

IN THIS ISSUE: Funding Opportunities | Updates From EPA | New Insecticides | From the Field | Awards and Honors | Upcoming Events

FUNDING OPPORTUNITIES

- **2015 USDA/AMS Specialty Crop Block Grant Program**

The Georgia Department of Agriculture (GDA) has announced the competitive solicitation process to award the **2015 USDA/AMS Specialty Crop Block Grant Program (SCBGP)**. See <http://www.agr.georgia.gov/grants.aspx> for more information, detailed format instructions, and application forms. The Specialty Crop Block Grant Program (SCBGP) funds projects that “enhance the competitiveness of specialty crops.” Specialty crops are defined as: fruits, vegetables, tree nuts, dried fruits, horticulture, Christmas trees, turfgrass/sod, nursery and greenhouse crops, including floriculture. Please see specific listing of all eligible crops at www.ams.usda.gov/AMSV1.0/scbgp. Grant applications must be received by GDA on **Friday, April 17, by 4:30 p.m., via email in Word format to Jeanne.maxwell@agr.georgia.gov**. Please refer to the links available on the GDA grants webpage located at www.agr.georgia.gov/grants.aspx for the grant application, guidelines, and additional information.

- **USDA AFRI Foundational Program**

For FY 2015, it is anticipated that approximately \$116 million will be made available to support new awards within the AFRI Foundational Program Area. This RFA focuses on building a foundation of knowledge in fundamental and applied food and agricultural sciences critical for solving current and future societal challenges. The eight Program Area Priorities are very broadly written, making this an excellent opportunity for many of our research programs. The submission deadlines vary depending on the Program Area Priority. For more information, visit http://www.nifa.usda.gov/funding/rfas/pdfs/fy2015_afri_foundational.pdf

- **USDA AFRI Food Security Challenge Area**

The goal of this program is to invest in agricultural production research, education, and extension programs for more sustainable, productive and economically viable plant and animal production systems. In FY 2015, applications are sought in the following priority areas: 1) Agricultural Production Systems; 2) Breeding and Genomics of Crops and Livestock; and 3) National Strategy for Sustainable Crop and Livestock Production in the United States. For FY 2015, it is anticipated that approximately \$16.8 million will be made available to support new awards within the Food Security Challenge Area of Project types supported by AFRI within this Challenge Area will propose multi-function Integrated Research, Education, and/or Extension Projects, Food and Agricultural Science Enhancement (FASE) Grants, and conferences and/or workshops. **Letters of intent are due by April 02, 2015. The final submission deadline is June 4, 2015.**

extension.uga.edu

- **USDA AFRI Food Safety Challenge Area**

NIFA requests applications for AFRI Food Safety Challenge Area Program for FY 2015. Because public health is directly impacted by the safety of the food supply, it is imperative to understand potential food safety threats and develop innovative and sustainable technologies and control and mitigation strategies to protect the Nation's food supply from foodborne contaminants. The long-term outcome for this program is to invest in research, education and extension/outreach projects that reduce foodborne hazards in the U.S. food supply producing positive impacts on both public health and the economy. In FY 2015, applications are sought in the following priority areas: 1) Enhancing Food safety through Improved Processing Technologies, and 2) Effective Mitigation Strategies for Antimicrobial Resistance. The amount available for support of the AFRI Food Safety Challenge Area program in FY 2015 is approximately \$6 million. **The submission deadline for priority area 1 is May 18, 2015 and priority area (2) is May 13, 2015.**

For more information, visit

http://www.nifa.usda.gov/funding/rfas/pdfs/FY15%20Food%20Safety%20RFA%20final_to%20post.pdf

- **USDA AFRI Agriculture and Natural Resources Science for Climate Variability and Change Challenge Area**

NIFA requests applications for AFRI Agriculture and Natural Resources Science for Climate Variability and Change (AFRI ANRCVC) Challenge Area Program for FY 2015. The goal of this program is to support research to facilitate the adaptation of agroecosystems and natural resource systems to climate variability and the implementation of mitigation strategies in those systems. In FY 2015, applications are sought in the following priority areas: 1) Climate and Microbial Processes in Agroecosystems; 2) Climate Resilient Land Use for Agriculture and Forestry; and 3) Synthesis and Assessment of USDA NIFA's Climate Investments. The amount available for support of this program in FY 2015 is approximately \$5 million. **Letters of intent are due by April 02, 2015. The final submission deadline is June 4, 2015.**

For more information, visit

http://www.nifa.usda.gov/funding/rfas/pdfs/fy2015_afri_climate_change.pdf

- **USDA AFRI Water for Agriculture Challenge Area**

The U.S. Department of Agriculture (USDA) established the Agriculture and Food Research Initiative (AFRI) under which the Secretary of Agriculture may make competitive grants for fundamental and applied research, education, and extension to address food and agricultural sciences (as defined under section 1404 of the National Agricultural Research, Extension, and Teaching Policy Act of 1977 (NARETPA) (7 U.S.C. 3103)), as amended, in six priority areas. The six priority areas include: 1) plant health and production and plant products; 2) animal health and production and animal products; 3) food safety, nutrition, and health; 4) renewable energy, natural resources, and environment; 5) agriculture systems and technology; and 6) agriculture economics and rural communities. NIFA anticipates \$30 million will be available to support the AFRI Water for Agriculture Challenge Area program designed to help solve critical water problems in rural and agricultural watersheds across the United States (FY 2014 – FY 2018). Future (over next 3 years) research, education and extension areas that may be supported by the Water for Agriculture Program are found on page 5 of this RFA. In FY 2015 approximately \$9 million will be available in support of new awards for this program. **Letters of intent are due by April 09, 2015. The final submission deadline is July 16, 2015.**

