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Fruit and Nut Notes

Serving Solano & Yolo Counties
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SACRAMENTO VALLEY ALMOND NEWS

In This Issue:

40th Annual Almond Conference Moved to Sacramento

Franz Niederholzer, UCCE Farm Advisor, Sutter, Yuba, & Colusa Counties

The Annual Almond Conference will be held in 2012 in Sacramento, not Modesto. This year the conference will run from Tuesday, December 11 to Thursday, December 13 at the Sacramento Convention Center. Registration information, agenda, etc. are available on-line at: http://conference.almondboard.com/.

This is THE almond meeting of the year, combining a trade show (larger this year due to a larger site), continuing education opportunities, industry updates, and lots of time to network and talk with interested growers, PCAs, and manufacturer/industry representatives.

Presentations of interest to growers include:

- Honey Bee Colony Assessment
- Sprayer Coverage
- Designing and Developing a New Orchard
- What's New in Fertility Management

The meeting is an hour closer to Sacramento Valley residents this year. Admission is free.

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Pocket Gopher and Ground Squirrel Management for Autumn

Carolyn DeBuse, UCCE Farm Adviser, Solano and Yolo Counties

Late autumn is a time to get the last of the 'to do list done' for the year and on almost everyone's orchard task list is gopher and squirrel control. Managing these vertebrate pests is a year-round task. Gophers can be controlled with most methods throughout the year but squirrel control methods change with the seasons depending on the squirrel biology. This article will outline the control methods but also inform you about some outstanding online resources that are useful to learn new information, understand seasonal cycles, and determine the best control methods to use.

Pocket Gophers: Gophers are active all year round and can be controlled with traps, poison baits, fumigation with aluminum phosphide, and a gas explosive device (Rodenator ®). Recent UC research showed that trapping plus additional fumigation had the highest efficacy. The reason that these two methods were combined was because some gophers can become trap shy so additional fumigation killed the individuals that the traps were missing. Baiting with strychnine came in second for control and the use of the Rodenator® was the least effective. To prevent a re-infestation after reducing the gopher population, destroy the existing tunnels and level the mounds by disking. With non-tillage orchard floor management disking isn't desirable so it's even more important to prevent gophers from becoming established in the first place. Keep vegetation away from the tree trunks, especially in young orchards.

The UCCE Vertebrate Pest Control Education website now has training modules online for gopher, vole and ground squirrel control. Go through the training online or download a podcast that you can listen to anywhere. Find it at: **http://ucanr.edu/sites/vpce/**.

Ground Squirrels: The task of controlling ground squirrels is so difficult and never ending that UC Cooperative Extension has a dedicated webpage just for them. The site contains information on biology, monitoring, control methods and laws and regulations. It should be your first stop for new information and education.

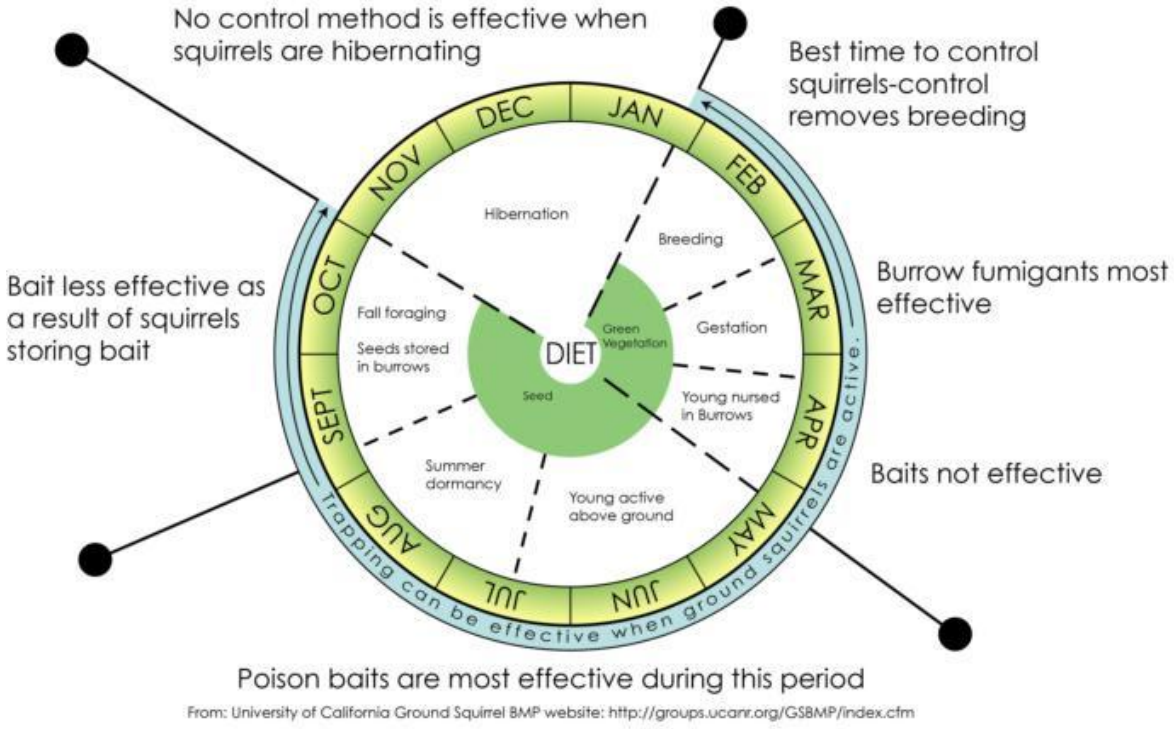
"Ground Squirrels Best Management Practices" is at: **http://ucanr.edu/sites/Ground_Squirrel_BMP/**.

