insect summary, image gallery, and additional information.

Step 6B: Select "Summary," "Gallery," or "More" to access the overview, images, and additional information, respectively.

6:22 AM

Downy Mildew

OVERVIEW Overview: Downy mildew is a potentially devastating disease of cucurbit crops in the Southeastern and Eastern U.S. The downy mildew pathogen requires a living host to survive and typically does not survive in areas where

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	Downy Mildew	
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	Active Ingredients	
	Trade Names	
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Step 6D: Short, 1- to 3-minute audio recordings may also be available. These are accessible from the bottom of the "Summary" page.



freezing temperatures do not allow for the survival of cucurbit hosts through the winter. It spreads each year from areas where it can overwinter to areas where it does not overwinter on air currents. Disease development is favored by cool/moderate temperatures and high humidity and moisture. Symptoms and Damage: Yellow, angular lesions on the upper surface of leaves are common on most cucurbit crops. Gray to purple pathogen growth develops and is often visible without magnification as dark-colored patches on ned underside of leaves. Downy mildew can reduce yields and lead to foliar and plant death. Management: Several management practices,

Including the use of host resistance, cultural naratiles and funcientes should be used as nart

Step 6E: The "Gallery" contains images of disease signs and symptoms or insect stages and damage. Users can tap an image to enlarge it and can also zoom in on an image.



Step 6F: The "More" page provides additional information on the disease or insect, including more detailed descriptions of signs and symptoms or insects and damage and information about the disease cycle or insect life cycle (accessible by clicking on the **pathogen** or insect name), information about chemical and non-chemical management, and information about known pathogen or insect resistance issues to chemicals.



Step 7: Select "Active Ingredients" on the disease or insect home page to view a list of active ingredients labeled for use against the disease or insect. Swipe left on the table to access columns that display the **FRAC/IRAC code(s)**, **FRAC/IRAC risk**, and **efficacy rating**. The efficacy rating scale is: ++++ (excellent); ++++ (very good); +++ (good); ++ (fair); + (poor); and ? (unknown or no data). *Hint: Tap on a column name to sort the table by the entries in that column*.

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K Back	Cucurbits	Select
	Downy Mildew	
01	verview/Gallery/Mo	re
	Active Ingredients	
	Trade Names	
N	on-Chemical Contr	ol
	GENERAL	
P	esticide Resistanc	e
	About MyIPM	
	Feedback	

Cucurbits Downy	Mildew	Select
Conventional	Organ	ic
Active Ingredien	FRAC Code	FRAC Risk
chlorothalonil	M05	Low
chlorothalonil; cymoxanil	M05; 27	Low-Medium
chlorothalonil; zoxamide	M05; 22	Low-Medium
copper hydroxide	M01	Low
copper hydroxide; mancozeb	M01; M03	Low
copper octanoate	M01	Low
copper oxychloride; copper hydroxide	M01; M01	Low
cyazofamid	21	Medium-High
cymoxanil	27	Low-Medium
cymoxanil; propamocarb	<mark>27</mark> ; 28	Low-Medium
dimethomorph; ametoctradin	40; 45	Low-Medium
ethaboxam	22	Low-Medium
fluazinam	29	Low
		Medium
fosetyl-Al		Low

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	llidew	Select
Conventional	Organic	
Active Ingredient	FRAC Risk	Efficacy
chlorothalonil	Low	+
chlorothalonil; cymoxanil	Low-Medium	?
chlorothalonil; zoxamide	Low-Medium	+
copper hydroxide	Low	+
copper hydroxide; mancozeb	Low	+
copper octanoate	Low	+
copper oxychloride; copper hydroxide	Low	+
cyazofamid	Medium-High	++
cymoxanil	Low-Medium	+
cymoxanil; propamocarb	Low-Medium	?
dimethomorph; ametoctradin	Low-Medium	++
ethaboxam	Low-Medium	++
fluazinam	Low	++
	Medium	+
fosetyl-Al	Low	+

Step 8: Select "Trade Names" on the disease or insect home page to view a list of trade name products labeled for use against the disease or insect. Swipe left on the table to access columns that display the **active ingredient(s)**, **FRAC/IRAC code(s)**, **efficacy rating**, **rate/acre**, reentry interval (**REI**), preharvest interval (**PHI**), and **application limits**. The efficacy rating scale is: +++++ (excellent); ++++ (very good); +++ (good); ++ (fair); + (poor); and ? (unknown or no data). Switch between conventional and organic (OMRI-listed) products by tapping on "Conventional" or "Organic" at the top of the table. *Hint: Tap on a column name to sort the table by the entries in that column. Note: Additional products labeled for use against a particular disease or insect may also be available.*



