



University of California Cooperative Extension  
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# Orchard Notes

January 2010

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## Submitted by:

Janine Hasey  
U.C. Farm Advisor  
Sutter/Yuba Counties

## 15<sup>th</sup> ANNUAL SACRAMENTO VALLEY CLING PEACH DAY

*Wednesday, January 27, 2010*

*8:30 a.m. – 12:00 noon / Lunch 12:00 – 1:00 p.m.  
Agricultural Building, 142 Garden Highway, Yuba City*

### Meeting Program

- 8:30 a.m. Registration, Coffee and Danish, *Courtesy of John Taylor Fertilizers*  
8:55 a.m. Welcome, *Janine Hasey, UC Farm Advisor, Sutter and Yuba Counties*

### Insect Management

- 9:00 a.m. Efficacy of newer insecticides for oriental fruit moth & peach twig borer control  
*Janine Hasey, UC Farm Advisor, Sutter and Yuba Counties*

### Labor Saving Strategies – Varieties

- 9:30 a.m. Breeding Peach Varieties for mechanical harvest  
*Tom Gradziel, Pomologist, UC Davis*  
10:00 a.m. California Cling Peach Board Business Session – J.D. Allen

### Break

- 10:20 a.m. Update of laws and regulations  
*Jan Kendel, Ag Biologist, Sutter County Agricultural Department*

## Labor Saving Strategies – Thinning Studies

- 10:35 a.m. Mechanical fruit thinning and chemical thinning 2009 results  
*Janine Hasey, UC Farm Advisor, Sutter and Yuba Counties*
- 11:00 a.m. First year results using the Darwin string blossom thinner  
*Roger Duncan, UC Farm Advisor, Stanislaus County*
- 11:30 a.m. Mechanical blossom thinning of freestones  
*Scott Johnson, Pomology Specialist, UC Kearney Ag Center*

### Nutrition

- 11:45 a.m. Zinc nutrition update  
*Scott Johnson, Pomology Specialist, UC Kearney Ag Center*

### Lunch

- 12:00 Noon Mexican lunch provided by California Cling Peach Board.

Please RSVP to the Sutter/Yuba Extension office at (530) 822-7515 by **Monday, January 25<sup>th</sup>** if you plan to stay for lunch. You may also fax to (530)673-5368 or email: [msearch@ucdavis.edu](mailto:msearch@ucdavis.edu) to have your name put on the list for lunch.

### Meeting Sponsored by:

University of California Cooperative Extension, Sutter & Yuba Counties

### Co-Sponsored by:

Sutter County Agricultural Department

**PCA and Private Applicator Credit** – 1.0 hour, includes .5 hour of regulations  
**CCA Credit Pending** – 2.5 hours

### Upcoming Meetings!

**February 25, 2010**  
(Afternoon)

**Sutter/Yuba/Colusa Walnut Day**  
Veterans Memorial Hall, Yuba City  
Contact: 530-822-7515  
530-458-0570  
(Program in Feb. issue of Orchard Notes)

**March 2, 2010**

**Pruning Young Walnut Trees;  
Howard Pruning Plot**  
Nickels Soil Laboratory, Arbuckle  
Contact: 530-822-7515  
530-458-0570

## **An assessment of multiple approaches for controlling gophers in orchards**

Roger A. Baldwin, UC IPM Wildlife Pest Management Advisor, Kearney Agricultural Center

### **Pocket Gopher Control Options**

Pocket gophers cause extensive damage to many crops throughout California. Many tools are available for controlling gophers including trapping, fumigation with aluminum phosphide, poison baits, and the use of a gas explosive device. Trapping gophers has been a common method for controlling gophers for many years. However, a new trap called the Gophinator (Trapline Products, Menlo Park, CA) is now available that may increase efficiency of trapping. Additionally, combining aluminum phosphide fumigation with trapping may increase effectiveness, as gophers will occasionally spring traps without getting captured. In these situations, gophers often become trap shy and are much more difficult to capture. Treating these tunnel systems with aluminum phosphide shortly after trapping could remove these individuals from the population thereby increasing gopher control in orchards. Poison baiting has often been used to control gophers. Efficacy of baiting has varied widely, although strychnine has traditionally been most effective. Gas explosive devices may also be effective. These devices combust a mixture of propane and oxygen within tunnel systems, thereby killing gophers through concussive force while also destroying the burrow system.