Ground squirrels are controlled in much the same manner as gophers. They can be controlled with traps poison baits, and fumigation. Different methods work best at different times of the year. During the winter months the squirrels hibernate so there are no effective methods. In spring, fumigation is best because the squirrels are breeding; the burrows become nurseries, and the soil in usually moist holding the fumigant in the burrows.

Baiting does not work in spring because the squirrel's diet is almost solely fresh vegetation. During summer, baits are most effective because the squirrels have changed their diet over to seed and nut collection. Summer baiting is difficult near almond orchards because the squirrels may ignore the bait preferring almonds instead. In the heat of the summer, squirrels can hibernate in blocked off tunnels and control is not possible. Blocked tunnels and crack soil that lets the fumigant dissipate from tunnels make fumigation a poor choice in summer and fall. So it is important for almond growers to use methods in the spring and fall so that populations don't get out of hand. During the fall the only method that is effective is trapping. Trapping can also be effective any time of year. Like gopher control, after reducing the population, take measures to destroy the burrows and dens to discourage re-infestations.

With any use of poison baits or fumigant, caution should be taken to use them safely. Follow labels carefully and obtain correct permits from your county agriculture commissioner for the use of restricted poisons. Always take care to protect workers and non-target wildlife.

California Ground Squirrel - Calendar of Management



From: University of California Ground Squirrel BMP website: http://groups.ucanr.org/GSBMP/index.cfm

2012 Navel Orangeworm – Part 2

Richard P. Buchner – UCCE Farm Advisor, Tehama County

The July 2012 Sacramento Valley Regional Almond newsletter (Part 1) started the navel orangeworm (NOW) story discussing traps, generation timing and an initial third generation egg laying prediction of 8/14/12 for NOW feeding on new crop nuts. As the season progressed, we verified the second biofix on 7/23/12 and readjusted our third generation egg laying prediction to 8/25/12. The actual third biofix occurred on 8/31/12 (Figure 1) at 923 Degree Days following the second biofix. NOW eggs laid in the summer usually take about 4 days to hatch. So in this Tehama County orchard, almonds were exposed to NOW larvae about the first week in September. Every orchard is different so multiple egg traps in individual orchards are critical to verify the Degree Day models.

NOW overwinter in unharvested nuts remaining on the tree (mummies). First generation and many of the second generation eggs are laid on the surface of the mummy nuts. Second generation eggs can also be laid on new crop nuts depending upon spring temperature and hull split timing. The availability of mummy nuts influences initial populations and increases the potential for subsequent generations to increase and cause damage. Removal (sanitation) of mummy nuts in the fall or winter and rapid early harvest provide the most effective control of NOW. Poor sanitation favors population buildup and makes chemical control more difficult.

The first shot at NOW involves monitoring mummy nuts. Sample each orchard on or before January 15. Examine and count overwintering nuts on 20 trees per block. If an average of two or more mummies per tree are found, plan to remove mummies from tree canopies by February 1 and destroy nuts on the ground by flail mowing before March 15. Experience suggests best control is achieved when an average of less than two mummies per tree remain after February 1.

Trunk shaking is the preferred method to remove mummy nuts particularly on large trees with lots of mummy nuts. Machine sanitation must be done when orchard soils are dry enough to support shaker weight. Hand poling is an option particularly on smaller young trees.

