

**Cucurbit DOWNY Mildew Fungicide Recommendations 2011**  
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This year, cucurbit downy mildew was first confirmed in North Carolina on June 17<sup>th</sup>. So far, it has been identified on cucumber in Alamance, Hertford and Sampson Counties, however it's been found in Charleston County, SC for a few weeks now. See the Cucurbit Downy Mildew Forecast at <http://cdm.ipmpipe.org/>. Growers, agents, homeowners, and other interested people can sign up to receive e-mail or text message alerts when new outbreaks of downy mildew are reported to the system. Follow the CDM Alert System link on the left-hand side of the page.

Fungicides will be required to manage yield losses from cucurbit downy mildew. Two different programs should be utilized this year; the first program is for prevention and should be followed before downy mildew is found in your county. The second program should be adopted after downy mildew has been found in your county or field, and involves more effective, but expensive, products. Refer to the tables below for explanations on these 2 programs. Additional information can be found on p.196 of the SE U.S. 2011 Vegetable Crop Handbook at <http://www.thegrower.com/south-east-vegetableguide>.

Growers should consider the following in developing a spray program to manage cucurbit downy mildew, caused by *Pseudoperonospora cubensis*: Ranking of efficacy for fungicides to control downy mildew Presidio = 4.5; Ranman = 4.5; Tanos = 3.5; Previcur Flex = 3.5; Gavel and mancozeb = 2.5; Bravo = 2.

Presidio, Ranman and Previcur Flex are best tank mixed with a protectant such as mancozeb or chlorothalonil. Highly effective products tend to be expensive. The Presidio label requires this product to be tank mixed with another fungicide with a different mode of action if applied as a foliar spray-chlorothalonil or mancozeb are the best options. One important consideration is that products have different preharvest intervals (PHI). A product with a PHI greater than 1 day such as mancozeb (PHI = 5 days) cannot be used when growers harvest 2 or more times per week. Another important consideration is fungicide resistance management, hence growers should alternate sprays with fungicides in different groups so that the pathogen does not develop insensitivity to the chemical. To date, Previcur Flex has performed modest in NC trials but has failed in Georgia trials possibly due to resistance.

<b>Trade name</b>	<b>Efficacy rank*</b>	<b>Active ingredient(s)</b>	<b>Fungicide group</b>	<b>PHI</b>
Presidio	4.5	fluopicolide	43	2 day
Ranman**	4.5	cyazofamid	21	0 day
Tanos	3.5	famoxadone+cymoxanil	11+27	3 day
Previcur flex	3.5	propamocarb	28	2 day
Gavel	2.5	zoxamide+ mancozeb	22+M	5 day
Dithane/Manzate/Penncozeb	2.5	mancozeb	M	5 day
Bravo/Equus	2.0	chlorothalonil	M	0 day

\* 5 = excellent control, 1 = poor control.

\*\* When disease pressure is severe, an organosilicone surfactant should be tank mixed with Ranman.

If spraying as a **\*PREVENTATIVE\*** when disease has not been identified in the county, use either:

- Tanos + mancozeb or chlorothalonil,
- OR
- Previcur Flex + mancozeb or chlorothalonil,
- OR
- Gavel

on a 7 day schedule, rotating among them when possible.

Once downy mildew has been identified in the county or field, use either:

- Presidio + mancozeb or chlorothalonil,
- OR
- Ranman + mancozeb or chlorothalonil

on a 7 day schedule, rotating every other week with one of the above PREVENTATIVE combinations.

ADDITIONAL NOTES: The lower use rates are effective when tank mixed with a protectant. Under high pressure or high disease risk, growers should adopt higher use rates (e.g. up to 4 oz for Presidio and 2.75 fl oz for Ranman). SPECIAL FOR WATERMELONS: Chlorothalonil has been known to cause some sun scald and other issues when applied to nearly mature watermelon fruit. Hence, chlorothalonil is not recommended as a tank mix partner for sprays on watermelon during fruit development.

### **Cucurbit POWDERY Mildew Fungicide Recommendations 2011**

The best products for controlling powdery mildew on cucurbits are:

<b>Trade name</b>	<b>Efficacy rank*</b>	<b>Active ingredient(s)</b>	<b>Fungicide group</b>	<b>PHI</b>
Quintec	5.0	quinoxifen	13	3 day
Procure	5.0	triflumizole	3	0 day
Flint	4.0	trifloxystrobin	11	0 day

These products can be used in a spray program in combination with the above recommended downy mildew products for controlling both powdery and downy mildew. Since the downy and powdery mildew pathogens are not closely related, fungicides that are effective against downy mildew do not have very good control efficacy against powdery mildew, and vice versa.