

Colorado State Forest Service Insect and Disease Quarterly Report November 2009 Volume 1, Issue 1



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Bugs and Crud

The purpose of this newsletter is to facilitate the dissemination of information relevant to our districts and cooperators. I hope to include the following items in the quarterly newsletter: what's new in insect and disease literature, science and management; upcoming literature revisions and releases; technical bulletins, emerging issues; calendar of events; announcements and frequently asked questions.

For the many of you I haven't yet met, let me introduce myself. I moved to Colorado from Flagstaff, AZ, where I completed my doctorate in forestry in Dec 2008. My research emphasis was in forest entomology. Over the last several years I worked predominately on tree-pest interactions on tropical hardwoods. I also developed meth-

ods for using specific insect taxa for use as bioindicators. I was the coordinator of international programs for the School of Forestry.



Me at my desk in Ghana 2007

I'm excited to be joining the Colorado State Forest Service and look forward to exploring and working in the diverse ecosystems and forest types in Colorado.

I'd like to thank all the districts for submitting their annual insect and

disease reports. These reports help inform the annual Report on the Health of Colorado's Forests. And as a new member of the team, they help me understand what issues the districts have been dealing with and what upcoming insect and disease issues might affect them.

I'll be attending several meetings in Colorado and the western United States over the upcoming months and look forward to meeting other CSFS staff in person.

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Too Good to be True

If it sounds too good to be true, it probably is. I've reviewed a number of insect cure alls for mountain pine beetle and spruce budworm in the last month and they sure sound good but, it looks like the old adage sticks.

Berthoud's Agrihouse ODC is a colloidal chitosan. This product claims to activate the tree's immune system, increase pitch pro-

duction and reduce pine beetle egg production. However, a recent USFS technical report showed that while increased resin response occurred following ground application of the product, no impact on bluestain fungus lesion growth occurred and testing is still needed to assess the product's impacts on bark beetle production.

Current status: Not ready for recommendation, further assessment

needed.

Source: Effects of a chitosan product on oleoresin flow and resinous lesion formation in loblolly pine. K. Klepzig and B. Strom July 2008

Have you heard one lately? Forward it to me and I'll look into it.

Continues on page 2.





Verbenone Flakes?

Verbenone has been one of the leading semio-chemical players in the management of bark beetles in western forests. Verbenone acts as an anti-aggregate mimicking the bark beetle signal that says the site is occupied or the trees are full. Verbenone is most commonly deployed in pouches that can be affixed directly to the tree bole. In recent years, alternative delivery methods have been explored. One that is showing some success is verbenone flakes.

The flakes are approximately 1/8"x1/8" squares that can be used for area wide or individual tree applications and can be formulated to have similar elution rates as pouches.

Studies are currently being conducted to assess the use of verbenone flakes vs. pouches and their efficacy alone and with green leaf volatiles. The following is a summary of a few of the realized and expected pros and cons of flake use.

PRO Flakes

Can be used to reach typically inaccessible areas with difficult terrain or heavy snow.

Quickly treat large areas with aerial application.

Approved application system.

CON Flakes

Time consuming application process for individual trees.

Visually unappealing.

Similar efficacy results to pouches.



Verbenone flakes

Climate change as a topic may well challenge the Darwin-Huxley arguments on evolution. But is climate change a horseman of the apocalypse or a full guy?

FAQ: Bark Beetles and Climate Change

The first challenge in discussing climate change is agreeing on a definition. Some arguments are being made that depict climate change as a harbinger of planetary doom while others insist that climate change isn't happening.

We're frequently asked about the relationship between climate change and insects and disease. These questions occur more often when insects and diseases, such as the current MPB outbreak, are causing notice-

able changes on our landscapes. In fact there was an article last month in the Denver Examiner (see link at the end of article).

It is difficult to determine what impacts a few degrees in global climate change has on a landscape level. We've certainly seen patterns of warmer winters and more extended drought conditions.

These climatic conditions cause stress on individual trees, which increases susceptibility to insects

and disease. Over prolonged periods we may see changes in host/pest ranges. But they aren't the only agents at play. Our past management practices (i.e. fire policies, timber harvesting) have created a number of contributing factors.

<http://www.examiner.com/examiner/x-25061-Climate-Change-Examiner~y2009m10d22-Pine-beetles-as-a-harbinger-of-manmade-climate-change-destruction>

Natural Remedies Get Press

Another product receiving recent press is Alpha Natural's fertilizer product. This product claims to make trees less palatable to defoliators like western spruce budworm (WSBW) by increasing the foliar sugar content.

Studies have shown that foliar nutrients can vary between host trees and have impacts on feeding behaviors.

