

**CONTINUING
EDUCATION
COURSES:**

**CLASS
SCHEDULE**

- Annual UCCE/Mendocino College IPM Seminar: November 20, 2015 *See page 7 for flyer
- Pear update with Rachel Elkins and Lucia Verela: December 9, 2015 11:30am-1pm
- December 3, 2015 1-3pm
- December 9, 2015 9-11am
- December 10, 2015 6-8pm

*See page 6 for flyer

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Agricultural Newsletter

MENDOCINO COUNTY

FALL 2015

Agricultural Commissioner Update

Chuck Morse

It's a pleasure to present our 2015 Newsletter. There are many interesting articles and bits of information in this newsletter, ranging from bugs and diseases to gas pumps, with many additional topics along the way. The on-going drought has affected virtually all of our agricultural sectors again in 2015. See the article on page 13 for Greg Giusti's article on the drought's effect on our forest health.

Once again, our multiple programs that monitor for the introduction of destructive agricultural insect pests did not trap any target species, with one very notable exception. See Matt Daugherty's article on page 10 concerning the Light Brown Apple Moth program this year. Also, see Aaron Hult's article on page 2 for the detection trapping information with a focus on the European

Grape Vine Moth. As always, we are grateful for the cooperation of both residents and farmers throughout the county that facilitate our insect trappers placing and routinely servicing the various traps we maintain.

One of the very important functions carried out by the Department of Agriculture is the performance of all of the Weights and Measures activities for the county. Our Weights and Measures division conducted the annual fruit

frost thermometer testing for growers in mid-February and has been steadily working on a variety of commercial weighing and measuring devices as they come due on a calendar year basis. This is an on-going process throughout the year to get all the devices tested and sealed (those little round stickers on the gas pumps and scales). Another element of the Weights and Measures program is something called Quantity Control and Price Verification. See Ray Harrie's article on page 5, which details some of the division's work areas and has a focus on our consumer protection activities in 2015.

I hope you find this newsletter informative and I look forward to seeing many of you at our 2015 Grower Training courses in December.



The 2014 Crop Report is now available online

Continued on last page

European Grapevine Moth

Aaron Hult

On February 26th the first of over 1400 EGVM traps were deployed into grape vineyards throughout the county. The trapping season ended September 15th on a positive note. Finishing with zero catches state wide, after only having one find in 2014, it was announced that barring any finds in 2016, EGVM may possibly be deregulated prior to the

2016 grape harvest. Detection trapping will still continue in 2016, but deregulation means that EGVM Quarantine Compliance Agreements will be voided and no further actions will be taken regarding EGVM, including detection trapping. Thank you to all the growers and state and county workers that

worked diligently and cooperatively in order to eradicate this destructive pest from our state. If you would like more information, please visit <https://www.cdfa.ca.gov/Plant/egvm/index.html>

“The primary responsibilities of any Pest Detection program are the early detection and prompt eradication of serious agricultural pests from California”

-A. Hult

Pest Detection Trapping

Aaron Hult

Veteran Pest Detection (PD) trapper Ray Hall and revered Glassy Winged Sharp Shooter (GWSS) trapper Sheryl Greene both started their trapping seasons May 1st. Have you ever been driving down one of our forested highways and seen a green triangular insect trap attached to the trunk of a Fir tree and wondered what that was for? Or have you ever been out walking through a residential neighborhood and noticed a yellow sticky panel trap up in a privet tree? Well, those belong to Ray and Sheryl's respective trapping programs: Green Triangle=Gypsy Moth, Yellow Sticky=GWSS.

Besides the Gypsy Moth traps, which are placed at one mile intervals along commonly traveled wooded roadways, Ray is also responsible for placing and monitoring traps in the urban centers throughout Mendocino County. Pests that Ray is monitoring for include exotic fruit flies (Mediterranean, Melon, and Oriental), Japanese beetle, and light brown apple moth.

Sheryl, though she only traps for one pest, still covers as much ground and inspects as many traps as her counter-

part. As well as residential neighborhoods, Sheryl also places her yellow sticky traps in various host plants throughout urban settings and also in every retail nursery in our county.

So if you ever see Ray or Sheryl out checking their traps, stop and thank them for the job they do to keep our commercial crops healthy and our landscapes beautiful from the ravishes of potentially deleterious invasive insects.



