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## **FUNDING OPPORTUNITIES**

- **SPECIALTY CROP RESEARCH INITIATIVE / CITRUS DISEASE RESEARCH AND EXTENSION (SCRI/CDRE)**

The National Institute of Food and Agriculture (NIFA) has released the FY 2014 RFA for the Specialty Crop Research Initiative / Citrus Disease Research and Extension (SCRI/CDRE) (**Funding Opportunity Number: USDA-NIFA-SCRI-004544**).

The purpose of The Specialty Crop Research Initiative (SCRI) Citrus Disease Research and Extension Program (CDRE) to conduct research and extension activities, technical assistance and development activities to: (a) combat citrus diseases and pests, both domestic and invasive and including huanglongbing and the Asian citrus psyllid, which pose imminent harm to United States citrus production and threaten the future viability of the citrus industry; and (b) provide support for the dissemination and commercialization of relevant information, techniques, and technologies discovered pursuant to research and extension activities funded through SCRI/CDRE and other research and extension projects targeting problems caused by citrus production diseases and invasive pests.

**STAKEHOLDER RELEVANCE STATEMENT DEADLINE: July 18, 2014.** You must submit a statement (pre-application) to be invited to submit a full application.

**INVITED FULL APPLICATION DEADLINE: September 29, 2014**

Here is the link for further information about this Funding Opportunity:

<http://www.nifa.usda.gov/fo/specialtycropresearchinitiativecitrusdiseaseresearchandextensionscricdre.cfm>. If you have questions after reading the RFA, please contact: Dr. Tom Bewick at [tbewick@nifa.usda.gov](mailto:tbewick@nifa.usda.gov) or (202) 401-3356, or Daniel Schmoldt [dschmoldt@nifa.usda.gov](mailto:dschmoldt@nifa.usda.gov) or (202) 720-4807.

- **ALFALFA AND FORAGE RESEARCH PROGRAM**

The National Institute of Food and Agriculture (NIFA) has released the FY 2014 RFA for the Alfalfa and Forage Research Program Grant (**Funding Opportunity Number: USDA-NIFA-OP-004536**).

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**Applications must be received by Grants.gov by 5:00 p.m. Eastern Time on Friday, July 11.**

Alfalfa and Forage Research Program (AFRP) will support the development of improved alfalfa forage and seed production systems. The program will support the development of improved production systems for other forage crops in future years, depending on the availability of funding. Proposals submitted to AFRP in FY 2014 should address one or more of the following priorities: (1) Improving alfalfa forage and seed yield through better nutrient, water and/or pest management; (2) Improving persistence of alfalfa stands by lessening biotic or abiotic stresses; (3) Improving alfalfa forage and seed harvesting and storage systems to optimize economic returns; (4) Improving estimates of alfalfa forage quality as an animal feed to increase forage usage in animal feeds; and/or (5) Breeding to address biotic and abiotic stresses that impact forage yield and persistence and the production of seed for propagation.

The amount available for support of this program in FY 2014 will be approximately \$1,295,000. **Since funding is limited in FY 2014, only applications dealing with alfalfa will be considered this year.**

Here is the link for further information about this Funding Opportunity:

<http://nifa.usda.gov/fo/alfalfaandforageresearchprogram.cfm> . If you have questions after reading the RFA, please contact: Tom Bewick at [tbewick@nifa.usda.gov](mailto:tbewick@nifa.usda.gov) or (202) 401-3356.

## **UPDATES FROM NIFA**

- **INVITATION TO PROVIDE INPUT TO BEGINNING FARMER AND RANCHER DEVELOPMENT PROGRAM**

Many of you are involved in supporting beginning farmer and ranchers so that they understand the tools available to address pest problems. If you are interested in providing input concerning NIFA's Beginning Farmer and Rancher Development Program (BFRDP), please read the following details. Note the upcoming deadlines.

Deadline for written input: July 3, 2014

Deadline to sign up for June 26 oral input: June 24, 2014

NIFA is seeking stakeholder input to the Beginning Farmer and Rancher Development Program (BFRDP), from applicants to the program; national, State, tribal and local organizations and others who operate beginning farmer and rancher programs; farmers and ranchers involved in beginning farmer and rancher training programs; and any other interested individuals or organizations. Stakeholder input is welcome at any time, but to be incorporated into planning for the 2015 cycle, it should be sent by July 3, 2014, via email to [bfrdp@nifa.usda.gov](mailto:bfrdp@nifa.usda.gov) (please put "comments" in the subject line) or via fax to 202/401-6070 addressed to BFRDP Program Staff.

