



## Virginia Cucurbit Disease Update

**Cucurbit powdery mildew (CPM)** has reported on several cucurbit crops in Virginia. This is a little ahead of schedule for this disease to be present, however, this is not surprising considering our mild winter and spring. Symptoms of CPM infection are pretty evident (Figure 1) and starts with initial infection points generally on the upper surface of the leaves. Sparse, white fungal growth can be observed in 'patches' on the leaves. As CPM progresses, patches will grow and 'join' together to cover the entire upper surface of the leaves (Figure 2). CPM may also be observed on stems and lower leaf surfaces. In general, CPM is most damaging on summer and winter squash, pumpkin, cantaloupe and to a lesser extent on watermelon and cucumber. Infection by CPM earlier in the growing season can lead to premature defoliation and substantial yield loss.

Control of CPM should be accomplished via an integrated management program. The most effective step is to utilize CPM-resistant cultivars when available and practical. If cucurbits are being planted continuously there should distance between older and newer plantings as the older planting may serve as a source of inoculum for the newer plantings. CPM requires little moisture to infect and develop on susceptible cucurbit plants, however, minimizing leaf moisture may reduce disease severity.

Fungicide applications will reduce the amount of CPM. These programs are most effective when preventative applications are made prior to disease onset. Fungicides differ in which cucurbit crops they are labeled for use on (particularly Quintec and Luna Experience), so be sure to check the label prior to application. Of the currently labeled products, we have achieved best results with Quintec (**not labeled for use on summer squash and cucumber**) and Luna Experience (**watermelon only**). Moderate control of CPM can be accomplished using programs including: Procure, Rally, Folicur (or generics), Inspire Super, and Pristine. CPM-specific materials such as those listed above should be tank mixed or rotated with protectants such as chlorothalonil, mancozeb, or sulfur. Programs containing OMRI-approved formulations of copper and sulfur products are best bets for organic producers. Additional OMRI-approved materials that offer some suppression of CPM based on our research trials are M-Pede, Regalia, and Serenade Max. Regardless of material used or operation size, it is imperative that applications targeting CPM are applied in a manner that covers the entire crop foliage (recommended 40 GPA or more).

**Cucurbit downy mildew (CDM)** has once again been reported in a greenhouse cucumber crop in Johnston County, North Carolina. To keep track of where downy mildew has been reported please visit the following website: <http://cdm.ipmpipe.org/>

Cucurbit growers are urged to consider spraying preventative applications for downy mildew and thoroughly scout for the disease. Cucumber growers in particular are strongly recommended to initiate a downy mildew protection program. Growers near the outbreak are advised to be particularly diligent for scouting for CDM.

Over the past growing seasons, our research has found spray programs containing Ranman (2.75 floz/A) to offer the best protection from this disease. Presidio (4 floz/A) and Previcur Flex (1.2 pt/A) are also effective, however, we caution growers to not rely upon these materials solely as our trial results from 2009 – 2011 for Previcur Flex and 2011 for Presidio were not as favorable as in past seasons in our cucumber CDM trials. These materials should be rotated/tank mixed with protectant fungicides containing mancozeb or chlorothalonil. Fungicide applications should be initiated prior to disease development and applied on a 7-10 day schedule. Growers will realize optimal disease control when applications are made in at least 30 GPA of water and crop coverage is good. Cultural practices, such as avoiding low lying fields and excessive overhead irrigation, will also suppress disease development. There are some differences in the susceptibility of cucumber cultivars to CDM. If you have any questions along those lines, please feel free to contact us.

Cucurbit downy mildew can be recognized initially by small yellow spots on the upper surface of the lower leaves (Figure 3). When humidity is high (particularly early in the morning) blue/gray sporulation can be found on the underside of the leaves (Figure 4). If you have any further questions or think you have cucurbit downy mildew present in your field, please let us know. We will continue to update you on the progress of this disease. This is an unusually early finding of this disease this far north.

Thanks

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Figure 1.



Figure 2.



Figure 3.



Figure 4.