Pesticide Use Monitoring

Diane Curry

I will start off by saying “Thank You All” for the timely submission of your monthly pesticide use reports. This office also appreciates the large number of operations who are submitting your use reports electronically. This has made Mendocino one of the top ten counties with the majority of our use reports being submitted electronically.

You or your employee(s) may have participated in an inspection conducted by one of our three biologists in the past year. We were able to conduct quit a few inspections in 14/15 as compared to 13/14. Overall compliance was very good. Most of the non-compliances were paperwork related, such as not having emergency medical care posting or not filling in A-9’s or A-8’s. These are violations that can usually be resolved during the visit, but could be easily avoided with a little end or beginning of the season housekeeping. Our synopsis sheets posted on the web are a good way to check your compliance health.

One of the issues that came up during an inspection was the use of an enclosed cab to meet the respiratory protection requirement. This issue is being addressed in detail in a separate article in this newsletter.

Also, I know that a number of you are using outside companies to do your training for your handlers and fieldworkers, which is great. Most of the companies do a fantastic job, but occasionally a few elements have been missed or documents may be missing.

Remember, it is still the responsibility of the property operator to assure that the training meets all the regulatory requirements in CCR 6724 (Handler Training) and 6764 (Fieldworker Training). Here are some quick checks when using an outside training company: Is the trainer qualified? Do they cover all the elements listed in CCR 6724 and/or 6764? Do they provide you with a written training program? Do they supply you with the signed training documents? If you need a respiratory program, do they provide you with one? (The respiratory plan should not be a one size fits all, it must be tailored to your operation. Specific personnel and the respirators that are assigned to them must be documented in the plan.)

If you are not sure about the completeness of your training and/or respiratory programs please call us and we would be happy to help. You can also set up a Compliance Assis-

tance inspection. This inspection gives you a one on one with one of our biologists with no enforcement consequences. We do, however, expect that any issues identified are corrected. Also, our Grower Synopsis Sheets are a very helpful tool to help you determine if your operation is in compliance with all applicable laws and regulations. Table #1 shows the total number of inspections conducted and the non-compliances documented from 7/1/14 thru 10/1/2015.

Also we received 7 pesticide illness investigations for FY 14/15. One was related to agriculture with no violations found.

We will be conducting our annual fieldworker training in the spring of 2016. Look for more information from our office in February.

Please don’t hesitate to contact the office if you have any questions or comments.

Type	Number	Number of Non-compliances	Section
Fieldworker Inspections	3	4	6761.1 Application Specific display.
Application Inspections	25	17	6726. Emergency Medical Care Posting
Headquarter Inspections-Grower	17	18	6724(a) Written training program 6724(b-e)Handler Training 6739(a) (p) Written Respiratory Program. 6739(d)(s)Medical Evaluation 6739(e)(p) Fit Test Records
Headquarter Pest Control Business	5	5	6726 Emergency medical Care. 6739 Voluntary use
Dealer	3	0	
Structural Fumigation	13	9	6726: Emergency Medical Care 6734: Decontamination Facility

Table 1

The Department of Pesticide Regulations revises the Personnel Protective Equipment regulations

Diane Curry

At the beginning of 2015 the Department of Pesticide Regulation (DPR) proposed to make revisions to CCR 6738. DPR wanted to reorganize and hopefully clarify the old regulations. The old regulations were developed over a period of years and DPR felt that structure was somewhat piecemeal which made them confusing and difficult to follow. The new regulations are organized into 5 separate areas: Personal Protective Equipment (PPE) care, PPE use, Selection of Protective Eyewear, Selection of gloves, and the last section consist of PPE exemptions. The new regulations went into effect on July 1, 2015. We will be covering the changes in detail during our 2015 grower meetings, but here are some

of the more significant changes:

Storage of PPE: Area where clean PPE is stored must be clean: "(2) Assure that all clean personal protective equipment, when not in use, is kept separate from personal clothing and in a clean and pesticide free, specifically designated place."

Type of eyewear: (a) Whenever protective eyewear is required, and the labeling does not identify a specific type, one of the following types of eyewear or eye protective devices bearing evidence of compliance with American National Standard for Occupational and Education Personal Eye and Face Protection Devices ANSI Z87.1 - 2010 must be worn.