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NIFA is interested in stakeholder input on features of the program that might be improved, while staying within the limits specified by Congress as amended in the 2014 Agriculture Act. NIFA is also seeking input on features of the Request for Applications and the application process that could be clarified or improved, including the timing of the application and award cycle.

NIFA invites written input as noted above, or oral input via a stakeholder input telephone conference call from 2-4pm EDT on Thursday, June 26, 2014. The number for the call is 888-844-9904, participant code 6824450#. Stakeholders can reserve in advance a three-minute time slot to provide oral comments (first-come, first-served), by contacting Omar Lugo at [olugo@nifa.usda.gov](mailto:olugo@nifa.usda.gov) or 202/401-6303 by close of business on June 24, 2014. Once all those who have reserved time have spoken, if time remains, comments of up to 3 minutes each will then be invited from those without reserved times.

#### Background for stakeholders providing input:

The Beginning Farmer and Rancher Development Program assists new farmers and ranchers through competitive grants to collaborations of organizations that use the grant funds to offer education, outreach, mentoring, and technical assistance programs to beginning farmers and ranchers.

From 2009-2012, NIFA made 145 BFRDP awards totaling \$71.5 million, taking place in nearly every state. Approximately half of those projects are still underway, scheduled for completion either this summer (those funded in 2011) or summer of 2015 (those funded in 2012). Program data that we gather from grantees indicates that over 50,000 new farmers and ranchers have participated in BFRDP-funded programs; that a majority (80-85%) gain knowledge and skills; and many take action as a result: 57% of those reporting changed farming practices and 26% changed business practices within one year after training.

In the 2014 Agriculture Act, Congress re-funded the program at \$100 million over five years, with some changes. For 2014 awards, NIFA released a Request for Applications (RFA) for proposals due June 12, 2014. NIFA held two webinars for applicants, and posted recordings of them on the program web site. NIFA plans to hold the review panels in late summer, notify applicants in early fall, and have funds in the hands of successful applicants by year's end. For 2015, NIFA aims to advance the cycle so that the review panels are not meeting during the peak growing season, and so that awards are made earlier in the year.

See <http://www.nifa.usda.gov/funding/bfrdp/bfrdp.html> for the BFRDP Authorizing Legislation, the 2014 RFA, Webinar recordings, Results and Impacts from the first round of grants, and more.

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## FROM THE FIELD

### BOXWOOD BLIGHT FOUND IN GEORGIA – DISEASE ALERT

Jean L. Williams-Woodward, Extension Plant Pathologist



*Boxwood blight infected dwarf English boxwood in GA showing tan foliage and dieback. (Image by Jean Williams-Woodward)*

Boxwood or Box Blight, caused by the fungus, *Cylindrocladium pseudonaviculatum* (syn. *Cylindrocladium buxicola* and *Calonectria pseudonaviculatum*) has been confirmed in two residential landscapes in the Buckhead area of Atlanta. The source of the introduction to one of the landscapes is unknown as new boxwood plants were not introduced into the landscape. The spores of the pathogen are very sticky and it is possible that the disease was introduced on worker's tools or clothing. Plants within the second landscape were newly introduced from NC. Once introduced, the disease can be devastating to boxwood in landscapes and nurseries.

**Hosts:** Dwarf English boxwood (*Buxus sempervirens* ‘Suffruticosa’) is highly susceptible and develops severe symptoms and rapid leaf drop. American or common boxwood (*B. sempervirens*) cultivars are also very susceptible. Cultivars of Littleleaf (Japanese) and Korean boxwood (*B. microphylla* and *B. sinica*, respectively) appear less susceptible because they don't show severe symptoms and leaf drop, but they are still susceptible. None of the commercial boxwood cultivars are immune to this disease. In fact, lesser susceptible (e.g. tolerant) cultivars may act as a ‘Trojan Horse’ introducing the disease into landscapes containing more susceptible cultivars. The value of lesser susceptible cultivars is in the establishment of new boxwood hedges. If planting a new area, use a more tolerant cultivar to lessen your disease pressure in subsequent years. The disease also affects other plants within the Buxaceae family, including *Pachysandra terminalis* (ground spurge) and *Sarcococca* sp. (sweet box).

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**History:** Boxwood blight was first identified in the USA in the fall of 2011. Since then, it has been identified within nurseries and/or landscapes in multiple states (CT, DE, MA, MD, NC, NJ, NY, OH, OR, PA, RI, VA) and several Canadian provinces. The disease has been known for over decade in the UK and Europe. This month (June 2014), it was also confirmed in a retail nursery in TN on plants originating from a large commercial nursery in OR. It is likely that infected plants were shipped into other states as well, including GA.



