

Notes from the CEO

By John Krist

Ventura County avocado growers have trained a worried eye for more than a year on events to the south of us, as the invasive polyphagous and Kuroshio shot hole borers have spread across Los Angeles, Orange, Riverside, San Bernardino and San Diego counties.

Members of a large family of tiny beetles, PSHB and KSHB are genetically distinct but otherwise identical. They excavate galleries inside the trunks and branches of woody plants, sow fungal spores throughout the tunnels, and then lay their eggs within. The newly hatched young feed on the fungi until it is time for them to emerge and repeat the cycle.

Meanwhile, the fungi spread and eventually block the tree's vascular system, either causing branch dieback or killing the tree entirely.

The beetles originated in Southeast Asia and probably made their way to this region in freight shipments containing wooden packing material. There have been at least two introductions, PSHB first showing up in ornamental plantings in Los Angeles County in 2003 and KSHB appearing more recently in San Diego County, where it has infested numerous commercial avocado groves.

Known to attack more than 200 species of woody plants, the beetles are a particular threat to about three dozen reproductive hosts, because that is where they most

commonly and extensively deposit the killing fungi. These include avocados but also such important native and landscaping plants as sycamores, oaks, willows, maples, cottonwoods and alders.

The widespread Los Angeles population had slowly been moving in our direction, with the trapping network deployed by the California Avocado Commission picking one up as near as Calabasas last year. But in early November 2015, PSHB was trapped in two locations in Ventura County – a green-waste processing facility in Ojai, and near a commercial avocado grove west

of Santa Paula. Subsequent trapping revealed an established breeding population in commercial groves in the Santa Paula area.

Growers who have attended any of the excellent workshops hosted by the Avocado Commission know that this pest-disease complex currently is impossible to control. Conventional pesticides are of little use, because the beetles spend most of their lives inside trees where they cannot be reached. Likewise, the fungi they spread cannot be controlled by any current material or treatment strategy.

Right now, the keys to controlling PSHB/KSHB are removing infested branches as soon as possible, to minimize damage to trees, and slowing the bug's spread, which means halting the movement of woody materials such as firewood or raw green waste from one area to another.

The potential risk posed by movement of woody plant debris was underscored by the trap detection at the Ojai mulching/composting facility. Current research indicates infested wood must be chipped to a particle size of less than an inch in diameter, and the chip pile then composted, or covered and left in place to solarize for at least six weeks in order to eliminate the beetles. It's safe to say most material now being trucked to green-waste recycling facilities – or to commercial orchards for use as mulch – does not meet those standards.

In response, and after discussions with me and with County Agricultural Commissioner Henry Gonzales, Supervisor Steve Bennett convened a study session during the Jan. 26 Board of Supervisors meeting about actions the county might take to reduce the threat. After input from a number of speakers, the supervisors directed Henry to assemble a task force to develop policy options for board consideration.

No matter what recommendations emerge from that process, it's imperative that growers take action themselves. This means scouting for and promptly removing infested vegetation. It also means being smart about mulch. Given the potential for loads of green waste coming out of Los Angeles County to transport PSHB/KSHB directly into receiving groves, every orchard owner who imports mulch from off site should require that it be certified as free of pests and pathogens.

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With the start of 2016, this newsletter is now published bimonthly. ... Please sign up for our email list, which will give you access to a wider range of information that's important to your business.

What's Inside?

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Why do the avocado trees look horrible?

By Ben Faber

The calls are coming in and have been for the last several months: The avocado trees are tired, worn out and look horrible. What's the problem?

Well, the answer is four years of drought, accumulated salts in the root zone, and irrigation practices that aren't removing the salts from the root zone. It sets up a situation of tip burn, but much more extensive than tip burn is the water stress that results from salt accumulation. Salts compete with roots for water and they act to pull water away from the roots. It is as if less water is being applied. The water stress sets up the trees for a fungal infection called variously leaf blight, stem blight and in young trees, death. We used to call this *Dothiorella* blight, but since the work of Akif Eskalen at UC Riverside, it turns out it is one of many fungi that cause this problem, most of them *Botryosphaeria*s.

The leaves show what would appear to be salt-burn damage, which increasingly causes leaf drop. In fact, there's often a pile of leaves under the canopy unless the wind has blown them away. The difference between this and salt burn is that there is not a regular pattern to it. Salt/tip burn always starts at the leaf tip and progressively moves back onto the main part of the leaf.

Leaf blight (I don't like to use bigger words than that. *Botryosphaeria* – try spelling it on the phone) doesn't follow this regular pattern. It's random. It can start on the margins, or in the middle of the leaf, or wherever it darn well pleases.

This is a decomposing fungus. Wherever there is organic matter – leaves, twigs, branches, fruit, whatever is dead on the ground – there is a decomposing fungus. When the fungus finds a stressed plant, it invades the most susceptible part of the plant, usually the leaf. It starts growing through the tissue and down the leaf petiole. It then starts growing down the dead part of the plant. Most of any tree is dead. All that stuff under the bark and cambium is dead tissue, although it still carries water. In mature trees, there is a capacity to close off the decay and limit it. In young trees (younger than 2 or so), the capacity is lacking and the fungus can keep on growing down to the union and kill the tree.