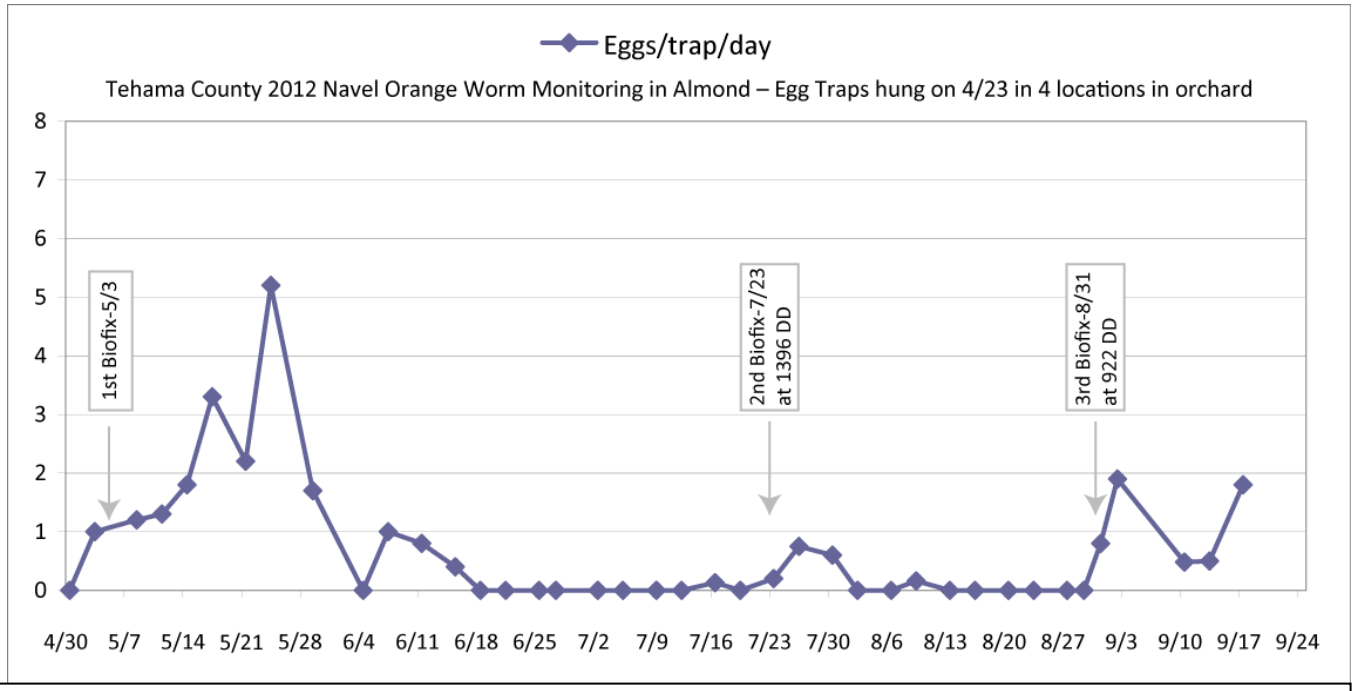


Figure 1. Egg laying activity for navel orangeworm in a single almond orchard in Tehama County. Larvae from the third generation could potentially damage almonds.

Hull Rot

Joe Connell, UCCE Farm Advisor, Butte County

Almond hulls are susceptible to attack by hull rot fungi (*Monilinia spp.* and *Rhizopus stolonifer*) from the time nuts are mature and green at hull split initiation until the hulls begin to dry. Densely canopied, vigorous, well-watered and fertilized orchards usually have the most severe damage from hull rot. Observations suggest that more open canopies help reduce this disease. Nonpareil is very susceptible but Sonora and Winters are also susceptible. Kochi can be severely affected by hull rot.

Hull rot fungi invade hulls and produce a toxin that kills the twig beyond where an infected nut is attached. When the shoot dies suddenly, nuts and leaves dry up and remain stuck on the trees well after harvest. This symptom is a good indication of hull rot infection and this loss of fruit wood can reduce productivity in future years. Early harvest can reduce loss of fruitwood from hull rot. The sooner nuts are removed the less opportunity there is for hulls to become infected and toxins to be transported into the twigs.

Dr. Beth Teviotdale, UCCE Extension Pathologist worked on hull rot in the early 1990s. She demonstrated hull rot could increase 10-fold with an increase in total water applied, particularly irrigations applied as nuts are maturing. Rainfall any time during nut maturation or high humidity also increased hull rot. Regulated deficit irrigation management at the onset of hull split was shown to greatly reduce the incidence of hull rot. This practice is the most important cultural control.

Figure 1. Black spores of *Rhizopus* hull rot are visible between the hull and shell.