extension.uga.edu

For more information, visit

http://www.nifa.usda.gov/funding/rfas/pdfs/fy2015_afri_water.pdf

- **USDA AFRI Childhood Obesity Prevention Challenge Area**

NIFA requests applications for the Agriculture and Food Research Initiative Childhood Obesity Prevention Challenge Area (COP) for fiscal year 2015 to achieve the long-term outcomes of reducing the prevalence of overweight and obesity among children and adolescents. Project types supported by AFRI within this Challenge Area will propose multi- function Integrated Research, Education, and Extension Projects, Food and Agricultural Science Enhancement (FASE) Grants, and conferences and/or workshops. This RFA identifies integrated and conference/workshop program objectives, eligibility criteria and application instructions for each project type. A successful project will include all three functions of the agricultural knowledge system (i.e., research, education and extension) within a project, focused around a problem or issue. The amount available for support of this program in FY 2015 is approximately \$6 million. **The final submission deadline is April 30, 2015.**

For more information, visit

http://www.nifa.usda.gov/funding/rfas/pdfs/fy2015_afri_child_obesity_0305.pdf

- **USDA NIFA Integrated Research, Education, and Extension Competitive Grants Program – Organic Transitions (ORG)**

NIFA requests applications for the Integrated Research, Education, and Extension Competitive Grants Program – Organic Transitions (ORG) for fiscal year (FY) 2015 to solve critical organic agriculture issues, priorities, or problems through the integration of research, education, and extension activities in program areas. According to the 2015 Appropriations Bill, H.R. 83, the amount anticipated to be available to support this program in FY 2015 is approximately \$4 million. **The final submission deadline is April 16, 2015.**

For more information, visit

http://www.nifa.usda.gov/funding/rfas/pdfs/15_org_trans.pdf

- **USDA NIFA Organic Agriculture Research and Extension Initiative (OREI)**

NIFA requests applications for the Organic Agriculture Research and Extension Initiative (OREI) for fiscal year (FY) 2015 to solve critical organic agriculture issues, priorities, or problems through the integration of research, education, and extension activities. OREI funds research, education, and extension programs that enhance the ability of producers and processors who have already adopted organic standards to grow and market high quality organic agricultural products. The amount available for support of this program in FY 2015 is approximately \$17.5 million. **Notifications of intent to submit are due April 01, 2015. The final submission deadline is April 30, 2015.**

For more information, visit

http://www.nifa.usda.gov/funding/rfas/pdfs/15_OREI.pdf

- **USDA NIFA Specialty Crop Research Initiative (SCRI)**

NIFA requests applications for the Specialty Crop Research Initiative (SCRI) for fiscal year 2015 to solve critical United States specialty crop issues, priorities, or problems through the integration of research and extension activities that use systems-based, trans-disciplinary approaches. The intent of the SCRI program is to solve the needs of the various specialty

extension.uga.edu

crop industries through the promotion of collaboration, open communication, the exchange of information, and the development of resources that accelerate application of scientific discovery and technology. The amount available for NIFA support of the non- Citrus Disease Research and Extension (CDRE) portion of the SCRI program in FY 2015 is approximately \$49 million. The SCRI program will give priority to projects that are multistate, multi-institutional or trans-disciplinary (see Definitions, Part VIII (E)), and include clearly defined mechanisms to communicate results to producers and the public. **Pre-applications are due March 30, 2015. The final submission deadline is July 2, 2015.**

For more information, visit

http://www.nifa.usda.gov/funding/rfas/pdfs/15_SCRI.pdf

- **USDA NIFA Crop Protection and Pest Management Competitive Grants Program**

NIFA requests applications for the Crop Protection and Pest Management (CPPM) Competitive Grants Program for fiscal year (FY) 2015 to ensure food security and effectively respond to other major societal challenges. The CPPM program supports projects that address high priority integrated pest management (IPM) challenges with coordinated state, regional, and national research and extension efforts. In FY 2015 NIFA will competitively solicit only Applied Research and Development Program Area (ARDP) applications under the Crop Protection and Pest Management (CPPM) program. Pursuant to H.R. 83, the 2015 Appropriations Act, the amount available for support of ARDP projects in FY 2015 is approximately \$4 million. **The final submission deadline is April 07, 2015.**

For more information, visit

http://www.nifa.usda.gov/funding/rfas/pdfs/15_Crop%20Protection.pdf

- **USDA NIFA Biotechnology Risk Assessment Research Grants Program**

NIFA requests applications for the Biotechnology Risk Assessment Research Grants Program (BRAG) for fiscal year (FY) 2015 to support environmental assessment research concerning the introduction of genetically engineered (GE) organisms into the environment. The amount available for support of this program in FY 2015 is approximately \$3.6 million. **The final submission deadline is April 17, 2015.**

