

## ***Entomology Activities at North Carolina State University 2004 SERA-IEG-14 Report***

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The emphasis of our ongoing program on grape insects and their management in North Carolina is on the grape root borer. We continue to monitor for adults with pheromone traps on Muscadines in the Pine Level area at the Hinnant Vineyard and with *V. vinifera* varieties in the Winston Salem area at West Bend Vineyard. We had support from IR 4 for one year to study Beauveria bassiana, an insect fungus. We have seen no positive impact from this biorational project. However it takes at least five years to assess pupal skins, vine vigor, yield and mortality. We also had some support from the North Carolina Grape Council to monitor and study the effects of bark mulch and a Leno ground cover to control the borer as they pupate. This study in two vineyards continues and some results with these alternative methods of control have been observed to date. Cultural control by burying pupae at the right time every year does give some control. I did help get Lorsban registered as an insecticide for root borer some 20 years ago and although Lorsban is under EPA review we expect to keep this use for several more years. It still offers some control, as does the use of other management tactics, i.e. weed control, the application of fertilizer and timely irrigation. Vineyard management and protection of vines from drought and cold winter temperatures and keeping the vines active reduces plant stress and promotes vine survivability. I continue to share results on grape insects and their management at county meetings, grower summer tours and at Grape meetings. I produce and revise insect information notes and control recommendations on grape insects. Grape colored insect sheets on grape insect management, grape root borer, and one on grape phloem feeders are also available. I have collaborated some on the glassy winged sharp shooter monitoring which vectors Pierce's disease. A grape publication is planned on Grape Production in the Southeast. I welcome involvement in any multi-state collaboration in the development of extension educational materials and in their delivery to end-users and/or in training workshops.

Grape root borer monitoring and cultural management studies continue. We also support grape insecticides with the IR4 pesticide minor use program, but grapes have over 300,000 acres, so support is limited. Host plant resistance and mating disruption research is in progress and we await findings and application to growers through extension and technology transfer. I continue to train agents and respond to clinic specimens for homeowners and growers in the south. Commodity reports and strategic plans on Grape IPM for North Carolina are available on the web. Japanese beetles, leafhoppers and grape root borer are of major economic concern and need attention. The use of foam, insect nematodes and living mulches for root borer management remain for study in the future.