In Dr. Teviotdale's trials, hull rot also decreased as the amount of applied nitrogen (500, 250, 125, and 0 pounds of N per acre per year) decreased. In addition to this general decrease, there was a major difference in the amount of hull rot between the 125 and 250 pound N treatments. A sharp increase in hull rot occurs somewhere between applications of 125 and 250 pounds of N. This was true in both experimental orchards for two years. So, if you don't want to favor hull rot, avoid excess nitrogen fertilizer. July leaf nitrogen levels should be below 2.6% N. Dr. Teviotdale found that both *Monilinia spp.* and *Rhizopus* fungi responded similarly to irrigation and fertilization.

Recent work by Dr. Jim Adaskaveg, Professor, Plant Pathology, UC Riverside, has shown that both *Monilinia spp.* and *Rhizopus* fungi can invade through the outside of green mature hulls. Some of his fungicide work has shown potential for reducing *Rhizopus* hull rot with summer fungicide applications. Several materials have helped reduce hull rot in trials compared to unsprayed controls but there are no general recommendations for preventing hull rot with fungicides at this point.

Figure 2. A tan hull rot on the outside of a green hull is often caused by *Monilinia* hull rot but recent work has shown that *Rhizopus* hull rot can also attack the outside of mature green hulls.

Leaf Blight

Joe Connell, UCCE Farm Advisor, Butte Co.

Leaf blight is caused by the fungus, *Seimatosporium lichenicola*. The fungus kills individual infected leaf petioles thus cutting off water to the leaf. Individual leaves on spurs or shoots wither and die usually in mid-summer. Leaves dry up suddenly and remain attached to the shoot or spur. The fungus can affect yield when it moves from the petiole into the axillary buds. When the axillary bud is killed, spurs fail to grow thus eliminating some future fruiting positions. If spur leaves are infected the fungus can kill the spur, once again eliminating a fruiting position.

Although dried up leaf blades disintegrate over the winter, diseased petioles continue to stick on tree during winter. The fungus survives on these dead petioles. Spores are spread by rain, and disease is favored by wet spring weather or early summer rain. Leaf blight is usually controlled incidentally by fungicide applications targeting other diseases in the spring. As a result, it is rarely widespread and seldom kills more than 20% of the leaves in one season. Repeated early death of leaves will weaken trees, but most significant is its contribution to future yield loss as a result of bud or spur death and the loss of fruiting positions.

Ziram®, Captan®, strobilurins (Abound®, Gem®), and myclobutanil (Laredo®) are effective fungicide controls for leaf blight. Fungicide treatments with effective materials from early leafing through the spring rainy period will usually provide protection from leaf blight. If you've experienced significant leaf blight you'll also need to guard against late spring or early summer rains that occur after spring fungicide effectiveness has diminished.

Figure 1. Shoot with leaf blight showing current season blighted leaves and blighted petioles remaining from the previous season's infections. The fungus overwinter's on blighted petioles.

Planning Your Weed Management Program

Andrew Johnson, UCCE, Almond Board of California Intern

Now is the time to begin planning your weed management program for the coming year, especially if you intend to utilize a residual preemergent herbicide. While it is tempting to look at the cost of residual herbicide and choose a less expensive burndown product, the incorporation of a preemergent herbicide can help control winter, spring and some summer emerging weeds and cut down on the number of herbicide applications. Rotating herbicide mechanisms of action coupled with preemergent herbicides can be a powerful tool in managing herbicide resistance.

Consider three tips that will help optimize your chemical inputs, saving you money in the long run. First: correctly identify the weeds in your orchard. Second: choose materials registered for use in almonds and proven to provide adequate control of your specific weeds. Third: ensure your application equipment is properly calibrated and in good working order and always follow the rates and application criteria found on the label.

The first thing to do before selecting materials, is to identify what weeds are present. While most growers and pest control advisors will have a good idea of what is growing in the orchard, weed populations change over time, and proper identification is important for selecting the most effective material. University of California (UCIPM) suggests monitoring weeds twice a year; in the fall to identify any summer species that were not effectively controlled by the summer program and newly emerging winter species, and again in the late spring to identify those weeds that were not controlled. There are several resources available to help with weed identification. One simple and free resource is the Weed Identification Tool available at the University of California Weed Research and Information Center (http://wric.ucdavis.edu). Weed species identification is critical for accurate selection of both post and preemergent herbicides.

While weed control programs vary, most include a preemergent herbicide tank mix with a burndown herbicide in late fall or early winter followed by burndown applications as needed. Some weed managers choose not to incorporate any preemergent products and rely on multiple applications of burndown herbicides. The cost of residual preemergent herbicide is generally more per acre per application, but some can provide adequate weed control for six months or more. When the price of adjuvants, fuel, labor, and herbicide are taken into account for multiple applications; an application of a preemergent herbicide may be more economical than it appears at first glance.