For more information, visit

http://www.nifa.usda.gov/funding/rfas/15_biotech_risk_assess.pdf

- **NIFA-BARD Opportunity for Cooperation between US and Israeli Scientists**

In 2013, the USDA NIFA signed a Memorandum of Understanding with BARD, The U.S.- Israel Binational Agricultural Research and Development Fund. For 2015, Israeli scientists may join a US scientist/team applying for grants in the following NIFA RFA's (www.nifa.usda.gov/funding/rfas/afri.html): 1) AFRI Food Security; 2) AFRI Water for Agriculture; 3) AFRI Agricultural and Natural Resources Science for Climate Variability and Change; and 4) AFRI Food Safety. Thus U.S. scientists, applying for a grant in any of the above AFRI RFAs, have an opportunity to add to their application Israeli scientists as collaborators whose funding will be provided by BARD. The BARD staff is available to help facilitate U.S. scientists to find appropriate Israeli partners for their collaborative efforts. For more information, contact: Haim Katz, haim@bard-isus.com, Tel (from US) 011-972 39683982.

extension.uga.edu

- **CAES GLOBAL PROGRAMS FACULTY INTERNATIONAL TRAVEL FUNDING PROGRAM**

The College of Agricultural and Environmental Sciences is committed to increasing international engagement among our faculty. In order to support the development of sustained collaborative global partnerships, the Office of Global Programs will offer international travel funding for CAES faculty on a biannual basis. Funding will be awarded on a competitive basis and is not guaranteed.

Eligibility: Applications will be accepted from CAES Faculty members only. Applicants are limited to receiving one travel award per year.

FY 15 Deadlines: For travel between January 1 and April 30, 2015: **December 1, 2014**
For travel between May 1 and September 30, 2015: **April 1, 2015 Budget/Funding:**

Awards will be allocated based on availability of funds. We anticipate awards of approximately \$2000 each.

Evaluation Criteria:

Priority will be given to applications for international activities that:

- Aim to secure external funding for collaborative programs/projects
- Demonstrate a high potential to develop long---lasting partnerships
- Indicate Applicant or departmental cost---share

Application Instructions:

Applications of no more than 2 Pages should be submitted by email to Tanya Boyd (tlboyd@uga.edu) With a copy to the faculty member's Department Head.

Applications must include:

- Dates and location(s) of proposed international travel
- Detailed outline of the purpose and goals of trip
- Description of opportunities for future collaboration
- Indication of how the remaining trip expenses will be covered

Questions –Feel free to contact Vicki McMaken (vcollins@uga.edu)

UPDATES FROM EPA

- **EPA Announces Voluntary Cancellation Of Certain Methomyl Uses**

EPA and the manufacturers of the insecticide methomyl have agreed to cancel some uses and limit use on certain crops to reduce risks to drinking water. While Florida and California were the areas of greatest concern for risks from methomyl in drinking water, the following measures will be implemented nationwide:

- canceling the use on barley, oats, and rye;
- limiting its use on wheat to Idaho, Oregon, and Washington;
- reducing the number of applications to corn, celery, and head and leaf lettuce; and,
- reducing the number of applications and the seasonal maximum application rate for peppers.

These measures are currently being phased in, ensuring timely implementation of the changes for several crops. EPA and the manufacturers reached agreement to stop making and selling some fly bait products and to add information to the label that clarifies the approved uses. According to EPA, these changes will reduce the illegal use of methomyl fly bait products which can kill wildlife, an issue that was reported to EPA by a number of states.

extension.uga.edu

First registered 1968 and then re-registered in 1998, methomyl is restricted and must only be used by certified and trained applicators and has no residential uses. The only non-agriculture use of methomyl is in fly bait. EPA will continue the registration review process for methomyl. The next step in that process is the release of the methomyl draft risk assessment in 2016. In Nov. 2014, EPA asked for public comments on the requests to voluntarily cancel the uses of methomyl on barley, oat, and rye. No comments were received. The nationwide agricultural mitigation measures can be viewed in the risk mitigation decision document available at EPA-HQ-OPP-2010-0751 at www.regulations.gov.

NEW INSECTICIDES

- **Bayer CropScience Launches Latest Insecticide, Sivanto**

Bayer CropScience announced that Sivanto™ insecticide has received registration from EPA and will be available for the 2015 growing season for a wide range of fruits and vegetables. Sivanto precisely targets key damaging pests at multiple insect life stages—delivering rapid knockdown of sucking pests while helping safeguard beneficial insects—to prevent damage to plants and help minimize the spread of diseases from insect carriers. With flexible application timings and compatibility with many beneficial insects and predatory mites, Sivanto works to preserve the overall health of plants and protect growers' investment in their crops.

The discovery of Sivanto was primarily inspired by the natural compound stemofoline, a derivative from the plant *Stemona japonica*. Sivanto is the first member of a new chemical class of insecticides, the Butenolides (newly created IRAC subgroup 4D) and has shown excellent control of neonicotinoid-resistant aphids and whiteflies in U.S. field trials. It is registered on a broad range of horticulture crops and most broadacre crops, including citrus, pome fruit, grapes, bush berries, tree nuts (not including almonds), potatoes, vegetables, alfalfa, cotton, sorghum and several specialty crops (such as blueberry and clover from IR-4), which allows for inclusive and flexible crop rotation programs.