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Cucurbits Do	wny Mildew	Select
Conventional	0	rganic
Trade Name	Activ	ve Ingredient
Bravo Weather Stik	cł	nlorothalonil
Curzate		cymoxanil
Cymbol Advance	chlorot	halonil; cymoxanil
Cymbol Balance	cymoxa	nil; propamocarb
Echo 720	cł	nlorothalonil
Elumin		ethaboxam
Gavel 75DF	manc	ozeb; zoxamide
Kocide 3000-O	cop	per hydroxide
Linebacker WDG		fosetyl-Al
ManKocide	copper hy	/droxide; mancozeb
Orondis Opti		orolin; chlorothalonil
Orondis Ultra	mandiprop	amid; oxathiapiproli
Presidio		
Previcur Flex	pi	ropamocarb
Ranman 400SC		·,

Cucurbits Down	y Mildew	Select
Conventional	Organi	c
Trade Name	FRAC Code	Efficacy
Bravo Weather Stik	M5	+
Curzate	27	+
Cymbol Advance	M5; 27	?
Cymbol Balance	27 ; 28	?
Echo 720	M5	+
Elumin	22	++
Gavel 75DF	M3; 22	+
Kocide 3000-O	M1	+
Linebacker WDG	P7	+
ManKocide	M1; M3	+
Orondis Opti	49; M5	+++
Orondis Ultra	40; 49	+++
Presidio		+
Previcur Flex	28	++
Ranman 400SC		

Verizon 🗢 6:6 Cucurbits Downy	53 AM © ∕ Mildew	Select
Conventional	Organic	2
Trade Name	Rate/Acre	PHI/days
Bravo Weather Stik	1.5 - 2.0 pt	0.0
Curzate	3.2 - 5 oz	3.0
Cymbol Advance	1.9 - 3.0 pt	3.0
Cymbol Balance	28.5 fl oz	3.0
Echo 720	1.5 - 2 pt	0.0
Elumin	8 fl oz	2.0
Gavel 75DF	1.5 - 2.0 lb	5.0
Kocide 3000-O	0.5 - 1.25 lb	0.0
Linebacker WDG	2.0 - 5.0 lb	0.5
ManKocide	2 - 3 lb	5.0
Orondis Opti	1.75 - 2.5 pt	0.0
Orondis Ultra	5.5 - 8.0 fl oz	0.0
Presidio	4 fl oz	2.0
Previcur Flex	1.2 pt	2.0
Ranman 400SC	270 11 02	0.0

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Cucurbits Dov	wny Mildew Select
Conventional	Organic
Trade Name	Active Ingredient
Bravo Weather Stik	chlorothalonil
Curzate	cymoxanil
Cymbol Advance	chlorothalonil; cymoxani
Cymbol Balance	cymoxanil; propamocarb
Echo 720	chlorothalonil
Elumin	ethaboxam
Gavel 75DF	mancozeb; zoxamide
Kocide 3000-O	copper hydroxide
Linebacker WDG	fosetyl-Al
ManKocide	copper hydroxide; mancoz
Orondis Opti	oxathiapiprolin; chlorothalo
Orondis Ultra	mandipropamid; oxathiapipr
Presidio	
Previcur Flex	propamocarb
Ranman 400SC	



Updates

When an update to one of the downloaded modules is available, a notification will appear when the app is opened and an internet connection or cellular signal is established. Users can choose to "Update Now" or "Later." If problems occur, return to the home screen, remove the module (uncheck and tap "Update"), and then add the module (check and tap "Update"). Additional notifications will appear to indicate the size of the new download and, after tapping "Download," to indicate that downloading is in progress and may take a few minutes to complete.



Useful Tips

Tip 1: Use the "Select" button in the top right corner of a module home screen to view a list of diseases or insects in the module. Tap the desired disease or insect name to quickly open a disease or insect profile (rather than swiping left or right through images). The "Select" button can be used from many screens within a module to switch between diseases or insects. For example, if you use the "Select" button from the downy mildew trade name list to select the disease gummy stem blight, the trade name list for gummy stem blight will be displayed.