*Boxwood blight symptoms clockwise from upper left: Tan to gray leaf lesions with a darker purplish border on an English boxwood; Circular, tan spots with a brown border on upper leaves; Tan blighted leaves and bare stems on an infected plant; blackening of stems and browning foliage; and black stem lesions on bare branch tips. (Images by Jean Williams-Woodward)*

**Symptoms:** Initial symptoms of boxwood blight include circular, tan leaf spots with a dark purple or brown border and black stem lesions or blackening of the stems. Infected leaves become tan and readily drop from the plant leaving bare stems. Sections or whole plants turn tan and eventually die. The disease can resemble Volutella blight, except that the leaves often remain attached to the stems with Volutella, as well as symptoms of root stress or Phytophthora root disease.

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Box blight can move quickly through infected plants, gardens, and nurseries under favorable environmental conditions. Low light (shade), humid, warmer and wet conditions favor disease development. The pathogen requires extended periods of leaf wetness (24-48 hrs) to infect. Under these conditions, leaf spots can develop within days of infection. Disease development within the Atlanta landscapes may have been slowed due to the relatively dry conditions experienced this spring and maintenance fungicide treatments.

**Spread:** The disease is primarily spread via infected plants and plant debris. Infected leaves drop and can contaminate the soil beneath the plant. Infected leaves may also be carried by water, wind, on shoes or tires, or on animal fur as they rub against infected plants. The fungus produces white tufts of clustered spores on infected leaves and stems under wet conditions. The spores are very sticky and they will stick to pruning tools, shovels, worker's clothing and hands, as well as fur and feathers of wild and domestic animals (dogs, cats, rabbits, wild turkeys, etc.). Although it is very easy to spread this disease, the spores are not wind-borne. They must be moved on plants, tools, etc. or in water.



*White tufts of conidiophores and spores of boxwood blight produced from black stem lesions. The darker tufts are plant trichomes. (Image by Ansuya jogi)*

**Management:** The best control is exclusion. Do not introduce the disease on infected plants or tools. Inspect all new boxwood plants for symptoms of the disease. Be sure to check the lower leaf canopy and interior stems. Keep new plants isolated and separate from existing boxwoods. Do not apply fungicides to plants in isolation that would mask symptom development. Monitor plants for at least four weeks prior to introducing them into existing plantings.

If Boxwood blight is detected, the infected plants and all fallen leaf debris needs to be bagged on-site and removed from the area to be buried in a landfill to prevent its spread. Transport plants in closed bags. Leaf litter blowing from open trucks could spread the disease to plantings along the roadway. Fallen leaf debris should be vacuumed and bagged, burned on-site or buried.



*Fallen leaf litter beneath boxwood blight infected plants. Debris must be removed or buried to reduce disease spread. (Image by Jean Williams-Woodward)*

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Debris should not be composted. The fungus also produces microsclerotia (small clump of fungal hyphae) within roots and leaf debris of infected plants that allows the fungus to survive for years. Removal of existing garden soil and replacing with new soil is an option, but there is no guarantee that this will completely remove the pathogen.

Boxwood blight cannot be controlled with curative fungicide applications. Fungicides are only effective when applied preventively. Fungicide efficacy trials have shown that fungicides containing chlorothalonil (Daconil, Spectro, Concert II) and fludioxonil (Medallion, Palladium) provided the best control when applied preventively. To a lesser extent, fungicides containing azoxystrobin (Heritage), pyraclostrobin (Pageant), trifloxystrobin (Compass), and thiophanate methyl (Cleary 3336, OHP 6672) provided fair to good preventative control. Most are not labeled for use on either boxwood, *Cylindrocladium* or both; however, this is changing, so check labels. Remember, spraying plants after the disease is present will NOT control this disease.

**Summary:** Boxwood blight is an extremely contagious disease of boxwood and pachysandra. It was first detected in GA in an established landscape where new plant introductions have not occurred. It is likely that the disease is present in other locations and may be mistaken for more common diseases such as Volutella blight and root disease. Landscapers and growers need to be vigilant in scouting for disease symptoms and take all precautions to avoid introducing the disease into nurseries and properties.