Type of gloves: The employer shall assure that appropriate chemical-resistant

gloves are worn by employees when their use is required: (a) If the barrier material is specified by a category on the product labeling, the required glove material must be any from category A-H; (b) If use of chemical-resistant gloves is required by pesticide labeling without specification of a barrier material or category, the barrier material may be any cited in (a); (c) All barrier materials must be 14 mils or thicker except:(1) barrier laminate and polyethylene materials.

The complete new code section can be found on the DPR website at the following web address <http://www.cdpr.ca.gov/docs/legbills/calcode/030302.htm#a6738>

2016 Permit Issuance and 2015 Continuing Education Classes

Diane Curry

Permits will be issued by appointment only. This allows us to have a one-on-one with you in order to keep your permit current and up to date. It will also allow us time to update our maps, issue your private applicator card if you have one, and give you any training documents you may need. We will begin to

issue 2016 permits starting December 1, 2015. You can make an appointment by calling (707)234-6830. If you come to the office without an appointment you will not be able to get your permit that same day, so we highly recommend that you call ahead.

PAC cardholders with last names beginning with A-H are expiring at the end of 2015. If you have a PAC

(brown paper card) 6hrs of continuing education is required to renew your certificate. If you are short on hours you can access continuing education classes at http://www.cdpr.ca.gov/docs/license/cont_ed_cfm/classes.htm. If you don't wish to take continuing education classes you can take the recertification exam. Exams are given in the office by appointment only.

If you have never had a PAC license and want or need one you will need to take an exam before being issued a card.

Quantity Control and Weights and Measures

Ray Harrie

In our day to day lives we purchase and sell without giving much thought to the transactions themselves. Whether you are filling up the gas tank, buying groceries or clothes, or selling the cans and bottles that have accumulated in your recycling bin, Weights and Measures has been there ahead of you.

One of the little known pro-

grams that affects everyone every day is the Quantity Control program. This involves both the amount of product in the package and the accuracy of the labeled price whether it is shelf price, sales circular or item pricing.

How are you to know that that package of meat has the 2.4 pounds of product that the label says it has, or if that can of paint is really a gallon. For that matter, is that sheet of plywood really 4 feet

by 8 feet by ¾ inch? We at weights and measures show up at stores and packaging plants with scales, volumetric provers, tape measures and calipers to verify that the products are just what they say they are.

We also come into retail stores where we shop like a customer, randomly selecting items off the shelves to see if you are being charged through the scanner system as the advertisements claim.

Organic Registration and Certification, Explained

Aaron Hult

Have you been thinking about becoming an organic producer but don't know where to start the process? In an effort to demystify the process, I will outline the process for you here.

First off, what is the difference between being **registered** and being **certified**? Everyone that wants to be in the organic program must first **register** with the state by filling out an application. That application will then be reviewed by a county Agricultural official. If all the criteria are met, the application will be approved and the registration will be issued after paying the registration fees.

For those that will have gross sales over \$5000, federal law requires that they be **certified** by a third party certifier. There are many third party certifiers

to choose from; they can all be found at the following link: <http://www.ams.usda.gov/resources/organic-certifying-agents> Operations that gross less than \$5000 can choose to become **certified** as well, but it isn't required. The certifier will help develop a systems plan and will help navigate all the requirements set out by the National Organic Program. Fees vary from one certifier to the next, but most fees are based on the gross sales of the operation.

In order to qualify for organic registration, the person/business applying will have to verify that no prohibited substances were applied to the growing grounds within the last three years. The state registration application consists of contact information, business name, site location/s etc. If the person applying is not the owner of the property, then a letter will need to be submitted from the owner saying that they

give permission for organic farming operations to take place on their property. If organically approved substances have been applied to the growing grounds, then a detailed substance list for the last three years of operation will need to be provided.