FROM THE FIELD

Monitoring and Management of Blueberry Gall Midge

Ash Sial and Brian Little
Department of Entomology, University of Georgia

We have received several reports of blueberry gall midge infestations over the past few weeks. Blueberry gall midge, *Dasineura oxycoccana* (Johnson) (Diptera: Cecidomyiidae) was first identified as a pest of rabbiteye blueberries in the southeastern United States in early 1990s. Since then, gall midge has been confirmed as a pest of blueberries in major blueberry-growing states throughout the United States. The gall midge larvae feed on developing floral and vegetative buds in southern highbush and rabbiteye blueberries. The infested buds appear dry and shriveled, and eventually disintegrate. Severe gall midge infestations can cause up to 80% crop loss if appropriate control measures are not implemented in a timely manner.

extension.uga.edu

Adults are very small and fragile flies, approximately 2-3 mm long (Fig. 1a). Adult flies have long slender legs, globular cylindrical antennae, and transparent wings with long black hair-like structures and reduced venation. Females lay eggs in floral or vegetative buds just after bud swell, as soon as scales of flower buds begin to separate and the tips of flowers become visible. Totally dormant buds are not infested. The adult stage probably lasts only for a few days (less than a week) during which time a single female can lay up to 20 eggs. Eggs hatch in 2-3 days. First instar larvae are less than 1 mm long, white and almost transparent. They then go through three instars and develop into mature larvae in about 7-10 days (Fig. 1b). The full-grown larvae are about 1mm long, 0.3 mm wide, legless, and reddish-orange in color. Once fully fed, the larvae cease feeding, come out of the buds and drop to the ground to pupate in soil. The puparia transform into adult flies in a few days. In South Georgia, gall midges can complete 5-6 generations from January through June.

Earlier in the season, midge larvae feed on floral bud tissues and on the pedicels that hold the individual flower buds to the peduncle within the developing flower cluster. As a result, flower buds dry up and disintegrate within about two weeks after infestation (Fig. 2). Depending on severity of infestation, high levels of flower bud abortion (as high as 80%) may occur. Although both rabbiteye and southern highbush blueberries are susceptible to blueberry gall midge, the impact of gall midge infestation is relatively less on early blooming cultivars of southern highbush because of the earlier timing of floral bud development. Later in the season, as plants progress to vegetative budding, oviposition also occurs on the new shoot meristems. Infested vegetative buds swell and the outer leaves curl enfolding feeding larvae inside. Vegetative meristems may also be infested and killed leading to distorted and blackened shoot tips, characteristic symptoms of damage caused by gall midge. The damage caused by gall midge in blueberries might be confused with frost damage or boron deficiency. The severity of damage depends on temperature and other climatic factors, and generally tends to be worse after mild winters.

The small size of the blueberry gall midge larvae and adult flies, and the larval feeding occurring inside the buds makes field detection very difficult before damage occurs. However, blueberry gall midge infestations can be detected prior to the onset of symptoms by collecting bud samples and using emergence traps and panel traps. For bud sampling, collect five young buds from 10-15 randomly selected bushes per acre. Place the buds into a zip-lock bag at room temperature. If buds are infested, reddish-orange larvae will begin to emerge after 3-4 days (Fig. 3). The emergence traps made up of an overturned bucket with a sticky transparent window at the top (Fig. 4) can be used to detect gall midge populations earlier in the season. These traps can also be used to predict peaks in larval infestation which is important for targeting pesticide application. Panel traps consisting of 1ft x 1 ft sticky panel attached to a metal or wooden post (Fig. 5) can also be used to detect midge adults.

The blueberry gall midge larvae are very difficult to kill using insecticides because they are protected by surrounding plant tissue while feeding inside the buds. It is therefore extremely important to kill adults before they lay eggs in the buds. However, because of their ability to go through multiple generations per season and short adult lifespan, careful scouting and timing of insecticide application are key to successful control of blueberry gall midge. Insecticides that have been shown to be effective against blueberry gall midge include Diazinon, Delegate, Entrust (OMRI-listed), Imidan, Malathion, and Assail. For specific insecticide recommendations, please refer to 2015 Southeast Regional Blueberry Integrated Management Guide available at <http://www.smallfruits.org/SmallFruitsRegGuide/Guides/2015/2015BlueberrySprayGuide.pdf>.

extension.uga.edu

Several species of endoparasites such as *Synopeas* spp., *Platygaster* spp., and *Inostemma* spp. have been reported to contribute significantly to the biological control of blueberry gall midge populations, but the actual impact will depend on populations densities of these natural enemies in the blueberry orchards.