Repeated application of the same material, often the case when relying on burndown herbicides alone, (i.e. repeated applications of glyphosate), has led to the emergence of herbicide resistant weeds. Resistance management will help keep many of the tried and tested materials from losing their relevance. One way to manage resistance is through the addition of residual materials into your weed program.

Weed control success requires matching a material with your weed population. Failure to select materials known to control your specific weeds will result in unsatisfactory results, additional applications, and increased cost. Many residual preemergent products are registered for use in almonds in California. Information on registered pre and postemergent herbicides and how they perform against certain weeds is provided at http://ucanr.org/sites/Weed_Management/files/74880.pdf . Charts (chart 1 and 2) compiled by Fresno County Farm Advisor Kurt Hembree on herbicide selectivity are attached at the end of the newsletter.

While selecting the correct preemergent herbicide is important, selecting an effective burndown partner can be equally important. This is becoming especially important for hard to control species like glyphosate-resistant horseweed and fleabane. Again is it important to choose a burndown material that will provide control of your specific weed populations. In a trial conducted in Merced County, treatments containing Rely 280® (glufosinate) provided the best control of cutleaf geranium when compared to Durango® (glyphosate) and Durango® (glyphosate) + Treevix® (saflufenacil) (Figures 1 and 2). Better residual activity is favored by good initial weed control provided by the burndown component of the herbicide tank mix.

While the identification of weed population and selection of a material may seem like the most important part of a successful orchard floor management program, proper application rates and timing of those materials is equally important. Many weeds become difficult or nearly impossible to control once they have reached a certain size or reproductive stage. Some materials are not easily translocated in the plant, while others are dependent on movement into the soil by either rain or irrigation. In either case the materials need to be applied according to the manufactures recommendation if they are to perform as expected. If your tree rows are covered in leaves and debris, you will need to blow them clean before application of preemergent materials.

If your nozzles are old and worn, replace them. The cost of replacing your nozzles will be much less than the cost of repeated ineffective applications and other problems associated with poor weed control.

Knowing your weeds, choosing the most appropriate material, and properly applying that material will help you achieve the desired results.

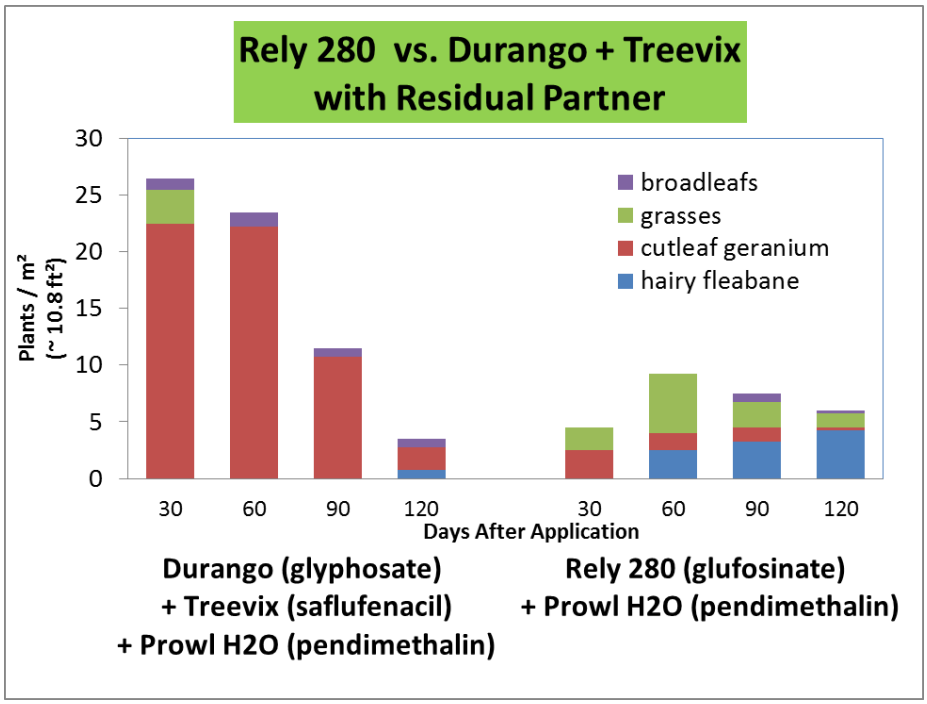


Figure 1. A comparison of the burndown herbicides Rely 280® (glufosinate) and Durango® (glyphosate) + Treevix® (saflufenacil) both tank mixed with residual herbicide Prowl H_2O® (pendimethalin). Treatments were applied in a mature almond orchard in Merced County on February 10, 2012.