For those that won't be certified, a site map will need to be submitted. Finally, a list of the commodities that you will grow/produce, along with an estimate of gross sales for each is required. An application can be obtained and filled out online by going to <https://organic.cdfa.ca.gov/OrganicReg/>

Any further questions can be directed to Aaron Hult at the Mendocino County Agricultural Commissioner's Office, either by phone (707) 234-6830, or by email

agcomm@co.mendocino.ca.us



2015 Continuing Education Classes

This year's continuing education classes will be held in the Mendocino County Department of Agriculture's conference room at 890 N. Bush St. in Ukiah, on the corner of Low Gap Road and Bush Street. All growers who have private applicator certificates (tan cards) are welcome to attend one of the upcoming classes on pesticide laws and regulations given by the Mendocino County Agricultural Commissioner's Office. Local pest control operators and all other persons involved with pesticide use are also invited. The classes are free. Attendees will receive 2 hours of continuing education credit in pesticide laws and regulations. *Those wishing to attend MUST sign up in advance for one of the following classes, by calling the Department of Agriculture at 234-6830.*

Class Schedule

Afternoon	Thursday	December 03, 2015	1:00PM – 3:00PM
Morning	Wednesday	December 09, 2015	9:00AM- 11:00AM
PEAR UPDATE	Wednesday	December 09, 2015	11:30AM – 1:00PM
Evening	Thursday	December 10, 2015	6:00PM – 8:00PM

***This year the Pear Update will be a separate meeting held on Wednesday December 9, 2015 from 11:30AM to 1:00PM. Rachel Elkins and Lucia Varela with the UC Farm Advisors will be discussing pear related issues. This meeting will be limited to pear growers and those involved in pear production.

Private Applicator Cards beginning with letters A-H will expire December 31, 2015. Some permits and private applicator cards not falling into the A-H letter range may also expire this year, so please check the expiration dates on both your permit and private applicator card.

If you hold a private applicator card that expires in 2015 and you do not have the 6 hours of continuing education required for renewal by December 31st, you will have to take the written exam. All other private applicator cardholders should be building up their hours each year to a total of six (6) hours of continuing education before the private applicator card expires.

Those that have received continuing education from other sources must send proof to the Mendocino County Department of Agriculture. A verification of attendance for each event is required in order to receive credit.

2015 UCCE Mendocino and Lake County

IPM Seminar

Friday Nov 20th 8am – 5pm

Rod Shippey Hall, UC Hopland Research and Extension Center

4070 University Rd, Hopland, CA

Integrated pest management (IPM) is an ecosystem-based strategy that focuses on long-term prevention of pests or their damage through a combination of techniques such as biological control, habitat manipulation, modification of cultural practices, and use of resistant varieties. Pesticides are used only after monitoring indicates they are needed according to established guidelines, and treatments are made with the goal of removing only the target organism. Pest control materials are selected and applied in a manner that minimizes risks to human health, beneficial and nontarget organisms, and the environment.

This event is sponsored by; UC Cooperative Extension Mendocino and Lake County Offices, Mendocino County Department of Agriculture, Lake County Winegrape Commission, Mendocino WineGrowers Inc. and Mendocino College Agricultural Department.

List of speakers and topics

Kim Rodrigues (UC HREC Director): Welcome and Introductions

Jim Xerogeanes: Moderator

Harvard Wong (CDFA): Personal Protective Equipment Regulatory Revisions

Glenn McGourty (UCCE): Update on Controlling Ice Nucleating Bacteria.

Lucia Varela (UCCE) and Broc Zoller (PCA): Biology of Virginia Creeper Leaf Hopper in 2015 Season and Organic Pesticide Trial.

Dr. Houston Wilson, Dept of Environmental Science and Policy Management UC Berkeley: Update on VCLH Bio Control.

Greg Giusti (UCCE): A tail of Two Squirrels: Biology and Control of Squirrels in Agricultural Crops.

Virginia Bolshakova, (UCCE): An update on Honey Bee Colony Collapse Disorder and Challenges to Native Pollinators.

Jim Xerogeanes, Mendocino College Agriculture Department: Controlling Wood Boring Insects in Wine Barrels.

Tony Linegar, Sonoma County Agriculture Department: Status of Invasive Weed Control Programs in California, and Bio Control of Weeds.

Cost to register for this seminar is \$35 if paid by Nov 13th or \$45 for late registrations. Credit Card registration is preferred. Go to this secure website to register and pay with a credit card. Online registration closes Nov 8th 5pm.

<http://ucanr.edu/survey/survey.cfm?surveynumber=16192>

You can also pay by check, make your check out to UC REGENTS and mail to; UCCE, 890 N.Bush St, Ukiah, CA. 95482 (Payment at the door is by Check Only, sorry NO CASH)

Registration fees cover cost of event and provides for lunch and break snacks.

7 hours of Continuing Education Units have been applied for from CDFA for this event.