As can be imagined, this fungus does not discriminate amongst the type of plants it feeds on. It will go to water-stressed citrus, roses, apples, etc. It goes to every woody perennial that I am aware of. I've seen it on redwoods and eucalyptus. It especially goes after shallow-rooted species like avocado, which are the most prone to water-stress. Such as when a Santa

Ana blows in and the irrigation schedule is slow to respond. Such as when there is a heavy load of fruit. Fruit have stomata, and the more environmental stress the more water they lose and pull from the tree.

Now imagine a tree loaded with fruit, in the later summer, with a Santa Ana and salt stress. Boom! Fruit drops and leaf blight shows up. And the damage doesn't go away, until it so severe that the leaf drops and new leaves come on in the spring.

Hopefully this winter's rains will wash the salts from the root systems and refill the profile with high quality water. We are extremely reliant on winter rain to cover up the effects of the damage that irrigation water does to our soil and plants. And rain is the answer, as long as it's not too much.

— Ben Faber is a farm adviser in the University of California Cooperative Extension office in Ventura, specializing in soils, water, avocados and minor subtropicals. Contact him at bafaber@ucanr.edu.

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(Information about proper handling is available at <http://eskalenlab.ucr.edu/handouts/howtohandle.pdf>).

HLB detected in ACP

In late January, the California Department of Food and Agriculture announced that it had confirmed Huanglongbing in an Asian citrus psyllid sample (comprising 9 adults) collected in La Puente. Although it was located in a different community, the collection site is not far from Hacienda Heights and San Gabriel, the only two locations in California where HLB has been confirmed in citrus trees.

Crews immediately began collecting tissue samples from all host plants within 200 meters of the La Puente find, but no HLB-positive trees were found. The search subsequently expanded to an 800-meter radius and still has not turned up any positive trees.

This underscores a significant weakness in California's current HLB surveillance program, and it highlights a major challenge confronting us here as we begin developing a grove detection strategy for Ventura County growers.

There is currently only *(continued on page 3)*

Karen Ross to headline 2016 Spray Safe Event

Karen Ross, secretary of the California Department of Food and Agriculture, will deliver the keynote address March 2 at the fifth Spray Safe event in Ventura.

The event, which will be at the Ventura County Fairgrounds from 8 a.m. to 1:30 p.m., is free, but advance registration is required. To reserve a spot, fill out the form inserted into this newsletter and return it by fax or email. The registration deadline is Feb. 25.

Spray Safe is intended to prevent pesticide-exposure incidents and improve communication among growers, chemical applicators and farm employees. Originally developed by a coalition of farmers, pest control advisers, applicators and labor contractors concerned about drift incidents in Kern County, the program is being embraced by growers throughout California as a way of better protecting the health and safety of farmers, field crews and neighboring residents.

Karen Ross was appointed secretary of the California Department of Food and Agriculture on January 12, 2011, by Governor Edmund G. Brown Jr. Before that appointment, she served as president of the California Association of Winegrape Growers from 1996 to 2009, and as vice president of the Agricultural Council of California from 1989 to 1996. Before moving to California, Secretary Ross served as director of government relations for the Nebraska Rural Electric Association and as field representative for U.S. Senator Edward Zorinsky.

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one definitive means of determining whether a tree is infected by HLB: conventional DNA analysis of plant tissue. Unfortunately, it has been scientifically established that trees may take years to build up a sufficient bacterial load for this test to identify the presence of HLB. It also has been established that even a long-infected tree does not necessarily have bacteria distributed evenly throughout its canopy, leading to false negative findings based on where the sample was collected.

In La Puente, the HLB-positive ACP sample means there has to be at least one and probably more infected trees somewhere in the area. In fact, given that the infected ACP were feeding on the tree where they were collected, that tree almost certainly contains the bacterium. Yet the testing program can't find it. Meanwhile, the source of the bacteria that infected the psyllids remains out there somewhere, infecting new psyllids and additional trees.

ACP are extremely good at acquiring HLB – in fact, they appear to pick up the bacteria most readily while they are still in the larval stage – meaning they can provide important clues about where to look for infected trees. But unless we can find a way to narrow that gap between detection of an infected psyllid and confirmation of an infected tree, or to bypass psyllids altogether and detect HLB directly in a tree within days or weeks after it becomes infected, we will have almost no chance of staying ahead of the epidemic when it arrives.

Unfortunately, it has proven frustratingly difficult to develop faster alternatives to the slow DNA-based approach. Initially promising early detection technologies have shown inconsistent and often conflicting results when subjected to field tests. Until those techniques are improved or something better comes along, we are always going to be a step or two behind the disease.

