

# Botany and Plant Pathology

## MELCAST

### Foliar Disease Control Using MELCAST



**Daniel S. Egel**  
Extension Plant  
Pathologist  
egel@purdue.edu  
(812) 886-0198

**Richard Latin**  
Professor  
rlatin@purdue.edu



*Proper disease management is an important step toward healthy watermelon vines such as those shown here.*

#### What Is MELCAST?

**MELCAST is a weather-based spray advisory program for the control of foliar diseases of muskmelon and watermelon.**

The MELCAST program was developed by Dr. Richard Latin, Department of Botany and Plant Pathology, Purdue University.

The primary foliar diseases of muskmelon and watermelon can be managed with information provided by MELCAST. These diseases are: *Alternaria* leaf blight, gummy stem blight and anthracnose.

#### Why Use MELCAST?

With MELCAST, growers **save money** on fungicide applications and **get better disease control**. In most years, MELCAST will save growers two to three fungicide applications per season. In all years, MELCAST recommends fungicide applications when they are most needed for disease control.

MELCAST can be used to assess the risk of disease activity. The severity of the foliar diseases of muskmelon and watermelon mentioned above are correlated with weather. The MELCAST system calculates the weather-related risk for you and converts the data into Environmental Favorability Index (EFI) values. The more rapidly EFI values accumulate, the more likely disease will occur and the more frequently fungicides will have to be applied.

A wide variety of fungicides have been tested for use with MELCAST. Protectant fungicides include chlorothalonil products (e.g., Agronil, Bravo, Echo, Equus, Terranil) and mancozeb products (e.g., Dithane, Manzate, Penncozeb). Systemic fungicides include the strobilurin fungicide Quadris.

Purdue Extension

**Knowledge to Go**

1-888-EXT-INFO



*MELCAST (MELon disease foreCASTer) allows muskmelon and watermelon growers to optimize fungicide applications based on weather information.*

### **To Use MELCAST, You Need:**

**A phone or a computer** — Many growers find it convenient to call the toll-free phone number to find out the daily EFI values. Other growers prefer to go online to look up the EFI values. While EFI values are posted Monday through Friday on the toll-free phone number, EFI values are posted daily on the Web site.

The toll-free phone number for MELCAST during the growing season is (800) 939-1604. The URL for Internet access to MELCAST is <http://btny.agriculture.purdue.edu/melcast/>

**A MELCAST record book** — This pocket-sized book makes it easy to keep track of the EFI values. Also included in the book is a description of the MELCAST system and a listing of the MELCAST weather locations nearest you.

Contact Dan Egel (e-mail and phone number at the beginning of this article) for more current information.

### **How Do You Use MELCAST?**

**Using MELCAST is easy.** Instead of applying fungicides every seven days, use the simple steps below. (Also see the example on the next page.)

**Apply initial fungicide spray** at or before vine touch within a row.

**Check the EFI value** for the day the fungicide was applied.

**Calculate the threshold** for the next spray by adding 20 (muskmelon) or 35 (watermelon) to the EFI value in step 2.

**Apply the next fungicide** application 14 days after the first, or sooner if the EFI threshold has been reached.

**Check the EFI values** on the day you make your next fungicide application and re-calculate the threshold for the next application.

Use MELCAST as a guide to schedule your fungicide applications, but also use common sense. If severe disease pressure exists because of inadequate crop rotation, disease introduced on transplants, etc., return to a 7-day fungicide schedule.

MELCAST is available for most muskmelon- and watermelon-growing locations within Indiana.

Contact Dan Egel for more information about the availability of MELCAST in your area.

The costs of this publication were defrayed in part by a grant from the Strategic Agricultural Initiative Program Grants EPA Region 5 and administered by the American Farmland Trust.

**Figure 1:** The example shown below for watermelon appears as it would in a MELCAST record book. A muskmelon example would be similar, except that the EFI threshold is 20 rather than 35. A muskmelon example is given in the back of each MELCAST record book.

After the first fungicide application, call the 800 number and write the EFI values (7) in the EFI column and 0 in the spray counter column. The 35 EFI threshold will be reached when the spray counter reads 35 and the EFI column reads 42 (7 + 35 = 42). Note that EFI values continue to increase over the season.

Date	EFI	Irrigation Points	Spray Counter	Fungicide amounts and comments
16-May				
17-May				
18-May				
19-May	7		0	Vines touch, Bravo Ultrex 2 lb./A.
20-May				
21-May				
22-May	12		5	
23-May				
24-May	19		12	
25-May				
26-May	25		18	
27-May	29		22	
28-May	34		27	
29-May	38		31	
30-May	40		33	Dithane M-45 2 lb./A.

Although the spray counter is not yet 35, fungicide was applied because a rain was expected on 31 May. MELCAST will give better results if every effort is made not to exceed the 35 EFI threshold.

Dithane M-45 2 lb./A.

Date	EFI	Irrigation Points	Spray Counter	Fungicide amounts and comments
31-May	44		4	
1-Jun	46			
2-Jun	46			
3-Jun	47			
4-Jun				
5-Jun	49			
6-Jun	52			
7-Jun				
8-Jun	53			
9-Jun	55	2		
10-Jun	60			
11-Jun	63		23	
12-Jun	63		23	
13-Jun	64		24	Bravo Ultrex 2 lb./A.
14-Jun	64		0	

Note that the EFI values are not written for each date. It isn't necessary to check the EFI values every day. Check more frequently during periods of frequent dews or rain and when the EFI threshold is near.

No EFI values accumulated for this date. However, when an overhead irrigation takes place, 2 EFI values are added.

Fungicide was applied when the spray counter was 24 EFI values, because 14 days passed since the last application. Apply fungicides every 14 days regardless of EFI values.

Bravo Ultrex 2 lb./A.

The information given herein is supplied with the understanding that no discrimination is intended and no endorsement by the Purdue University Cooperative Extension Service is implied.

Insect, disease, and weed control recommendations in the publication are valid only for 2004. If registration for any of the chemicals suggested is changed during the year since the time of publication, we will inform all area and county Extension workers. If in doubt about the use of any chemical, check with your Extension educator or chemical company representative. The authors and Purdue University Cooperative Extension Service assume no liability for omission or for use or misuse of information contained herein.

**PURDUE**  
UNIVERSITY



BP-67

NEW 3/04

It is the policy of the Purdue University Cooperative Extension Service, David C. Petritz, Director, that all persons shall have equal opportunity and access to the programs and facilities without regard to race, color, sex, religion, national origin, age, marital status, parental status, sexual orientation, or disability. Purdue University is an Affirmative Action institution. This material may be available in alternative formats.

1-888-EXT-INFO

<http://www.ces.purdue.edu/extmedia>