However, the Alpha Natural hasn't specified how their product increases foliar sugar content in spruce. A feeding assay on western spruce budworm established that host sugars ranged between 5.7 and 18.4%. WSBW preferred hosts with low sugar content and in laboratory feeding assays they performed well on various sugar concentrations, except

at concentrations above 29%. That's nearly twice the normal range of foliar sugars in host tree foliage.

Current status: Need more product information before recommended for use.

Source: The role of sugars in WSBW nutritional ecology. Clancy. 2004. Ecological Entomology.



Western spruce budworm



It is all about the beetles...

Bark beetles, bark beetles, bark beetles. English geneticist JBS Haldane once said that ‘God must have had an inordinate fondness for beetles’ but sometimes I think this beetle bonanza is a little absurd. With the mountain pine beetle grabbing up so many headlines it’s easy to forget about the other 349,999 species of beetles in the world. But an old beetle is becoming a new foe in black walnut throughout the western United

States. The walnut twig beetle and its associated canker disease, thousand canker disease, is a hot topic on the I&D scene in Colorado right now. Many CSFS districts are already experiencing calls, particularly in urban settings, regarding the decline and death of black walnuts which are commonly planted street and park trees.

The walnut twig beetle is a native beetle found across the range of Arizona walnut in Arizona, New

Mexico and Chihuahua, Mexico, where the beetle typically induces pruning in over shaded or injured small diameter limbs.



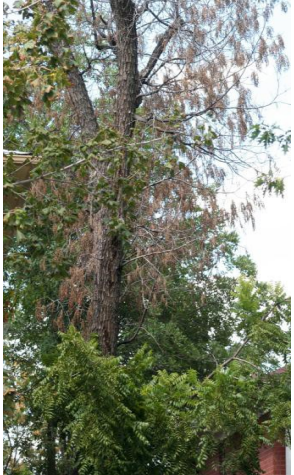
Adult WTB 1.7mm in length



Walnut twig beetle - an old player becomes a new foe.

...but maybe not the beetle you thought

In black walnut this beetle behaves differently. It rarely occurs in twigs, but is found colonizing larger limbs and the trunk of seemingly healthy trees. A *Geosmithia* fungus is associated with the beetle, although the relationship isn’t entirely clear. The fungus causes small, diffuse, brown to black cankers. These cankers expand quickly and eventually coalesce causing extensive girdling of the cambium. Interference with the cambium causes flagging and dieback in branches, as well as, tree mortality.



Thousand canker disease is being discussed at regional and national meetings with significant effort focused put on preventing the spread of TCD into the native black walnut forests of the eastern United States. Viable management and treatment options are also being discussed. For more information see:

<http://www.wci.colostate.edu/Assets/pdf/ThousandCankers.pdf>

Resources for you!

Several useful websites from public use image libraries to collections of extension documents are excellent resources. Here are some that you might find useful.

Public Use Image Libraries

- www.forestryimages.org
- www.bugwood.org
-

Insect and Disease Information

- Forest Insect and Disease Leaflets
www.fs.fed.us/r6/nr/fid/wofidls/
- National Extension Database
www.extension.org
- Colorado State University Extension Service
<http://www.ext.colostate.edu/>
- Western Forest Insects and Diseases
www.fs.fed.us/r6/nr/fid/wid.shtml
- USFS Tree List
www.fs.fed.us/database/feis/plants/tree/





Things to watch for:

- New updates to the Western Forest Insects and Diseases Catalogue
- New and updated Forest Insect and Disease Leaflets (FIDL's)
- Results from 2009 Aerial Survey Flights
- Statewide Forest Resource Assessment
- Results from Emerald Ash Borer and Gypsy Moth Detection and Monitoring Programs

Upcoming events & announcements

November 2009

- 4 - Aerial Survey Wrap-up meeting, Lakewood
- 5 - Tree Farm meeting, Fort Collins
- 5 - Introduction to emerald ash borer (EAB)*
- 6 - Colorado Bark Beetle Cooperative meeting, Vail
- 12 - EAB 101: The history of EAB*
- 19 - Front Range Urban Forestry Council, Fort Collins
- 19 - CSU Forest Health Lunch, CSU, Fort Collins

December 2009

- 3 - Pesticides and Biocontrol to Manage EAB*
- 7-11 Western North America Defoliators Technical Meeting, Portland, OR
- 11 - Mountain Pine Beetle Science Symposium, CSU

January 2010

- 7 - EAB Research Updates Part 1*
- 10 - Urban Forestry and Water, Berthoud

14 - EAB Research Updates Part 2*

February 2010

- 4 - Utilization in the Wake of EAB*
- 11 - Management of Woodlots to Prepare for EAB*
- 25 - Eastern Colorado Community Forestry Conference, Springfield

* Free web-based programs offered by Emerald Ash Borer University www.emeraldashborer.info

Submissions for inclusion in the newsletter:

Submit your event or announcement

What is your Frequently Asked Question?

Is there something you want to know more about?

Deadline for submission January 15, 2010.

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