From Farm to Table

History and Overview of California's Certified Farmer's Markets

Andy Walker

"To a large extent, the most important—and most fragile—asset a certified farmers' market possesses is its integrity."

-Andy Walker

One way to see Mendocino County's diversity of agriculture on display is to visit one of its certified farmers' markets (CFM's). The statewide certified farmers' market program, run by the California Department of Food and Agriculture, is an offshoot of the Direct Marketing Act of 1977. A brief history; The Direct Marketing Act is the result of a labor dispute during the height of the harvest season in the summer of 1976, where 29 canneries throughout the state went on strike. Although the strike lasted only eleven days, it was the costliest agricultural strike in the state's history. For example, the entire apricot crop, which had not been harvested when the walkout began, was lost. Determined to salvage what they could of their crops during the strike, grower's petitioned Governor Jerry Brown for an exemption to the standardization regulations. In 1977, Governor Jerry Brown signed the Direct Marketing Act, allowing growers to sell their agricultural crops directly to the public. As a result, in 1979, the first farmers market was born in Los Angeles County consisting of four farmers in the parking lot of a church in Gardena, Ca. This humble beginning has quickly grown into a vigorous statewide movement consisting of approximately 700 weekly certified markets.

So, what's the purpose of the CFMs? Just as the intent of the Direct Marketing Act is to support farmers, the purpose of CFMs also is to support California farmers. CFMs serve as a meeting place for California farmers who practice the "agricultural arts" to sell their products directly to the consumer. In order to sell fresh fruit, cut flowers, vegetables, and other Agricultural products at a certified farmers market producers must have direct or actual responsibility for all the actions of planting, growing, fertilizing, irrigating, cultivating, pest control, and harvesting. CFM's allow the producer to be exempt from complying with some standardization regulations. Where does the agricultural department fit in this equation?



To a large extent, the most important-and most fragile-asset a certified farmers' market possesses is its integrity. Customers need to be able to trust that the fresh fruits, nuts, vegetables and other agricultural commodities were actually grown by the producer. To achieve market integrity, inspectors with the agricultural department conduct individual market inspections for compliance with direct marketing laws and regulations. Every year, Department of Agriculture biologists conduct a minimum of two market inspections at each CFM. There are seven CFMs in Mendocino County: Ukiah, Mendocino, Redwood Valley, Laytonville, Willits, Boonville, and Fort Bragg. Some of the key elements inspectors are looking for include a county sealed scale if selling commodity by weight, accurate labeling, no misleading advertising, and that the quality meets minimum standards. Inspectors make sure that the commodities offered for sale by the producer are actually grown by the producer by checking the Certified Producers Certificate (CPC) that is issued by the county agricultural office. This is done at the market as well as at the point of production, where an inspector physically goes to the producers' property and conducts a growing ground inspection. If the producer is found in violation of direct marketing law, a non-compliance is issued to the producer and possibly the market. Some non-compliances can result in a fine being levied. Inspections by county inspectors on the market and its producers maintain a high level of market integrity, which in turn fosters consumer loyalty and trust.

Mendocino County's Certified Farmers' Markets have become social gathering places where local food goes from the farm to the communities table. If you're looking to support local county producers who offer a diversity of agriculture stop by one of Mendocino County's certified farmers' markets.

Enclosed Cabs: What You Need to Know

Matt Daugherty

An enclosed cab is defined by the EPA as ***a cab with a non-porous barrier that totally surrounds the occupant(s) of the cab and prevents dermal contact with pesticides that are being applied outside of the cab.*** Enclosed cabs can be any tractor, truck, or car with windows and doors that can close.

The Department of Pesticide Regulation (DPR) specifies in their Pesticide Safety Information series that there are two types of enclosed cabs. Cabs that only have doors and windows to provide dermal protection and cabs that also have special air filters that can provide respiratory protection. In order for a cab to be acceptable for respiratory protection, it needs to be certified by the American Society of Agricultural Engineers (ASAE) Standard S-525.

In California, there are currently **no** manufacturers recognized by DPR that build enclosed cabs acceptable for respiratory protection from pesticides. In the past, there were some companies that built enclosed cabs that were approved by ASAE standards, but this is no longer the case. In other words if the

pesticide you are applying requires respiratory protection on the label, it needs to be worn inside the enclosed cab.

If you think you might have an older enclosed cab that does meet the ASAE S-525 requirements, you can bring the documentation to the Mendocino County Ag Dept. and we can review it with you.



