UNIVERSITY OF MARYLAND EXTENSION

Greenhouse TPM/IPM Report

Central Maryland Research and Education Center
Ellicott City, Maryland

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Dahlia Powdery Mildew

By: Karen Rane

White growth of powdery mildew on dahlia leaves
Photo: T. Smith, University of Massachusetts

White or light gray fungal growth on leaf surfaces is evidence of this fungal disease. Heavily infected leaves may turn brown. Powdery mildew on dahlia is caused by *Golovinomyces cichoracearum* (formerly *Erysiphe cichoracearum*), which has a large host range encompassing many members of the plant families *Asteraceae, Cucurbitaceae, and Solanaceae.* Powdery mildew is favored by moderate temperatures (60s to high 80's F), lower light levels (somewhat shaded locations or lower leaves), and high humidity. In contrast to other fungal diseases, leaf wetness is not required for powdery mildew infection – in fact, wet leaves may actually inhibit disease development. The disease is most prevalent in spring and fall, but can develop any time conditions are favorable. Powdery mildew spreads through airborne spores and outbreaks can occur quickly if early infections on lower leaves go unnoticed. Cultural practices that help reduce powdery mildew include increasing plant spacing to help encourage air flow around the leaves and reduce humidity, and removing infected plant parts as soon as you see them (place infected leaves in a bag immediately after cutting to contain the spores). Some biological control products, such as those containing *Bacillus* or *Streptomyces*, may help protect leaves from powdery mildew when applied repeatedly according to label instructions before infection occurs. Fungicides containing myclobutanil, propiconazole, potassium bicarbonate, or azoxystrobin are some of the products labeled for powdery mildew control, and rotating between products with different modes of actions (FRAC codes) is important to minimize resistance development. Always read and follow all label instructions when applying fungicides -some products may damage flowers.

Dahlias - Preventing Problems

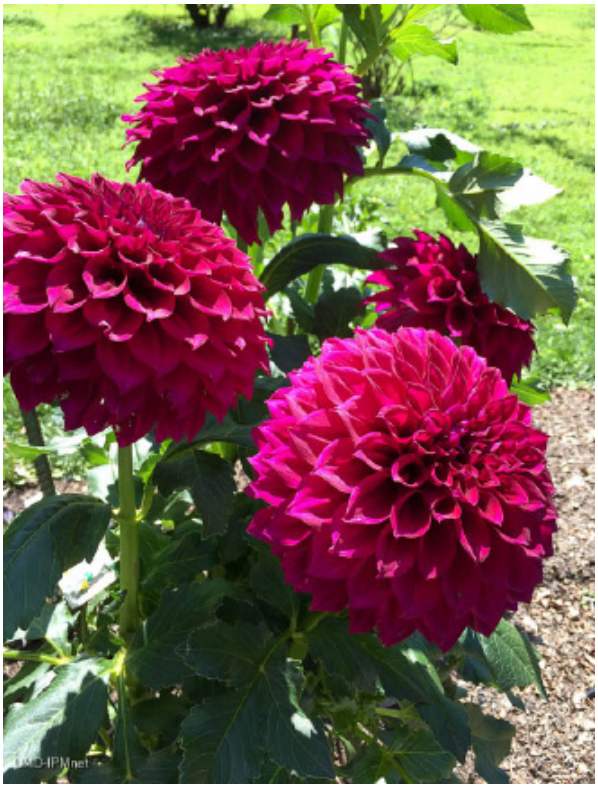
By: Stanton Gill

Three years ago, we took on a project with members of the dahlia society to see if we could grow quality dahlias with a combination of beneficial organisms release and systemic insecticides. Our target pests were corn borer, thrips, and aphids. We teamed up with Syngenta Company, Nancy Rechcigl, for this 2-year field trial. We started the season by applying a drench of Mainspring, a systemic insecticide. This was to control corn borer, aphids, and thrips feeding on dahlia foliage. This material lasts 10 weeks when applied as a soil drench at 8 oz/100 gallon rate.

We planted purple flash ornamental pepper plants between the dahlias to be a pollen source for a predator we released later in the season when the dahlia came into bloom. Next, we placed out sachets containing the predator mite, *Amblyseius cucumeris*, obtained from Koppert Company. We used sachets designed for outdoor use. These mites feed on early instar stages of thrips. We used the predators since Mainspring does carry in the foliage but doesn't carry up into the flowers. The mites establish themselves on the leaves and flowers and feed on the first two instars of thrips.

When the dahlias came into bloom we released the predator, minute pirate bugs, *Orius insidiosus*. This predator feeds on nymphs and adult stages of thrips. The females will lay eggs into the 'Purple Flash' banker plants. The nymphs feed on the pepper pollen then when they reach adult stages migrate up to the dahlia flowers to feed on adult thrips. We did this field trial for two years and it worked beautifully both years. If you would like a PDF copy of this project send us an email.

***Amblyseius cucumeris* sachets set out by the dahlia plants.**



Dahlias in thrips control trial.

Holly Plants That Are Excellent For Cut Stems

By: Stanton Gill

Recently, Sue Hunter, Heartwood Nursery, invited us up to visit her nursery in Felton, Pennsylvania. Sue runs a nursery that looks like an arboretum. During our visit, she showed us specimen hollies, a couple of which have good potential for commercial cut flower growers to use cut stems for fall-winter holiday sales.

One holly is *Ilex* x *koehneana* 'Wirt Winn'. New growth has burgundy/purple coloring. This holly is a versatile evergreen shrub with a naturally pyramidal form. It has dense, glossy, bright green foliage on mature foliage. It is a heavy producer of large, red berries It apparently takes well to shearing, making it an excellent topiary specimen or formal accent to entryways or gardens. Also, it could be great for hedges or screens. The only male pollinator for this holly is 'Ajax'.

***This Ilex* x *koehneana* 'Wirt Winn' is a specimen tree growing in Sue's nursery. The only male pollinator for this holly is 'Ajax'.**
Photo: Sue Hunter, Heartwood Nursery

There are several cultivars and they can be 6-25 feet tall and wide. These hybrid hollies are dioecious (separate male and female plants) so female plants need a male pollinator in order to bear fruit. One male holly can pollinate several female hollies. Koehne holly has a dense upright pyramidal shape with evergreen glossy spiny leaves and bright red berries.

Another holly that Sue Hunter showed us is *Ilex pedunculosa*. This holly is commonly called longstalk holly. Its native range is Japan, China, Taiwan. We had ever seen such an unusual holly. The flower is on a long stalk and individual berries form on these stalks. The foliage is not spiny and it looks like this holly would be deciduous, dropping foliage in winter. Sue tells us it retains its foliage in fall, but it turns a maroon red color. The berries that are on the stalks turn bright red. She says they cut branches for use in holiday decorations, and it holds up for several months. Sue did sell us several, along with a male pollinator. For females to bear fruit,

***A close-up of early Ilex pedunculosa* berries.**

***Ilex pedunculosa* is considered deer resistant.**

a male pollinator is needed. Plant up to 200’ of each other, one male for every three females to ensure that good pollination will take place. The really interesting thing is Sue says she has plenty of deer at her nursery, but they have never fed on this species. We will plant out 10 in Westminster and a couple at CMREC this summer and see how they fare.

Commercial Ornamental IPM Information
extension.umd.edu/ipm