

musc-mg ~ electronic advisory for muscadines from NC Cooperative Extension Service
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Seasonal observations and crop stage: We have been experiencing a fair amount of rainy weather in some areas in recent weeks and over 7 inches of rain fell in the Raleigh area just yesterday -- associated with Tropical Storm Alberto (the most flooding we've had since Hurricane Fran). Flood warnings have been issued for a number of areas today.

In general, the muscadine crop appears to be in good shape and on a normal schedule this year. Carlos variety (bronze muscadine) reached bloom in late May in Southeastern NC (last year we were 2 weeks later in reaching this stage!). On a recent muscadine vineyard visit in Duplin County (June 6th), we recorded shoot lengths in one vineyard that were as much as 3 feet in length, and also saw a fair amount of black rot which causes a circular brown leaf spot, and we also saw lesions on young stems and tendrils black rot seldom causes much damage in sprayed vineyards though. We did not see any angular leaf spot (faint, light yellow leaf spots) last week, but ALS can be an important disease to monitor at this time in the season (see Bill Clines comments on diseases later in this advisory).

In this advisory we are recommending: 1) that you assess your vine vigor -- 30 to 36 inches of shoot growth is the maximum desired per season; 2) take a tissue sample, or samples (depending on the number of cultivars --see next section); 3) that you scout your vineyard for insect and disease pests; and 4) assess the effectiveness of your spray programs for insects, diseases and weeds.

-1. Tissue testing in muscadines when to do this? It is important to take tissue samples every year to monitor the fertility of your muscadine vines. Right now (mid-June) is a good time to collect a tissue sample from your vineyard, and this gives us a real good idea about the nutrient status of the vines. **Nitrogen levels are a major concern in mid-June, and this tissue sample will help to establish whether a final N application is needed, or not.**

Some growers also take a tissue sample in mid-May (before bloom) to assess the need to apply boron. The tissue sample you take this week in June, or next week, can still help you assess the need for boron. If the tissue tests says you are low on boron, it is still o.k. to make an application of solubor, but recommendation states that it is best to spray 1 pound of solubor (20% boron) in 100 gallons of water/acre just before bloom. With later boron applications (in June), it may be best to apply only 1/2 pound of solubor (20% boron) per acre in 100 gallons of water, and then tissue test again after this application is made (give it 2 days before taking the next tissue sample) to check boron levels. Excessive boron causes plant injury. A boron deficiency may result in poor fruit set (and thus the reason for making this a pre-bloom spray).

A final tissue sample is recommended in early July.

-2. How to take tissue sample? Collect a double fist full of mature leaves (around 20 leaves) of each cultivar, and make sure you take a sample that is representative of the vineyard. The leaves should be

opposite flower/berry clusters. Don't pull leaf samples from shoots with no flowers or newly set berries. You should choose the third to fifth leaves back from the growing point, immediately twist off the petiole (leaf stalk), and place the leaves in a paper bag or envelope. Please note that tissue sampling of muscadines is just the opposite of bunch grapes...in bunch grapes leaf petioles are sampled, but in muscadines we discard the petioles and submit only the leaf blades to the NCDA & CS Agronomic Division.

-3. Where to send?

NCDA&CS AGRONOMIC DIVISION

Mailing address: 1040 MAIL SERVICE CENTER, RALEIGH NC 27699-1040

Physical address: 4300 REEDY CREEK RD., RALEIGH NC 27607-6465

Phone: (919) 733-2655

web information: <http://www.ncagr.com/agronomi/pwshome.htm>

Sampling paperwork and envelopes can be obtained at your county Extension Office. Send the samples to the NCDA Agronomic Division in Raleigh for analysis along with a \$5 fee per sample. The results are typically available via their website within 2 to 3 days.