### **Testing Efficacy**

All of these methods are currently allowable techniques for controlling gophers in California, although the efficacy and efficiency of these approaches, particularly in comparison to one another, remain unclear. Therefore, I tested these control strategies at Laguna Ranch, Sebastopol, CA, from 6 April – 8 May, 2009, to estimate the efficacy and efficiency of these approaches. Plots of all three treatment types (trapping + aluminum phosphide, baiting with strychnine, gas explosive device [Rodenator®]) were established within each block. Based on absolute indices (number of sites with any gopher sign after treatment/number of sites with any gopher sign before treatment), Rodenator® control ranged from 0–55%, baiting control ranged from 30–56%, and trapping + fumigation ranged from 74–90%. Relative index values (number of gopher mounds and feeder holes after treatment/number of gopher mounds and feeder holes before treatment) mirrored absolute indices, with substantial reductions in gopher sign for all trapping + fumigation plots (range = 91–96%); only 2 of 3 baiting (range = 22–81%) and Rodenator® (range = 0–86%) plots indicated substantially reduced gopher sign. The time required to apply each treatment was relatively similar between baiting, trapping, and Rodenator® treatments (90–106 seconds); fumigation treatments were substantially longer (260 seconds). Approximate costs per acre for each treatment were \$420, \$396, and \$252 for baiting, Rodenator®, and trapping + fumigation, respectively.

### **Conclusions**

To be effective, control measures need to result in a minimum of a 70% reduction in plots with gopher activity; values of 80–90% are preferable. Trapping + fumigation met this minimum criterion in all three plots, and met the more rigorous criterion in 2 of 3 plots. Even the one plot that fell short of an 80% reduction in plots with gopher activity yielded a 92% reduction in overall gopher activity. In addition to being more efficacious, trapping + fumigation was also more cost effective. Therefore, trapping + fumigation appears to be an effective method for controlling gophers. Baiting and Rodenator® treatments did somewhat reduce gopher activity in most plots, but these levels of control fell well below the minimum threshold for effectiveness (70%). As such, growers may realize short-term benefits from control, but will have to apply equal effort for control the following year, whereas more effective control measures (80–90%) would reduce the cost of control in subsequent years.

## Recommendations

- Although controlling pocket gophers is possible year-round, control methods are best conducted from winter through early spring when soil moisture is high. Gophers mound more during this period; identifying fresh mounds is key to effective control.
- Trapping and fumigation with aluminum phosphide appear to be the most effective methods for controlling pocket gophers. Areas should be treated a minimum of two times to increase overall control.
- Baiting and Rodenator® treatments were less effective following two treatment applications. The effectiveness of these methods would likely increase with further applications. However, these added treatments would increase the cost of control.
- The size of gopher populations should be assessed before and after treatment to determine the effectiveness of treatment applications. An easy method to index gopher populations is to establish 20–25 30x30 ft plots evenly throughout your treatment area. A few days before treating the field, flatten all old mounds within each plot (using your boot or a rake is a good way to flatten mounds). Three days later, check all survey plots for new mounds. Divide the number of plots with fresh mounds by the total number of plots and multiply by 100. This provides an estimate of the percent of your field with gopher activity. Repeat this process 2–5 days after applying control treatments (i.e., baiting, trapping, fumigation, etc.). This will give you the percent of your field occupied by gophers before and after treatment and will let you estimate how effective your control measures were. Ideally, you should work to reduce gopher populations by >80–90% to observe substantial reductions in gopher populations the following year.
- Once treatment applications are finished, continue to monitor fields periodically for reinvading gophers. Pay particular attention to the perimeter of fields, as these are the areas that gophers will first reinvade. Controlling gophers along the perimeter of fields will keep gopher populations from building back up throughout your fields.



## Newsletter Renewal

The 2010 Newsletter Renewal form has been sent to you. Due to limited resources, we are encouraging clientele to change their newsletter delivery method from US Mail to E-Mail. When a new issue is posted online, an email is generated to each subscriber, allowing them access to the latest information and all previously published newsletters. To insure uninterrupted delivery of future newsletters (electronically or via mail), please return this form to our office before January 31, 2010. The mail list derived from the return of a renewal is used expressly by the Sutter/Yuba UCCE Office. Our lists are not given or sold to other UCCE Offices, the University of California or companies wishing to sell or advertise their products to you.

## Freezing Temperature Effects on Walnuts

One of the benefits of subscribing to my newsletters by receiving an email notice is that you'll receive "Email Extra" editions that are only sent by email to distribute timely information quickly. I sent an "Orchard Notes" on December 10, 2009 with several articles on freezing temperature effects on walnuts and what to do if your young walnut trees sustained damage.

The link is [http://cesutter.ucdavis.edu/newsletterfiles/Orchard\\_Notes18960.pdf](http://cesutter.ucdavis.edu/newsletterfiles/Orchard_Notes18960.pdf). There are also hard copies available in our office.