III Verizon 6:52 AM < Back Cucurbits	Ill Verizon 6:53 AM < Cucurbits Downy Mildew	Il Verizon
Downy Mildew	Conventional Organic	Anthracnose
	- game	Bacterial Fruit Blotch
	Trade Name Active Ingredient	Bacterial Wilt
The Physics of the State		Choanephora Fruit & Flower Rot
	Bravo Weather Stik chlorothalonil	Cottony Leak
the strategic by	Curzate cymoxanil	Cucurbit Leaf Crumple
a manage and	Cymbol Advance chlorothalonil; cymoxanil	
Overview/Gallery/More	Cymbol Balance cymoxanil; propamocarb	Downy Mildew
Chemical Control	Echo 720 chlorothalonil	Gummy Stem Blight
	Elumin ethaboxam	Phytophthora Blight
	Gavel 75DF mancozeb; zoxamide	Powdory Mildow
Trade Names	Kocide 3000-O copper hydroxide	Fowdery Mildew
Non-Chemical Control	Linebacker WDG fosetyl-Al	
GENERAL	ManKocide copper hydroxide; mancozeb	
Poeticida Poetictanca	Orondis Opti oxathiapiprolin; chlorothalonil	
	Orondis Ultra mandipropamid; oxathiapiproli	
About MyIPM	Presidio fluopicolide	
Feedback	Previcur Flex propamocarb	
	Ranman 400SC cyazofamid	

Tip 2: Use the search bar on the MyIPM for Vegetables home screen to search for an active ingredient or product. Search results list all trade name products in the app, with the active ingredient(s) in parentheses, along with the crop(s) and the disease(s)/insect(s) for which the product is labeled and the corresponding product efficacy rating and application rate. Results include both single- and multi-active ingredient products if the searched active ingredient is one of the active ingredients in the product. Tap on the desired disease or insect name under the desired product to go to the active ingredient table for the chosen disease or insect.

5:58 AM

Image: Image:

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		MyIPM Vegetables		Ģ			MyIPM Veg	etables
Q	Enter act	ive ingredient or trade	e name			L	Q Chlorothal	ionil
							Bravo Weath	ier Stik
		•					Cucurbits	
		inte .					Downy Milde	∋w (+; 1.
		Rent					Gummy Ster	m Blight
							Tomato	
		Cucurbits (Disease)				Anthracnose	e (++; 2.
		Sucurbits (Disease)				Early Blight	(++: 1.3)
		Cucurbits (Insect)						
							Gray Leaf Sp	oot (++;
		Iomato (Disease)					Gray Mold (-	++; 1.37
		Tomato (Insect)						
							Gray Mold (-	++; 2.0-
							Late Blight (+++; 1.3
							Late Blight (+++; 2.0
							Bravo ZN (cł	nloroth

Q Chlorothalonil	8
Bravo Weather Stik (chlorothalonil)	
oucurbits	
Downy Mildew (+; 1.5 - 2.0 pt)	>
Gummy Stem Blight (none; 1.5 - 2.0 pt)	>
Tomato	
Anthracnose (++; 2.0-2.75 pt)	>
Early Blight (++; 1.37-2.0 pt)	>
Gray Leaf Spot (++; 1.37-2.0 pt)	>
Gray Mold (++; 1.37-2.0 pt)	>
Gray Mold (++; 2.0-2.75 pt)	>
Late Blight (+++; 1.37-2.0 pt)	>
Late Blight (+++; 2.0-2.75 pt)	>
Bravo ZN (chlorothalonil)	
Tomato	
Gray Mold (++; 2.0-2.75 pt)	>

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Chlorothalonil	8
Orondis Opti (oxathiapiprolin; chlorothalonil)	
Cucurbits	
Downy Mildew (+++; 1.7 - 2.5 pt)	>
Tomato	
Late Blight (+++++; 1.75-2.5 pt)	>
Cucurbits Anthracnose (+; 3.2 pt) Tomato	>
Anthracnose (++++; 1.6 pt)	>
Early Blight (+++++; 1.6 pt)	>
Early Blight (+++++; 1.6 pt)	>
Early Blight (+++++; 1.6 pt) Late Blight (++++; 1.6 pt) Ridomil Gold Bravo (mefenoxa chlorothalonil) Tomato	> >