Light Brown Apple Moth

Matt Daugherty

This spring brought an unfortunate surprise for the Ag Department in the form of the detection of multiple Light Brown Apple Moth (LBAM) adults just south of Fort Bragg. One detection in November of last year triggered a high density delimitation trapping survey (25 traps/mi²) on April 1st 2015.

Within the first three weeks of trapping, three adult moths were detected which expanded our high density trapping area and triggered a state quarantine boundary (Fig. 1). On June 10th we began deploying saturation traps (100 traps/mi²) with the help of state trappers. This decision was made in order to



Figure 2: LBAM adult male on a trap insert.

determine the severity and outer boundaries of the infestation. Throughout the summer we continued to detect adult LBAM moths with the majority of the detections occurring in July (65). At the height of our delimitation trapping we had 527 traps de-

ployed in Fort Bragg and currently have a quarantine boundary encompassing approximately 31 mi².

To date we have detected 106 adult LBAM in the Fort Bragg area.



Figure 1: Current LBAM quarantine boundary

Pseudorabies and Ongoing Eradication Efforts

Andy walker

Pseudorabies (also known as Aujeszky's disease or "mad itch") is a viral disease most prevalent in swine, often causing newborn piglets to die. Older pigs can survive infection, becoming carriers of the pseudorabies virus (PRV) for life. Pigs, being the primary host and reservoir of PRV, are the principal source of infection for a diverse range of secondary hosts such as cattle, sheep, goats, dogs, cats, rats, and mice. Secondary hosts infected with the pseudorabies virus from swine die. Infected cattle and sheep can first show signs of pseudorabies by scratching and biting themselves, the symptom that gives the virus its nickname. In dogs and cats, pseudorabies can cause sudden death. The virus does not cause illness in humans, horses or birds. Pseudorabies is a reportable disease and has been successfully eradicated from the vast majority of the USA.

The United States Department of Agriculture/Animal and Plant Health Inspection Service/Wildlife Services (USDA/APHIS/WS) has tested 1,540 pigs throughout California for PRV between 2007-2015. In that time frame, USDA Wildlife Services has tested 50 pigs for PRV in Mendocino County. On April 4, 2015 a feral pig found in the Ukiah area tested positive for the virus, according to the U.S. Army Corps of Engineers. Ongoing monitoring of feral pigs conducted by USDA wildlife specialists has not detected anymore finds in Mendocino County. PRV has been detected by USDA WS in 8 counties: Alameda, Colusa, Kern, Mendocino, Merced, San Luis Obispo, Santa Clara, and Sonoma. The positive finds are located in mostly coastal counties. Rebecca L. Mihalco, a

Wildlife Disease Biologist with USDA APHIS Wildlife Services says there is no clear evidence to explain the coastal trend of positive samples. Currently, there is a vaccine available for pigs. However, there is no pseudorabies vaccine for household pets. If any household pet is suspected of coming into contact with a feral pig or eating feral pig meat, a veterinarian should be contacted immediately.



The 8 counties in which pseudorabies virus has been detected. Courtesy of Rebecca L. Mihalco, Wildlife Disease Biologist with USDA APHIS Wildlife Services

Stinkwort Update

Matt Daugherty

Stinkwort (*Dittrichia graveolans* (L.) Greuter) continues to be a growing issue here in Mendocino County. The department staff is continuing to find new satellite locations around the county and continuing to work on established sites. It is encouraging to see that some sites are showing major progress since Stinkwort was first found in the county, five years ago.

One of the major updates is the discovery of Stinkwort around Lake Mendocino. The weed has been observed around the entire perimeter of the lake with some areas

more heavily infested than others. The department is collaborating with the Army Corps of Engineers to try and combat this infestation.

Other new sites have been found in Talmage and Redwood Valley which have been worked on heavily this season. The County Ag Dept. will continue to manage the heavily infested sites around the county. Newer sites that contain small numbers of plants are proving easier to eradicate. For more information about Stinkwort visit the links provided below.

Calflora: http://www.calflora.org/cgi-bin/species_query.cgi?where-calrecnum=8482

Cal IPC: http://www.cal-ipc.org/ip/management/plant_profiles/Dittrichia_graveolens.php



Figure 1: Stinkwort growing in sidewalk.



Figure 2: Large field of Stinkwort.

