



Greenhouse TPM/IPM Bi-Weekly Report
University of Maryland Cooperative Extension
Central Maryland Research and Education Center

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Pansy

After observing pansy crops in several greenhouses over the last 2 weeks it appears that generally the crop looks very good for the spring of 2009. Some people are moving pansies into the marketplace in late February and early March but this may be pushing the market slightly. There were still plenty of pansies left from last fall and many people have been overwintering these plants and planning for sales this spring. Low populations of melon aphids have been found in several of the greenhouses, especially on plants that were overwintered. Keep an eye on aphids because as it warms up populations will virtually explode.

The other problem we have seen when pansy plants are leftover in the greenhouse from the fall is that *Botrytis* tends to build up on these mature plants faster than newly started plants. At this time of year when the temperatures drop down during the night the colder air cannot hold as much moisture so there is plenty of water on the foliage and flowers, encouraging *Botrytis* problems. If you have mature pansy that are flowering make sure you keep removing old flowers regularly to reduce the incidence of *Botrytis* and make sure all of the HAF fans are running to keep the air circulating. We have also seen *Botrytis* showing up on New Guinea Impatiens at areas where foliage had cold damage injury.



Botrytis on pansy flower



Botrytis showing up on New Guinea impatiens at spots where there was some cold damage

Downy Mildew

We had our first sample of coleus with downy mildew submitted to the plant diagnostic lab last week – a bit earlier than we usually see the disease. The plants submitted were rooted cuttings, and they were showing the typical brownish lesions on the upper leaf surface, with gray sporulation on the undersides of the leaves (visible as a slight fuzziness when viewed with a hand lens). The downy mildew fungus, a *Peronospora* species, must survive on living plant tissue, and does not survive the winter in cold climates like Maryland. Sources of coleus downy mildew at this time of the year include infected stock plants that have been maintained in the greenhouse through the winter, or infected plants (even unrooted cuttings) shipped from warmer climates where the pathogen can survive year-round. This disease can “sneak up” on a grower, so it is critical to check coleus plants frequently for symptoms and signs of the disease. Growers may want to consider protectant fungicide applications before symptoms are seen, as insurance against the disease. Effective fungicides for protecting plants from infection include Stature DM, mancozeb, Aliette, Vital (potassium phosphate), and Alude. For more information on this disease, check out the article by Dr. Mary Hausbeck and Blair Harlan in the February 2009 issue of Michigan State University’s Greenhouse Alert <http://www.ipm.msu.edu/greenhouseAlert.htm>.



Downy mildew on the top side of coleus foliage



Downy mildew on the underside of coleus foliage

More on Gerberas

John Speaker is reporting that thrips are present in flowers. As temperatures start to warm up this month and flowering increases, monitor crops closely for thrips populations. John is also seeing *Myrothecium* on gerbera plants this week. *Myrothecium* attacks injured or stressed plant tissues and causes necrotic lesions with dark rings, often on the leaf margin. Green/black spores on white sporodochia are characteristic of this disease.

Aphids

Aphids are being found on assorted 6" rosemary and lavender in the greenhouse.

New Pesticides Available for the Greenhouse and Nursery Business

Kontos:

Bayer Company has introduced a new insecticide, Spirotetranat, sold under the brand name **Kontos** and distributed by OHP Company. This insecticide is a true systemic and is very similar to Judo which was released 3 or 4 years ago. Kontos has a label for greenhouse use, including application to **vegetable transplants, nurseries and interiorscapes**. Kontos can control most species of aphids. This might be a good material to try this spring for aphid control on pansy crops. It is also very effective in controlling whiteflies. Kontos contains an active ingredient with a mode of action classified as a Group 23 insecticide – lipid biosynthesis inhibitor (LBI). In studies to determine cross-resistance there have been no resistance detected.

Apply as a foliar or drench Application

Kontos can be applied as a foliar spray or applied as a soil drench. If you apply it as a foliar spray expect about 14 days of control. When applied as a soil drench the material is very water insoluble and will take 3 – 5 days to be uptaken by the plant. Once in the plant it will provide 30 - 40 days of aphid control. The rate is 1.7 oz in 100 gallons of water for use on herbaceous species and 1.7 – 3.4 oz/100 gallons of water for woody plants. Kontos works fairly well in controlling twospotted spider mites, but it is best applied when a population is small. It is presently being tested for efficacy in controlling thrips, fungus gnats and leafminers.

A different REI for greenhouse and nursery applications

If you apply as a foliar spray the material is listed as an eye irritant so there is a 24 hour REI. Applied as a soil drench the labels states “workers are allowed to enter the treated area if there will be no contact with anything that has been treated”.

Sucrashield:

Sucrashield is a new product that is based on a tobacco plant extract and is being marketed by Natural Forces. The active ingredients, sucrose octanoate esters, have an LD50 of 750 to 1500 ppm. This product is classified by EPA as non-toxic to people and is in the same category as soaps and oil insecticides. Sucrashield bears a WARNING on the label because of eye sensitivity. There is no information on the label about phytotoxicity, so caution is recommended until you have tested it yourself or until phytotoxicity test data is available.

Sucrashield is labeled for controlling aphids, mites, thrips, whiteflies and caterpillars on vegetables, and herbs in greenhouses and outdoors. This gives vegetable and herb growers one more option for insect control. It is labeled for use on ornamentals, flowers and bedding plants. Applications need to be repeated at 7 – 10 day intervals. This material is applied at a label rate of 104 oz (a little shy of a gallon) to 100 gallons of water for pests such as whitefly.

Ellepots

We talked about the alternative pots in the last issue. I was visiting Catoctin Mountain Growers and shot some pictures of the machinery that makes the ellepots.



Mealybug or Aphids on Sedums?

Sedums are tough plants that are well suited for use on green roofs. At first many growers thought that nothing really attacks sedum. Anytime you start mass producing a plant I guarantee some insect or disease will show up to spoil the party. We are starting to see some insect problems showing up on sedums. Don't worry, they are not major problems yet but they are being detected. One of the insects that is being noticed is the root aphid, *Pemphigus* spp. Root aphids can build up on the root system but it is very difficult to determine if they are stunting the plants or not. They produce white wax that covers the root system and is noticeable at the transplanting stage. We just conducted trials to see if we could kill these root aphids with hot water immersion treatments and it was successful at 115 °F and 120 °F. The other insect that is showing up on some sedums is a mealybug, *Phenacoccus solani* (solanum mealybug). In the literature it is reported that several species of armored scale damage sedums. If you notice a scale on your sedum plants let us know. **The photo shows root aphid on panicum.**



Powdery Mildew

John Speaker brought in samples of gerbera infected with powdery mildew. A host specific pathogen, the powdery mildew fungi infecting gerbera is not the same as fungi infecting other crops in the greenhouse. Powdery mildew has also been reported on catnip this week.

Control: Several good materials for powdery mildew control include: Armicab 100 (potassium bicarbonate), Camelot, Cleary's 3336, Compass, Domain, First Step (potassium bicarbonate), Kaligreen (Potassium bicarbonate).



Powdery mildew on gerbera foliage