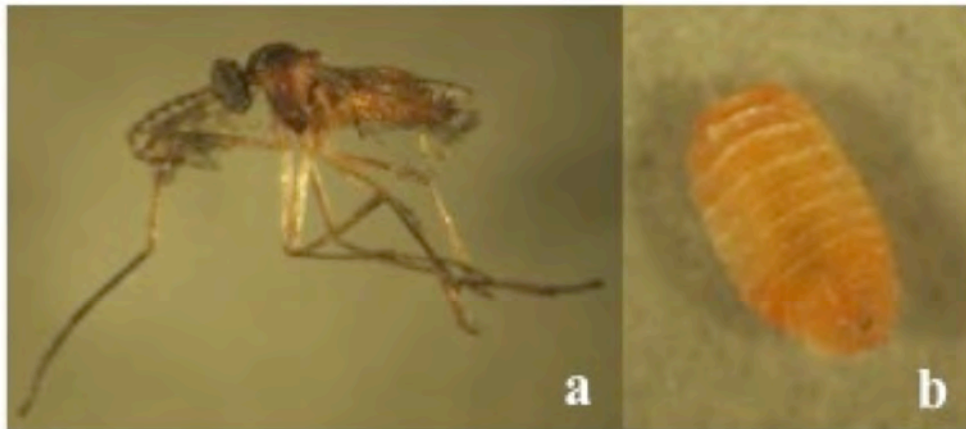


Figure 1. Blueberry gall midge (a) Adult, (b) Larva
(Credit: Little & Sial, University of Georgia)



Figure 2. Blueberry gall midge infested bud
(Credit: Little & Sial, University of Georgia)

extension.uga.edu



Figure 3. Blueberry buds placed in a zip-lock bag. The inset magnified to show the blueberry gall midge larvae that just emerged out of the infested buds (Credit: Little and Sial, University of Georgia)



Figure 4. Bucket emergence trap (Credit: E. M. Rhodes, University of Florida)

extension.uga.edu



Figure 5. Panel Trap
(Credit: E. M. Rhodes, University of Florida)

References:

- 1) Cook, M. A., S. N. Ozeroff, S. M. Fitzpatrick, and B. D. Roitberg. 2011. Host-associated differentiation in reproductive behavior of cecidomyiid midges on cranberry and blueberry. *Entomologia Experimentalis et Applicata*. 141: 8-14.
- 2) Dernisky, A.K., R.C. Evans, O.E. Liburd and K. Mackenzie. 2005. Characterization of early floral damage by cranberry tipworm (*Dasineura oxycoccana* Johnson) as a precursor to reduced fruit set in rabbiteye blueberry (*Vaccinium ashei* Reade) *International Journal of Pest Management* 51: 143-148.
- 3) Fitzpatrick, S. M., R. Gries, G. Khaskin, D.A.H. Peach, J. Iwanski, and G. Gries. 2013. Populations of the gall midge *Dasineura oxycoccana* on cranberry and blueberry produce and respond to different sex pheromones. *Journal of Chemical Ecology*. 39: 37-49.
- 4) Gagne, R. J. 1989. *The Plant-feeding Gall Midges of North America*. Cornell University Press, Ithaca, NY 356 pp.
- 5) Hahn N. G. and R. Isaacs. 2012. Distribution and phenology of *Dasineura oxycoccana* (Diptera: Cecidomyiidae) in Michigan blueberries. *Environmental Entomology* 41:455-462.
- 6) Liburd, O. E., E. M. Sarzynski, N. Benda, E. M. Rhodes, B. J. Sampson. 2013. Blueberry gall midge: a major insect pest of blueberries in the southeastern United States. University of Florida, IFAS Extension Publication ENY825.
- 7) Lyrene, P. M. and J. A. Payne. 1993. Blueberry gall midge: A pest in rabbiteye blueberry in Florida. *Proceedings, Florida State Horticulture Society*, 105: 297-300.
- 8) Lyrene, P. M. and J. A. Payne. 1995. Blueberry gall midge: A new pest of rabbiteye blueberries. *Journal of Small Fruit and Viticulture* 3: 111-124.
- 9) Roubos C. R. and O. E. Liburd 2010. Pupation and emergence of blueberry gall midge, *Dasineura oxycoccana* (Diptera: Cecidomyiidae), under varying temperature conditions. *Florida Entomologist*, 93:283-290.
- 10) Roubos C. R. and O. E. Liburd. 2010. Evaluation of emergence traps for monitoring blueberry gall midge (Diptera: Cecidomyiidae) adults and within field distribution of midge infestation. *Journal of Economic Entomology*, 103:1258-1267.

extension.uga.edu

- 11) Roubos C. R. and O. E. Liburd. 2013. Parasitism of *Dasineura oxycoccana* (Diptera: Cecidomyiidae) in North Central Florida. *Environmental Entomology*, 42:424-429.
- 12) Sampson, B. J., S. J. Stringer, and J. M. Spiers. 2002. Integrated pest management for *Dasineura oxycoccana* (Diptera: Cecidomyiidae) in blueberry. *Environmental Entomology* 31: 339-347.
- 13) Sampson, B.J., T.A. Rinehart, O.E. Liburd, S.J. Stringer and J.M. Spiers. 2006. Biology of parasitoids (Hymenoptera) attacking *Dasineura oxycoccana* and *Prodiplosis vaccinii* (Diptera: Cecidomyiidae) in cultivated blueberries. *Ann. Entomol. Soc. Am.* 99: 113-120.
- 14) Sarzynski, E.M. and O.E. Liburd. 2003. Techniques for monitoring cranberry tipworm (Diptera: Cecidomyiidae) in rabbiteye and southern highbush blueberries. *Journal of Economic Entomology* 96: 1821-1827.
- 15) Yang, W. Q. 2005. Blueberry gall midge, a possible new pest in the Northwest: Identification, life cycle, and plant injury. Oregon State University, Extension Service Publication EM8889.

