Small Fruit News

Volume 13, No. 2 April 2013

North Carolina State University • Clemson University • The University of Arkansas
The University of Georgia • The University of Tennessee
Virginia Polytechnic Institute and State University

SPECIAL REPORTS:

Southern Region Small Fruit Consortium Awards $$106,406 in Grants for 2013

Tom Monaco, Coordinator, SRSFC

The Steering Committee of the Southern Region Small Fruit Consortium (SRSFC) awarded $101,406 in research and extension grants at their annual meeting held January 2013 in Savannah, GA.

Fifteen research proposals totaling $73,472 were funded and six extension proposals for a total of $28,434 were funded. Also $4,500 was awarded to the extension efforts in updating the IPM/Production Guides.

The IR4 Performance program provided a half match to one research and one extension proposal which added $3,750 in additional funding so the total amount funded for 2013 was $110,156.

Research projects funded for 2013 include:

2013-01 Southern Region Strawberry Variety Testing Program. Pattison, Poling, Johnson, Smith, Rollins $5,000

2013-02 Influence of fruit coating on Drosophila suzukii oviposition and development and implications for field use. Burrack, Swoboda $5,000

2013-03 Epidemiological Applications to Manage Anthracnose Crown Rot of Strawberry in the Southeast. Louws, Adhikari $5,000

2013-04 Postharvest Evaluation of Small Fruit after Application of Fruit Coatings. Perkins-Veazie, Fernandez, Burrack $5,000

2013-05 Evaluation of blueberry (Actinium spp.) cultivars for susceptibility to replant disease associated with ring nematodes (Mesocriconema ornatum). Noe, Brannen, Jagdale $5,000

In This Issue

strawberry plant production in Nova Scotia are aggressively working to correct their virus situation. Southern region strawberry research and extension folks are meeting with national experts and Canadian representatives in late March to plan methods to avoid a repeat of this past fall.

First Results of 2013 Monitoring for Fungicide Resistance in the Gray Mold

Pathogen *Botrytis cinerea*
Dolores Fernández-Ortuño and Guido Schnabel
Clemson University

Gray mold caused by the fungus *Botrytis cinerea* is probably the most economically important disease of strawberry worldwide. Infection of strawberry flowers is caused by spores and results in fruit decay. Fruit infections begin as small, firm, light brown lesions that enlarge quickly and fruit become covered with a gray fuzzy mass of spores followed by a soft rot. Gray mold disease can easily spread during periods of rainy and cool weather, heavy dews, or high relative humidity.
Chemical control of gray mold is essential to prevent fruit decay before and after harvest but resistance in *B. cinerea* to key fungicides is emerging. Therefore we started an extension program at Clemson University, which provides farm-specific fungicide resistance profiles. In our laboratory, fungicide sensitivity assays are performed that allow the distinction of sensitive from resistant isolates. During the 2011/2012 growing season we collected gray mold from commercial fields in Arkansas, Florida, Georgia, Kansas, Maryland, North Carolina, South Carolina, and Virginia. From each field we collected spores from ten berries (called a sample) and confirmed that the gray mold fungus was resistant to multiple chemical classes. The majority of the samples analyzed contained fungus that was resistant to Topsin M and Pristine. Half of the samples had a significant portion of fungus that was resistant to Scala and Elevate fungicides. Resistance to Rovral and Switch was rare (**Figure 1**).

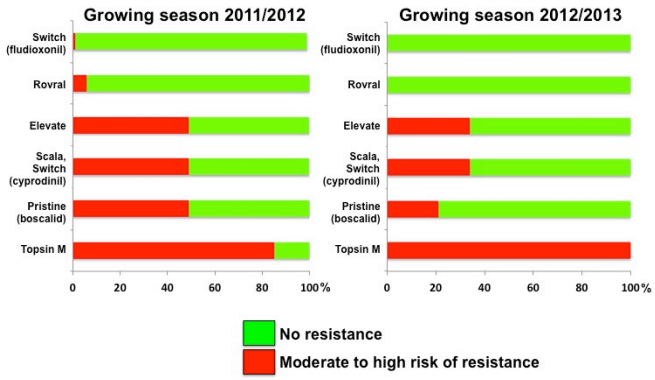


Figure 1: *Percent of samples with resistance to fungicide (red) collected from 8 states.*