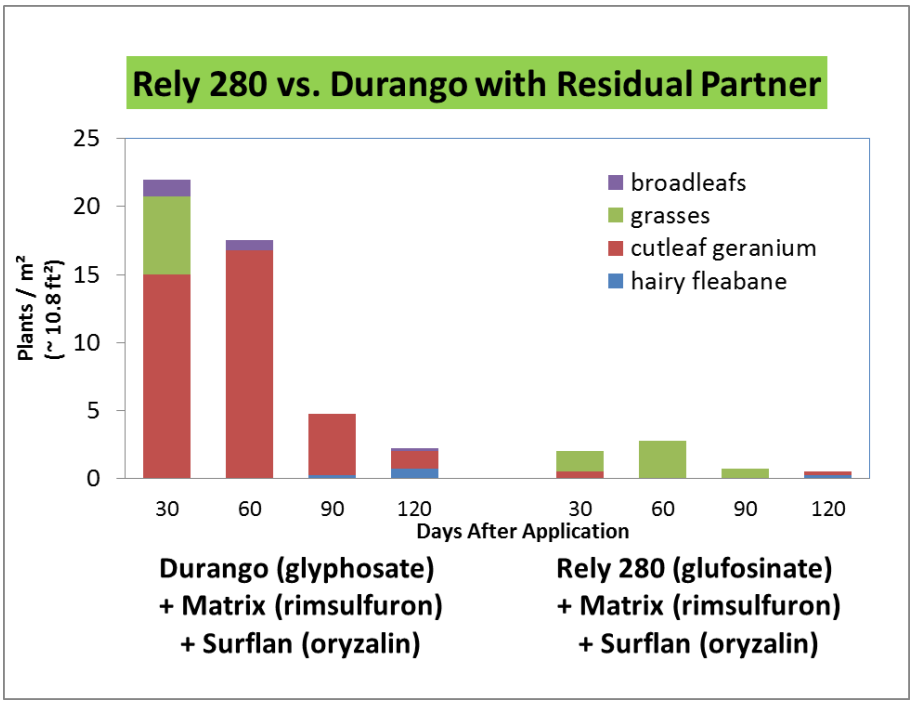


Figure 2. A comparison of the burndown herbicides Rely 280® (glufosinate) and Durango® (glyphosate) both tank mixed with residual herbicides Matrix® (rimsulfuron) and Surflan® (oryzalin). Treatments were applied in a mature almond orchard in Merced County on February 10, 2012.

Chart 1. Selectivity of Annual Broadleaf Weeds to Herbicides Registered in Almonds in California