#### **Recommendations for Landscapers:**

- Inspect boxwoods on all properties. Look for symptomatic plants. As weather patterns become conducive (wet, humid, warm), disease symptoms may become noticeable and spread rapidly.
- Submit suspect samples to the UGA Plant Disease Clinic in Athens through county extension offices for disease identification.
- Train employees and clients on how to identify boxwood blight. Educate them on how easily the disease spreads.
- Only purchase plants from nurseries that have a Boxwood Blight Compliance Agreement through their State Department of Agriculture. Many plants are brokered, so ask where plants were grown. Keep new plants in isolation and monitor for symptoms prior to installation.
- Never install or prune or work in boxwoods when plants are wet.
- Always visit non-infected landscape sites first. Move healthy to suspect diseased areas; never the other way around.
- Disinfect pruners and other tools frequently within and between different blocks of plants within the same landscape, and especially when moving to different landscapes.
  - The best product is Lysol Concentrate Disinfectant (containing 5.5% O-benzyl-p-chlorophenol). Mix 2.5 Tbsp per gallon of water. This can be made and kept in spray bottles. Tools need to be wet for at least 10 seconds and allowed to dry to be effective.
  - A 10% bleach solution (1:9 part Clorox or 1:14 part Clorox Concentrate) for at least a 10 second soak can also be used, but this will oxidize tools. Soak and then let dry.

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- When leaving a site suspected or known to have boxwood blight, all tools, shoes, and clothing must be disinfected.
- Get in the habit of wearing clean disposable booties or washing off debris and dirt entirely from soles of shoes between landscapes.
- Changing and laundering clothes between sites would be ideal; however, it's impractical. Wearing disposable paper pants is an option.

#### **Recommendations for Nurseries:**

- Follow the same recommendations as for landscapers.
- Start with disease-free propagation stock. If you only propagate in-house, continue this practice. If purchasing propagative material, only purchase from GA nurseries, which are not known to have the disease. If purchasing from out-of-state, only purchase from nurseries with a state Boxwood Blight Compliance Agreement.
  - Contact the Georgia Department of Agriculture to obtain a Compliance Agreement for shipment of Boxwood blight hosts for your nursery.
- Keep new plant introductions in an isolated holding area on a surface that can be easily cleaned of fallen plant debris. Debris should be vacuumed or swept regularly. Avoid blowing debris. Plants should be held for at least four weeks to monitor for symptom development.
- Avoid co-mingling plant material from different sources.
- Follow good sanitation practices. Clean debris and disinfect tools between blocks.
- Do not accept boxwood plant returns onto the nursery.
- Trucks, racks, carts and other equipment should be disinfested regularly (use Lysol Concentrate Disinfectant). All plant debris should be cleaned from the area.
- Avoid overhead watering and do not work in blocks when plants are wet.
- Train all employees on boxwood blight symptoms. Scout plants regularly. Submit any suspect plants to the UGA Plant Disease Clinic in Athens for identification.
- Remove suspect plants from blocks to reduce possible disease spread. Keep in isolation or discard by burning on-site or bagging and burying. Do not put infected plants into a cull pile.
- Establish a preventive fungicide spray program to reduce disease development. Keep records of all chemical applications, rates, and dates of application.
- Keep detailed records of incoming and out-going boxwoods and where plants have moved within the nursery.
- Don't forget to inspect any boxwoods planted on the grounds of the nursery. These too could become infected.

#### **Useful sites and links:**

**North Carolina cultivar evaluations, fungicide efficacy, management guidelines:**

<http://plantpathology.ces.ncsu.edu/pp-ornamentals/>

[http://www.ces.ncsu.edu/wp-content/uploads/2013/05/Box-blight-Guide-](http://www.ces.ncsu.edu/wp-content/uploads/2013/05/Box-blight-Guide-07.22.13.pdf)

[07.22.13.pdf](http://www.ces.ncsu.edu/wp-content/uploads/2013/05/final-Cult-trials-summary-2013.pdf) <http://www.ces.ncsu.edu/wp-content/uploads/2013/05/final-Cult-trials-summary-2013.pdf> **University of Connecticut Boxwood Blight information**

**and fact sheets:** <http://www.ct.gov/caes/cwp/view.asp?a=3756&q=500388>

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## UPCOMING EVENTS

### **August 6    UGA Turfgrass Field Day at UGA Griffin Campus**

Whether you're a golf course superintendent or a homeowner who wants the perfect lawn, there'll be something for you at a University of Georgia Turfgrass Field Day.

Come and get the latest information on how to care for your lawn or your golf course from UGA researchers and extension specialists. Field day includes such topics as controlling turf insects like mole crickets and white grubs and turf pests like crabgrass and other turf weeds.

Field days also include information on newly released UGA turfgrasses including tall fescues that were bred especially for Georgia conditions. There are also updates on the Seashore Paspalum breeding program at UGA. This turfgrass is especially popular along the coast as it can be irrigated with salt water.

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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.

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