This season we are providing the same service to strawberry growers and so far, we received samples from Georgia, Maryland, North Carolina, South Carolina, and Virginia. Fungicide resistance is still present and virtually all samples are resistant to Topsin M. In contrast to last year, however, resistance to Pristine has not been found that often. Only every 5th sample on average is resistant to Pristine. Rovral and Switch remain to be great options against gray mold disease but remember that Rovral is restricted to one application prior to bloom (**Figure 1**).
If you are are a strawberry or blackberry grower and you are interested in getting your farm-specific resistance profile to identify ineffective fungicides, send us around 40 dead strawberry (or blackberry) flowers or collect spores from newly infected, decaying fruit with a cotton swab. We need about 10 to 15 of those swabs (each from a different fruit and each fruit from plants far enough apart to represent an acre or so). Make sure that you only collect the fungus spores, do not touch the fruit (**Figure 2).** Mail the flowers or the swabs to Guido Schnabel, Clemson University, 114 Long Hall, Clemson, SC 29634 and tell us the origin of the sample, your name, and e-mail so that we can send you the report electronically. Upon receipt, we need about 3 (for cotton swabs) to 5 (for flowers) working days to get a report to you outlining farm specific gray mold management recommendations.

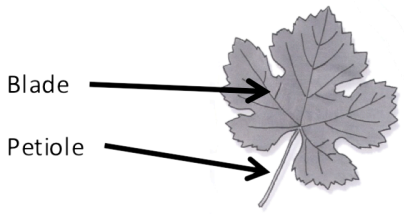
Figure 2: *How to collect spores from strawberries affected with gray mold using cotton swabs.*

Petiole Analysis for Vineyards

David W. Lockwood
Plant Sciences, University of Tennessee

Before the vineyard is planted, extensive soil sampling is a valuable way to determine the need for lime and several nutrients essential for good vineyard performance. Once the vineyard has been planted, the primary value of routine soil testing is to monitor soil pH, which will affect nutrient availability to the vine. Tissue analysis should be used to determine the actual nutrient status of vines. Both are components of a good nutrient management program for established vineyards and should be combined with observations of vineyard performance (leaf color, shoot growth, crop load, weather) and records of vineyard performance from previous years to give a reliable guide for fertilizer applications.

What to Sample:
Reliable results from tissue analysis depend on collecting the proper plant tissue at the appropriate time. For bunch grapes, the leaf petiole is generally used for analysis; however, some labs use leaf blades or entire leaves. Differences exist between the nutrient content of these plant parts. Therefore, always follow the instructions given by the lab that will perform the analysis.



Uses of Tissue Analysis:
Tissue analysis can be used as a troubleshooting tool to confirm or deny a suspected nutrient problem in vines or as a way to monitor nutrient levels in vines to anticipate problems (deficiency, toxicity, imbalance) before they become yield or quality limiting. Frequently, by the time a nutrient disorder becomes visible, considerable losses in regards to yields or fruit quality may have already occurred. These losses will continue to occur until the nutrient problem has been resolved.

Troubleshooting: Sampling to investigate a suspected nutrient problem can be done at any time throughout the growing season when leaf symptoms are present. Petioles should be collected from “affected” and “normal” vines of the same variety/rootstock growing in the same general area. Only one variety of grapes should be included in a sample. Leaves free of insect or disease injury should be collected from the same general location on all vines sampled. Remove the leaf at the point of attachment to the shoot on the vine. Separate the leaf and petiole, discard the leaf blade and put the petiole in a clean paper bag and stored in a clean, dust-free area to air dry prior to shipment to the lab for analysis. The number of petioles to collect for a sample will depend somewhat on the size of the petioles and may range from about 60 to over 100. Only a couple of petioles should be collected from a single vine.
Monitoring the nutritional status of a vineyard over times is perhaps the most valuable usage of tissue analysis. By sampling the same blocks of vines over a period of years, trends in nutrient composition can be identified and potential problems can be addressed before fruit quality and yields are adversely impacted.