	Preemergent herbicides													Postemergent herbicides										
	eptc (Eptam®)	flumioxazin (Chateau®)	indaziflam (Alion®)	isoxaben (Trellis®)	norflurazon (Solicam®)	oryzalin (Surflan®, etc.)	oxyfluorfen (Goal®, etc.)	pendimethalin (Prowl H_2O®)	penoxsulam + oxyfluorfen (Pindar GT®)	rimsulfuron (Matrix SG®)	simazine (Princep®)	thiazopyr (Visor®) - NB	trifluralin (Treflan 4E®, etc.)	carfentrazone (Shark®)	clethodim (Select Max®) - NB	fluazifop (Fusilade DX®) - NB	glufosinate (Rely 280®)	glyphosate (Roundup, etc.)	msma (MSMA®) - NB	paraquat (Gramoxone®, etc.)	pyraflufen (Venue®)	saflufenacil (Treevix®)	sehtoxydim (Poast®)	2,4-D amine (Orchard Master®, etc.)
Annual Broadleaves																								
Cheeseweed	N	C	C	C	P	P	C	P	C	C	P	P	N	C	N	N	C	P	N	P	P	C	N	P
Chickweed	C	C	C	C	P	C	P	C	C	C	C	P	C	C	N	N	C	C	C	C	C	--	N	N
Clovers	N	--	P	P	N	N	P	N	C	--	C	--	N	P	N	N	P	P	N	P	P	--	N	N
Cocklebur	N	--	--	--	C	N	P	N	--	P	C	N	N	C	N	N	P	C	P	C	C	C	N	C
Cudweed	P	--	C	C	C	N	N	N	C	--	C	C	N	P	N	N	P	C	N	N	C	--	N	P
Fiddleneck	C	--	C	C	P	C	C	C	C	C	C	C	C	C	N	N	P	C	N	P	P	--	N	P
Filaree	P	C	C	C	P	P	C	N	C	C	C	C	P	C	N	N	C	P	N	P	P	C	N	C
Goosefoot	C	C	C	C	P	C	C	C	C	P	C	C	C	C	N	N	P	C	N	C	C	C	N	C
Groundcherry	C	C	--	C	C	N	C	N	P	C	C	P	P	C	N	N	C	C	P	C	C	C	N	C
Groundsel, common	C	C	C	C	P	P	C	N	C	C	P	C	N	C	N	N	P	C	N	C	C	C	N	P
Hairy fleabane	C	P	C	C	P	N	P	N	C	C	P	P	N	P	N	N	C	P	N	P	P	C	N	C
Henbit	C	C	P	C	P	C	C	C	C	C	C	P	P	C	N	N	C	C	C	C	C	--	N	P
Horseweed	C	C	C	C	P	N	P	N	C	C	P	P	N	P	N	N	C	P	N	P	P	C	N	C
Knotweed, common	P	--	P	C	P	C	P	C	P	C	C	C	C	P	N	N	P	P	N	P	C	--	N	P
Lambsquarters	C	C	C	C	P	C	C	C	C	C	C	P	C	C	N	N	P	C	N	C	C	C	N	C
London rocket	C	C	C	C	P	P	C	P	C	C	C	P	N	C	N	N	C	C	N	C	C	--	N	C
Morningglory	P	C	P	C	C	P	C	N	--	N	C	--	C	C	N	N	C	C	P	P	C	C	N	P
Mullein, turkey	N	--	--	C	P	N	P	N	--	--	N	C	P	P	N	N	C	P	N	P	P	--	N	P
Mustard	N	C	C	C	P	N	C	P	C	C	C	P	N	C	N	N	C	C	N	C	C	C	N	P
Nettle	C	C	C	C	C	P	C	N	C	C	C	C	N	C	N	N	C	N	N	P	C	C	N	P
Nightshade	P	C	C	C	C	N	C	N	C	P	C	P	N	C	N	N	C	C	N	C	C	C	N	C
Pigweed	C	C	C	C	P	C	C	C	C	C	C	P	C	C	N	N	C	C	N	C	C	C	N	P
Prickly lettuce	C	P	P	C	P	N	C	N	C	P	C	C	N	C	N	N	C	C	N	P	C	C	N	C
Primrose, evening	--	--	P	C	N	P	P	P	C	--	C	C	P	P	N	N	C	C	N	C	C	--	N	--
Punctureveine	N	C	--	C	C	C	P	P	P	C	P	P	P	P	N	N	P	C	P	C	P	C	N	P
Purslane	C	C	C	C	C	C	C	C	C	C	C	C	C	N	N	N	C	C	N	C	C	C	N	P
Russian thistle	P	C	C	C	C	P	P	P	C	P	C	P	P	P	N	N	C	C	N	C	C	C	N	P
Shepherd's-purse	P	C	C	C	P	N	C	P	C	C	C	C	N	P	N	N	C	C	N	P	C	C	N	C
Sowthistle	C	P	C	C	P	P	C	N	C	P	C	C	N	N	N	N	C	C	N	P	C	C	N	P
Spotted spurge	N	C	C	C	C	P	P	P	P	C	P	P	P	P	N	N	C	C	N	C	C	C	N	P
Wild radish	N	C	--	C	P	P	C	N	C	C	C	C	N	P	N	N	C	C	N	C	C	C	N	C
Willowherb	--	C	C	P	P	P	C	--	C	--	N	--	--	P	N	N	C	P	--	N	P	C	N	P

NB = NB = non-bearing only
C = control, P = partial control, N = no control, -- = no information

This is not an endorsement for of any trade names listed, nor does the omission of specific trade names reflect the view of the author. Please refer to your local dealer or chemical representative for specific herbicide products available but not listed. Always read and follow the label directions carefully before using any pesticide. Ratings reflect appropriate timing and dose according to label recommendations. Kurt Hembree, UCCE, Fresno County. January 2012. http://cefresno.ucdavis.edu

Chart 2. Selectivity of Annual Grass and Perennial Weeds to Herbicides Registered in Almonds in California