Newsletter publication schedule changes

One of FBVC's most important responsibilities is keeping its members informed. Our communication program has many elements: a website, social media platforms, email, a magazine, and this newsletter, which has for many years been published monthly.

With the start of 2016, that changed. This newsletter is now published every other month, in February, April, June, August, October and December.

We increasingly rely on our periodic email news and announcements, which we send out several times each month, to disseminate information we think will be useful to our members. We post daily updates to our Facebook pages to help the community stay abreast of current events important to agriculture. We offer more detailed examinations of people, places and issues in our quarterly *Central Coast Farm & Ranch* magazine, and we are about to debut a new version of our website that will serve as an expanded information hub that can be updated more easily and frequently than the old one.

The paper newsletter remains a valuable way of reaching all of our members – especially those who don't use email and don't spend much time online – but it is a very costly way of doing so. We do not intend to eliminate it entirely, as some county Farm Bureaus have. But when we have so many other ways of reaching out, we no longer believe monthly production and distribution of a paper publication is cost-effective or necessary.

I encourage you to sign up for our email list, which will give you access to a wider range of information that's important to your business, as well as an electronic version of this now-bimonthly newsletter. Just email a request to admin@farmbureauvc.com.

— John Krist is chief executive officer of the Farm Bureau of Ventura County. Contact him at john@farmbureauvc.com.

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Member Benefits

TICKETS & DISCOUNTS

Farm Bureau members qualify for discounts on admission to many of Southern California's most popular theme parks and other attractions. To take advantage of any of these special offers, drop by the Farm Bureau office at 5156 McGrath St. in Ventura. You can also place an order and pay by phone, and have the tickets mailed to you. For more information, contact Cissy Perez-Haas at (805) 289-0155. Have your membership number handy. We accept Visa and MasterCard.

Aquarium of the Pacific — Adult (12+ yrs): \$19.95 (save \$9); Child (3-11 yrs): \$12.95 (save \$4). Valid thru 12/31/16.

California Adventure and Disneyland "1-Day Park Hopper" — Adult (10+ yrs): \$149 (save \$6); Child (3-9 yrs): \$144 (save \$5). Valid thru 12/31/16.

Cinemark & Century Theatres — Platinum ticket, valid all show times at all Cinemark & Century locations: \$8.75 (savings \$2.75). Additional premiums may be applied for specially priced films and/or events priced higher than normal box office. No expiration.

Knott's Berry Farm — Buena Park. Adult (12+ yrs) \$37.95 (save \$34.05); Junior (3-11 yrs) Senior (62+ yrs) \$34.95 (save \$7.05). Valid thru 12/31/2016.

Legoland — "E" tickets only. Adult (13+ yrs) \$78.95 (save \$14.05); Child (3-12 yrs) \$72.95 (save \$14.05). Includes 2nd day free ticket within 90 days of 1st visit.

Resort Hopper Ticket — "E" Ticket only. Adult (13+ yrs) \$87.95 (save \$29.05); Child (3-12 yrs) \$80.95 (save \$30.05). Includes 2 visits to Legoland, including new Waterpark (seasonal) and 2 visits to Sea Life Aquarium. Valid thru 12/31/2016.

Magic Mountain — \$45.50 (savings \$27.49) General use ticket (3+ yrs). Valid thru 9/25/16.

Regal Cinemas — Unrestricted tickets \$8.75 (regularly \$12.50 Sun-Thu, \$10 Fri.-Sat). Good at Edwards, Regal, Signature & United Artists. No expiration.

San Diego Safari Park — (Formerly Wild Animal Park) Adult-African Tram Safari: \$42.95 (save \$7.05) (12+ yrs); Child-African Tram Safari: \$33.95 (save \$6.05) (3-11 yrs). Valid thru 12/31/16. Africa Tram Safari includes admission, unlimited use of the Journey into Africa Tour, Conservation Carousel and other shows/exhibits.

San Diego Sea World – 1 Day Visit. Adult (10 yrs+) \$65 (save \$24); Child (3-9 yrs) \$65 (save \$18). Valid thru 12/31/16.

San Diego Zoo — Adult (12+ yrs): \$42.95 (save \$7.05). Child (3-11 yrs): \$33.95 (save \$6.05). Valid thru 12/31/16.

See's Candy gift certificate — One-pound box \$15.95 (Save \$2.05). No expiration.

"E Tickets" — Disneyland: 1 Day 1 Park, 2 Day 1 Park, 2 Day Park Hopper, 3 Day 1 Park, & 3 Day Park Hopper. Ask about SoCal Resident specials. **San Diego Sea World:** Buy 1 day, get a year of unlimited visits: Adult \$84 (10+ yrs) Child \$84 (3-9 yrs) Save \$5. Valid thru 12/31/16. Blackout dates apply. **Universal Studios:** Buy 1 day, get 2 days free (3+ yrs). \$84 (save \$11). 12 Month Pass (3+ yrs) \$139. Valid 12 months from first visit. Blackout dates apply after 1st visit and are subject to change.

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