

MELCAST for Melon Producers

2014 Missouri Update

MELCAST is a spray-advisory program used to notify growers how to control *Alternaria* (a fungus) leaf blight, anthracnose (fungus) and gummy stem blight disease on watermelon and cantaloupe.



Non-sprayed watermelon plants with foliar disease symptoms.

The Lincoln University Cooperative Extension (LUCE) Plant Pathology program has expanded the use of MELCAST. MELCAST is a weather-based melon disease forecasting program for watermelon and cantaloupe growers at five sites in Missouri. For 2014, the locations selected to access the weather-based data support system are Clarkton, Fortuna (Central Missouri Produce Auction), Hornersville, Jefferson City (LUCE's George Washington Carver

Farm) and Sikeston.

The North Central Integrated Pest Management Center (NC-IPM) funded MELCAST as part of a project on the integrated disease management of watermelon in Missouri. LUCE also paid for MELCAST in previous years so that farmers could access the data at no charge.

This year, the research project at Carver Farm will continue comparing fungicide spray plans: MELCAST-based vs. calendar-based. It will also assess different mulching systems (black plastic vs. trimmed vetch-rye mix mulch) and alternating various fungicide combinations.

MELCAST is a spray-advisory program used to notify growers how to control *Alternaria* (a fungus) leaf blight, anthracnose (fungus) and gummy stem blight disease on watermelon and cantaloupe. It is not applicable to any other diseases, such as bacterial fruit blotch or powdery mildew. For more than 10 years, the system has



Spenser Epple spraying the fungicide chlorothalonil on the variety 'Crimson Sweet' grown on black plastic mulch.

been tested in different parts of the country. This method has helped farmers to save 1-2 sprays of fungicide per season.

In simple terms, MELCAST advises farmers to start the first spray when the vines touch within a row. Growers are advised to continue their spray plans based on the environmental favorability in that specific location. If you live within a 20-25 miles range of the five locations in Missouri (Jefferson City, Clarkton, Fortuna, Kennett and Hornersville), you will be able to get a value, which is referred to as an Environmental Favorability Index (EFI).

An EFI Value is a value from 1-10 based on many years of experimentation at Purdue University. Using these studies, models have been created that assign a daily value for a given location, at a particular time, based on the prevailing weather. The scale runs from 1 (not favorable to disease development) to 10 (highly favorable to disease development). Growers sum up these EFI values over a certain number of days to make an informed decision about when to spray.



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MELCAST used for these plots at Carver Farm.

1. Start to spray at or before the vines touch one another, within a row. Record the EFI value for the day the fungicide was sprayed.
2. Calculate the threshold for the next spray by adding 20 (for cantaloupe) or 35 (for watermelon) EFI values to what was recorded in step 1.
3. Make your next fungicide application based on the 20 or 35 EFI cumulative (added together) values. If the thresholds are not reached within 14 days after step 2, then spray your field.
4. Recalculate the EFI value based on the thresholds, and continue the spray plan until the end of the season. Keep in mind the **14-day interval** if the thresholds are not met.

To learn more about using the MELCAST system and how to access the data, please contact one of the following experts:

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For a total list of fungicides, refer to the Midwest Vegetable Production Guide 2014. You can either buy the book or download the electronic version from <http://www.btny.purdue.edu/pubs/id/id-56/> or mwveguide.org. To read more about MELCAST and other disease management topics on horticultural crops, visit the following websites: <http://www.extension.purdue.edu/extmedia/BP/BP-67-W.pdf> and <http://www.btny.purdue.edu/pubs/vegcrop/VCH2013/VCH563.pdf>. ■

Select a Station Here:

MO-JEFFERSON CITY ▼



Website: <http://btny.agriculture.purdue.edu/melcast>

State Summary for MO Muskmelon EFI Daily Cumulative Values

Location	06-08	06-07	06-06	06-05	06-04	06-03	06-02
CLARKTON	38	35	31	27	26	26	26
FORTUNA	46	43	37	34	28	26	26
HORNERVILLE	45	42	38	34	33	33	32
JEFFERSON CITY	53	50	43	39	31	29	29
SIKESTON	42	39	36	33	28	28	27



Watermelon EFI Daily Cumulative Values

Location	06-08	06-07	06-06	06-05	06-04	06-03	06-02
CLARKTON	86	80	71	63	59	59	59
FORTUNA	83	81	72	67	59	52	50
HORNERVILLE	102	96	87	78	73	73	69
JEFFERSON CITY	90	88	78	72	63	56	54
SIKESTON	99	94	86	78	69	66	61