Response to February Cold Damage and Potential Botryosphaeria Development on South Georgia Blueberries

Phil Brannen

Department of Plant Pathology, University of Georgia

The following is largely a synopsis of information previously provided by Gerard Krewer (UGA Professor Emeritus and consultant), Bill Cline (NC State), Dave Lockwood (Univ. of TN), Danny Stanaland (retired county agent and consultant) and myself relative a suggested response to cold damage on blueberries and the potential threat of *Botryosphaeria* canker development on damaged tissues. The extent of the recent damage to southern highbush blueberries may be variable throughout the state, but I suspect it is somewhat universal for blueberries grown anywhere along the same latitude as Georgia. Based on initial reports and opinions of field specialists, this cold damage will likely have a significant negative impact on yield this year. Without regard, the recent freezes have caused extensive tissue damage to canes, and this will need to be addressed.

Though freeze damage is immediate, there is a secondary danger of significant infection and disease development by *Botryosphaeria* fungi. *Botryosphaeria* fungi may take a while to move into cold-injured blueberry shoots, but they will likely invade them eventually to cause stem blight symptoms (mainly dieback that moves down canes to the crown). Some fungicide applications made for *Botrytis* control (e.g. Pristine) may also suppress initial *Botryosphaeria* infections, but producers should watch plants carefully for *Botryosphaeria*-related stem diebacks in the spring and summer.

There will be an advantage to pruning out dead tissue in late February to mid-March; there is research-based information from North Carolina (Bill Cline) to back this up. Widespread infection by *Botryosphaeria dothidea* following cold injury has been reported. Injured stems are colonized early, disease incidence increases with time and temperature, and the later you wait past mid-March to prune, the more disease you are likely to observe. I do generally recommend a fungicide application after each day of pruning to prevent additional infections of pruning cuts. Also, do not push plants with excessive nitrogen this spring, as this might further exacerbate the situation with *Botryosphaeria*.

extension.uga.edu

Dave Lockwood (Univ. of TN) has also advised growers to delay pruning until late winter/early spring so that they can feel relatively sure that the potential for additional cold injury is past. He also advises holding off until one can easily see, based on bud swell or early shoot growth, where the strong, new growth will originate. At that time, he advises pruning back to healthy wood. Bill Cline suggests that “it is worth a special effort to remove cold-injured stems, especially on young bushes. With cold-injured basal shoots (suckers that emerge from the crown), snap them off by hand at the crown, since the brown pith often goes all the way to the crown. In controlled experiments this significantly reduced disease incidence. For cold-injured shoots higher up on older canes, prune them back to healthy green tissue.”

When pruning, producers should review the weather forecast, and I would attempt pruning when 3-4 days of dry weather (no overhead frost protection or irrigation as well) are predicted to follow. This will also help to reduce infections on new pruning cuts, and again, we need to consider use of fungicides after each day of pruning to prevent yet more infections.

Reference

Infection of Cold-Injured Blueberry Stems by *Botryosphaeria dothidea*. W. O. Cline, Department of Plant Pathology, North Carolina State University, Raleigh 27695-7616. Plant Dis. 78:1010. Accepted for publication 20 June 1994. Copyright 1994 The American Phytopathological Society. DOI: 10.1094/PD-78-1010A.

(Reprinted from UGA Blueberry Blog - <http://blog.caes.uga.edu/blueberry/>)

Botrytis Management after the Cold Event

Phil Brannen

Department of Plant Pathology, University of Georgia

The following information is of value to commercial blueberry producers in the southern part of the state or anywhere that blueberries are in bloom. We just had a couple of nights of cold temperatures (<25 F) in most parts of our blueberry belt, so this message is especially targeted for those producers. Where cold-damaged blooms/shoots are observed, Botrytis might be a real issue, since damaged blossoms and buds will provide infection courts for the spores. The optimum temperature for infection of Botrytis is 59-68 F, but the optimum for spore germination is actually 68 F and above. That means we will have perfect temperatures for infection within the next day or two, as temperatures around 70 F should be optimal for Botrytis; weather predictions for Alma and Homerville are indicating that highs will be ~70 F on Saturday and Sunday. Rainfall is currently predicted as well, and if heavy and prolonged dews are associated with the warm temperatures, we may have Botrytis development.

Where freeze damage has occurred on southern highbush, I would recommend an immediate application of Pristine at the high rate. Unless resistance has developed in the Botrytis and Botryosphaeria populations, Pristine should control Botrytis and suppress Botryosphaeria. However, if Exobasidium has been observed, Pristine does not generally have Exobasidium activity due to resistance development, and another fungicide should be considered. There are several excellent Botrytis materials on the market: Pristine, Switch,

extension.uga.edu

Elevate and CaptEstate. Captan has Botrytis activity, but it is not as efficacious as these newer products. Switch is also excellent, and Botrytis resistance is not likely with one of the components in this fungicide. Apply no more than two applications of Pristine before switching to another product with a different mode of action — any of the others. Again, Captan alone is the least efficacious relative Botrytis management, but it will not have developed resistance.