Drought, Trees, and Water

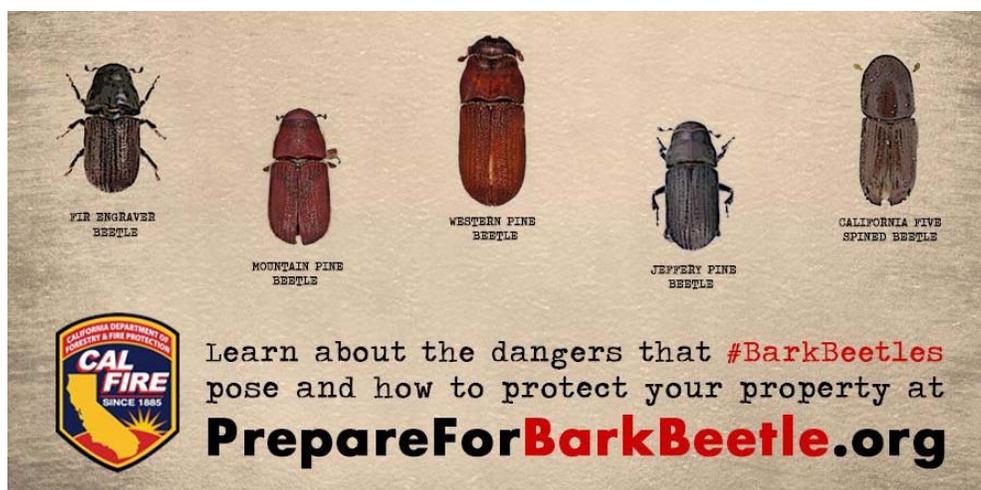
Greg Giusti,

When we think of drought we often don't necessarily think of the water cycle. It's this water cycle moving through the environment that is the link to how vegetation reacts to drought. There is little argument that the greatest reservoir in California is the ground. Ground water storage far surpasses any above ground catchments that have been constructed. Water moving through the soil profile provides the moisture taken up by plants during the summer months. It is this moisture, moving through the xylem ($\frac{1}{2}$ of the cambial layer of cells, the other $\frac{1}{2}$ being the phloem) which addresses the water needs of a plant. A portion of this moisture is converted to resin (sap). Resins are produced in special resin cells in plants, and are also produced when an injury occurs to the plant. Resins can be produced through the bark of a tree, the flowers of an herb, or the buds of a shrub. Resins are plant products that:

- are not soluble in water,
- harden when exposed to air,
- do not play a role in the fundamental processes of the plant, and
- are generally produced by woody plants.

Consequently, when a beetle attacks a tree (usually a conifer) under normal conditions the tree would produce resin and force the insect out of the boring hole. When water flows are constrained this inhibits a plants ability to produce resin. In this case, the beetle can successfully colonize the tree further damaging the cambial layer and thus further weakening the tree. Once colonized, the tree becomes a source of inoculum for surrounding trees which are also suffering from lack of water.

In simple terms, a drought disrupts the water cycle within a tree (plant) inhibiting the physiological processes that afford protection from disease and insects.





**Mendocino County
Department of Agriculture
Weights and Measures**

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Mission Statement

To serve the citizens of Mendocino County by promoting agriculture, fostering public confidence in the marketplace through our inspection programs, protecting the environment and the public by regulating and mitigating pesticide use, and protecting against alien and exotic pests through eradication and preventing introduction of new pest species.

Office Hours:

Monday through Friday

8 am –12 pm and 1pm to 5 pm

Closed Mondays from 3 to 5 pm for staff meetings

Continued from first page...

Our newest Biologists on staff now have more than a year under their belts and are continuing to learn the enforcement codes and other nuances of the Department's programs. Andy Walker and Matt Daugherty are a welcome addition and were, once again, thrown into the Light Brown Apple Moth response (in Fort Bragg this year) and were invaluable in addressing the other programs they are assigned as well. They also are becoming more experienced in the Weights and Measures programs and other activities our Department involved in.

I would like to thank all the producers that respond to the Crop Report questionnaires we mail out annually to gather the needed data for the crop report. The 2014 Crop Report was finished on October 22nd and can be viewed on the Department's web page: <http://www.co.mendocino.ca.us/agriculture> under the "Crop Statistics" tab on the left-hand side of the page.

Chuck Morse