Recommended nutrient levels are:

Element (unit)	Optimal Range
Nitrogen (%)	1.65-2.15 (you do not want levels about 3.0)
Phosphorus (%)	0.12-0.18
Potassium (%)	0.80-1.20
Calcium (%)	0.70-1.10
Magnesium (%)	0.15-0.25
Boron (ppm)	15-25
Copper (ppm)	5-10
Iron (ppm)	60-120
Manganese (ppm)	60-150
Molybdenum (ppm)	0.14-0.35
Zinc (ppm)	18-35

-4. Bill Clines notes on diseases - If rainy weather occurs in the harvest season (late Aug and Sept), growers can anticipate higher-than-normal levels of fruit rot disease.

Bitter rot (*Greeneria uvicola*) in particular is increased by rainy weather in the weeks leading up to harvest. It can be effectively controlled with Captan, but only if the fungicide is applied prior to infection. Captan can be used up until 4 days before harvest, but I do not recommend using it that late because the harvested berries will still have a residue from the kaolin clay filler material in the formulation. Another possibility for bitter rot control is Nova, which can be used within 14 days of harvest. If either of these materials is to be used, then the sooner the better! The bitter rot fungus produces sparse black fungal spore masses (acervuli) on the surface of these infected "drops", and the presence of infected fruit on the ground under the vine early in the harvest season can be a diagnostic aid to growers.

Ripe rot (*Colletotrichum* sp.) causes fruit rots on many plant species, as the name implies, and most rots caused by this fungus occur when the fruit is mature and ready for harvest. Captan is quite effective against this disease. Ripe rot is even worse when overripe fruit is allowed to hang on the vine, so timely harvesting of all ripe grapes at each harvest date is another control method.

Macrophoma rot (*Macrophoma* sp.) causes a greasy-looking "bullseye" spot on grapes, and these spots seem to attract yellow jackets and wasps. *Macrophoma* is best controlled by early-season sprays in June and July.

Some cultivars are more susceptible to rots than others (Fry is very susceptible), and in general, black-fruited cultivars are less susceptible than bronze-fruited ones.

If you would like to see pictures of these and other muscadine diseases, check out the on-line disease note:

<http://www.ces.ncsu.edu/depts/pp/notes/Fruit/fdin012/fdin012.htm>

PLEASE NOTE THAT SOME EXCELLENT STROBILURIN FUNGICIDES FOR FRUIT ROT CONTROL ARE AVAILABLE AND LISTED IN THE 2006 NC AG CHEM GUIDE <http://ipm.ncsu.edu/agchem/7-7.pdf>

THESE CAN ALSO HAVE GOOD ACTIVITY ON POWDERY MILDEW

-5. Ken Sorensons notes on insects - Japanese beetles are rising now and False Japanese Beetles are also a problem. They will continue to emerge over the next 6 weeks. They overwinter as larvae that feed on the roots of grasses.

Growers can spray their muscadine vineyards to slow the beetle damage, which if severe may inhibit growth. Insecticide choices include Sevin, malathion, Imidan, or one of the pyrethroids. Depending on the level of infestation, growers may need to spray every 5 to 7 days. Keep in mind, though, that use of Sevin may encourage mites. If the application is for a new vineyard, use the most dilute rate given on the product label; it is unnecessary to spray directly into the grow tubes and the force of the air may actually detach young leaves. If Japanese beetles are a problem in a young vineyard they can be hand collected during the weekly training of the vines.

Pheromone traps are another option and can easily be constructed using purchased pheromone and a 2-liter bottle. Traps should be placed away from the vineyard and checked every day to monitor the beetle population. These traps will attract males, but not females.

-6. Upcoming Events

The NC Muscadine Grape Associations annual meeting will be in Raleigh on August 3 followed by a bus tour with specialists in the field on August 4. Visit www.ncmuscadine.org for details.

Planning is underway for the 2nd annual North Carolina Muscadine Harvest Festival at the Duplin Commons Agribusiness Center. Plan on joining us for educational seminars, wine tasting, and live music Sept 29-30. See www.muscadineharvestfestival.com for details.

-7. Next week we will have a feature on weed management from Wayne Mitchem.

Looking forward to some drier weather today and through the weekend - it will also be much warmer this weekend!

Barclay Poling & Connie Fisk