If field conditions are wet, aerial applications may be necessary to apply fungicides in a timely fashion. As always, follow all label directions. I have not reviewed all labels, but if I interpret the labels correctly, aerial application is now allowed for Pristine, Switch, and even some Captan products (e.g. Captan 4L).

Also, there are always questions regarding the tremendous amount of bark/ground wetting that occurs with overhead freeze protection. I am hopeful that this will not increase root rot diseases substantially at this time, but the root zones are likely saturated. Ridomil application might be warranted, but there is no guarantee it would be needed. However, these products will not resurrect dead plants, so it is a judgment call as to whether one applies the product now or later as the plants start to push more. There may not be enough foliage for good uptake and activity of Aliette or other phosphonate-type products (ProPhyt or Agri-Fos or Kphite for example), but in 3-4 weeks (after bloom but with good new expanded leaf flush), I would consider foliar application of one of these materials to stave off root rots during the early spring; follow label directions and do not over-concentrate these materials in the final spray volume, as damage can occur with their use if label directions are not carefully observed.

(Reprinted from UGA Blueberry Blog - <http://blog.caes.uga.edu/blueberry/>)

Mummy Berry Model Prediction

Phil Brannen and Harald Scherm

Department of Plant Pathology, University of Georgia

Dr. Harald Scherm has determined the mummy berry potential (germination and development of the apothecia); all southern Georgia blueberries that are showing either green tip or early bloom developmental stages are at high risk for mummy berry infection at this time and going forward. This is especially true as temperatures warm up next week and we have rainfall. If we can extrapolate the temperature information from Dr. Annemiek Schilder's Michigan fact sheet on mummy berry (Schilder et al., 2008) to rabbiteyes, we do start to see a match again this year:

“Ascospore germination requires free water, and the optimum temperature for infection of susceptible tissue is 57°F. Developing vegetative buds become susceptible to infection when about 1/6th inch of green tissue is exposed. Flower buds become susceptible when the bud scales begin to separate. At 57°C with adequate moisture, germination and infection can occur within 4 hours; at 36°F, at least 10 hours of leaf wetness are required for infection. Blight symptoms appear about two weeks after infection. In lowbush blueberries, developing leaf and flower bud tissues are more susceptible to infection after exposure to freezing temperatures, and this susceptibility can last for up to 4 days after the frost event. This also appears to be the case in highbush blueberries.”

extension.uga.edu

Mummy berry is very well tied to the initiation of budbreak and bloom, especially in rabbiteyes. With rabbiteye green tip and/or bloom development likely starting next week, producers need to be ready to spray mummy berry active fungicides in earnest.

(Reprinted from UGA Blueberry Blog - <http://blog.caes.uga.edu/blueberry/>)

Mummy Berry Model Prediction

Phil Brannen

Department of Plant Pathology, University of Georgia

Based on reports from the field, bloom may be ahead of green tip on some rabbiteye varieties this year. Producers are keenly aware that green tip is utilized to initiate the first application of fungicides for mummy berry, but they sometimes forget that flowers will be susceptible if flower bud expansion occurs before green tip. Developing vegetative (leaf) buds become susceptible to infection when about 1/6th inch of green tissue is exposed (green tip). Flower buds become susceptible when the bud scales begin to separate. Either of these situations, whichever comes first, should be utilized to initiate mummy berry applications. Temperature and moisture conditions are highly conducive for mummy berry infections this year, so an early missed application could allow significant damage.

(Reprinted from UGA Blueberry Blog - <http://blog.caes.uga.edu/blueberry/>)

AWARDS AND HONORS

Donnie H. Morris Award for Excellence in Extension

Dr. Phil Brannen, Professor in Plant Pathology, recently received the Georgia Fruit and Vegetables Growers' Association Donnie H. Morris Award for Excellence in Extension. This award was established by the GFVGA to recognize University of Georgia Cooperative Extension Personnel for their important contributions to the fruit and vegetable industry. Individuals who receive this award are nominated by a grower member of the GFVGA. Dr. Brannen was nominated due to his extensive knowledge of disease management programs in fruit commodities; he serves as the extension fruit pathologist for Georgia –

conducting research and technology transfer for multiple fruit commodities. His efforts are directed towards developing IPM practices to solve disease issues and technology transfer of disease-management methods to commercial fruit producers. He also teaches the graduate level Field Pathology Course, team-teaches the IPM Course, coordinates the Viticulture and Enology in the Mediterranean Region Course (Cortona, Italy), and guest lectures in numerous other courses throughout the year.



extension.uga.edu

UPCOMING EVENTS

GETTING THE BEST OF PESTS: 2015 WEBINAR SERIES

UGA-CAES Announces 2015 Webinar Schedule

The University of Georgia CAES Extension, in cooperation with the DI Group @ Georgia College, announces the 2015 Getting the Best of Pests webinar series schedule. Register at www.gabugs.uga.edu. Webinars are 8:00 to 10:00 AM U.S. east coast time and to-date provide continuing education credit in GA, FL, AL, SC, NC, and TN. This year's speaker line-up represents some of the greatest minds working in the area of urban pest management research and consulting.

April 15, 2015-Bed Bugs

Dr. Stephen Kells is a Research Professor of Urban Entomology at the University of Minnesota. His research specialty is the biology of bed bugs (bedbugs.umn.edu). Dr. Changlu Wang is also a Research Professor of Urban Entomology, and specializes on bed bug monitoring and control. Both are highly productive researchers and are considered authorities on the biology and management of bed bugs. During this webinar, they will both discuss their current research on bed bugs.

June 17, 2015-Rodents

Dr. Robert Corrigan, RMC Consulting, has been studying the biology, behavior, and management of rodents for decades. He is author of *Rodent Control: A Practical Guide for Pest Management Professionals*. Dr. Claudia Riegel is the Director of the New Orleans Mosquito, Termite and Rodent Control Board, a City of New Orleans-funded group whose goal is to protect the city from these pests. Both will talk about rodent biology, behavior, and management, with special emphasis on management in commercial environments.

August 19, 2015-Insecticide Resistance; Biology and Management of Fleas

Dr. Michael Scharf a Research Professor at Purdue University where he holds the O. W. Rollins/Orkin Endowed Chair in Urban Entomology. Dr. Scharf is an insect toxicologist, and in this unique webinar will present a talk on various means by which insects evolve resistance to insecticides. Dr. Nancy Hinkle is an Extension Professor of Veterinary and Urban Entomology at the University of Georgia. Among her many qualifications, she is an authority on the biology and management of parasites of pets---including fleas. In her webinar she will discuss the resurgence of cat flea problems and provide insight into their biology and management.

October 21, 2015-Insecticide Mode of Action; Pesticide Safety

Dr. Scharf returns to present a one hour webinar on insecticide mode of action---a topic that every pest management professional should be aware of. Dr. Phil Koehler is an Extension & Research Professor of Urban Entomology at the University of Florida where he holds the Margie & Dempsey Sapp Endowed Professorship of Structural Pest Control/FPMA Endowed Professor of Urban Entomology. Dr. Koehler will highlight the safe use of pesticides.

December 9, 2015-Ants

Dr. Robert K. Vander Meer is a senior research scientist and Research Leader of the Imported Fire Ant and Household Insects unit at the USDA-Agricultural Research Service's Center for Medical, Agricultural and Veterinary Entomology in Gainesville, FL. He is a world class expert on ant communication, particularly the study of pheromones. His

extension.uga.edu

presentation will be “Chemical Communication in Ants”. Dr. Chow Yang Lee is a Professor of Urban Entomology in the School of Biological Sciences at the Universiti Sains Malaysia, in Penang, Malaysia. He’s an authority on the biology and management of pest ants, termites, and German cockroaches. He will talk about ant baiting and principles of baiting.

To learn more about the webinar series, contact Dr. Daniel R. Suiter at the University of Georgia (USA) at 770-233-6114 or email him at dsuiter@uga.edu Webinar Registration: gabugs.uga.edu

Mar 17-18 The Unmanned Systems in Agriculture Conference 2015

Will be held at the Tifton Conference Center on March 17-18. If you are interested in unmanned systems in agriculture or the most up to date info on unmanned aerial systems for agriculture then this conference may be of interest to you. The agenda is and registration can be found at the following link:

https://tcccereg.caes.uga.edu/iebms/coe/coe_p1_all.aspx?oc=10&cc=CALENDAR

Mar 23-26 8th International Integrated Pest Management Symposium

The 8th International Integrated Pest Management Symposium will be held March 23-26 at Salt Palace Convention Center, Salt Lake City, UT 84101. The theme for this year’s symposium is “IPM: Solutions for a Changing World” and program includes sessions on diversity of topics surrounding IPM. Earlybird registration ends February 23, 2015. For further information contact symposium coordinator at 217-333-2880.

April 8-10 Annual Georgia Entomological Society Meeting

The upcoming meeting will be April 8-10, 2015 at the Villas by the Sea resort on Jekyll Island, GA. A block of rooms is available at the Villas by the Sea www.villasbythesearesort.com. Reservation deadline is March 8 for the group rate. The Villas are now accepting reservations at (800) 841-6262 (Hit 0 at the prompt). Be sure and mention that you’re with the Georgia Entomological Society to get the meeting rate. Paper and poster submission deadline is March 8, 2015.

extension.uga.edu

Dear Readers:

UGA Integrated Pest Management Newsletter is a monthly journal for Researchers, Extension agents, Extension specialists, and others interested in pest management. It provides most updated information on legislation, regulations, and other issues concerning pest management in Georgia.

Do not regard the information in this newsletter as pest management recommendations. Consult the Georgia Pest Management Handbook and other Extension publications, or appropriate specialists for additional information.

Your input in this newsletter is encouraged. If you wish to be added to the mailing list, just call us at 706-542-1320.

Or write us:

Ashfaq Sial Ahmad

IPM Coordinator

Department of Entomology

University of Georgia

Athens, GA 30602

E-mail: ashsial@uga.edu

extension.uga.edu

AGRICULTURE AND NATURAL RESOURCES • FAMILY AND CONSUMER SCIENCES • 4-H YOUTH

An equal opportunity/affirmative action institution