	Preemergent herbicides													Postemergent herbicides									
	eptc (Eptam®)	flumioxazin (Chateau®)	indaziflam (Alion®)	isoxaben (Trellis®)	norflurazon (Solicam®)	oryzalin (Surflan®, etc.)	oxyfluorfen (Goal®, etc.)	pendimethalin (Prowl H_2O®)	penoxsulam + oxyfluorfen (Pindar GT®)	rimsulfuron (Matrix SG®)	simazine (Princep®)	thiazopyr (Visor®) - NB	trifluralin (Treflan 4E®, etc.)	carfentrazone (Shark®)	clethodim (Select Max®) - NB	fluazifop (Fusilade DX®) - NB	glufosinate (Rely 280®)	glyphosate (Roundup, etc.)	msma (MSMA®) - NB	paraquat (Gramoxone®, etc.)	pyraflufen (Venue®)	saflufenacil (Treevix®)	sehtoxydim (Poast®)	2,4-D amine (Orchard Master®, etc.)
Annual Grasses																								
Annual bluegrass	C	C	C	N	C	C	P	C	C	C	C	C	C	N	C	N	C	C	N	P	N	N	N	N
Barnyardgrass	C	C	C	N	P	C	P	C	P	C	P	C	C	N	C	C	C	C	P	P	N	N	C	N
Bromegrasses	C	P	C	N	C	C	N	C	--	C	--	C	C	N	P	P	C	C	--	P	N	N	P	N
Canarygrass	C	P	--	N	C	C	P	C	--	--	P	C	C	N	C	C	C	C	N	P	N	N	C	N
Crabgrass, large	C	C	C	N	P	C	N	C	P	C	N	C	C	N	C	C	C	C	C	C	N	N	C	N
Fescues	C	P	C	N	C	C	N	C	--	C	P	P	C	N	P	P	P	C	--	P	N	N	P	N
Foxtails	C	C	C	N	P	C	N	C	--	C	C	C	C	N	C	C	P	C	--	C	N	N	C	N
Junglerice	C	C	C	N	P	C	P	C	P	C	P	C	C	N	C	C	P	C	P	P	N	N	C	N
Lovegrass	C	C	C	N	P	C	P	C	--	P	P	P	C	N	C	C	C	C	--	P	N	N	C	N
Ryegrass, Italian	C	P	C	N	C	C	N	C	P	C	P	C	C	N	C	C	C	C	N	P	N	N	C	N
Sandbur	C	C	C	N	C	P	N	C	--	--	C	C	C	N	C	C	C	C	C	P	N	N	C	N
Sprangletop	C	P	C	N	P	C	N	C	--	--	N	C	C	N	C	C	P	C	N	N	N	N	C	N
Wild barley	C	P	C	N	C	C	P	C	--	P	P	C	C	N	C	C	C	C	N	P	N	N	C	N
Wild oat	C	C	C	N	C	C	P	P	C	P	C	--	P	N	C	C	C	C	N	P	N	N	C	N
Witchgrass	C	P	--	N	P	C	P	C	C	--	P	--	C	N	C	C	P	C	N	P	N	N	C	N
Perennials (seed)																								
Bermudagrass	C	N	--	N	C	C	N	C	N	N	P	C	C	N	C	C	C	C	N	P	N	N	C	N
Dallisgrass	C	--	--	N	C	C	N	C	N	N	C	C	C	N	C	C	C	C	C	N	N	N	C	N
Johnsongrass	C	C	--	N	C	C	N	C	N	P	C	C	C	N	C	C	C	C	C	C	N	N	C	N
Field bindweed	N	--	--	C	P	P	N	P	P	P	P	C	P	C	N	N	C	C	N	P	P	C	N	P
Perennials (estab.)																								
Bermudagrass	N	N	N	N	P	N	N	N	N	N	N	N	N	N	P	P	P	P	N	N	N	N	P	N
Dallisgrass	N	N	N	N	P	N	N	N	N	N	N	N	N	N	P	P	P	P	C	N	N	N	P	N
Johnsongrass	N	N	N	N	C	N	N	N	N	N	N	N	P	N	P	P	P	P	N	N	N	N	P	N
Field bindweed	N	N	N	P	N	N	N	N	N	P	N	P	P	P	N	N	P	P	N	N	N	N	N	N
Nutsedge, purple	P	N	N	N	P	N	N	N	N	P	N	P	N	N	N	N	P	P	P	P	N	N	N	N
Nutsedge, yellow	P	N	N	N	P	N	N	N	N	P	N	C	N	N	N	N	P	P	C	P	N	N	N	N

NB = NB = non-bearing only

C = control, P = partial control, N = no control, -- = no information

This is not an endorsement for of any trade names listed, nor does the omission of specific trade names reflect the view of the author. Please refer to your local dealer or chemical representative for specific herbicide products available but not listed. Always read and follow the label directions carefully before using any pesticide. Ratings reflect appropriate timing and dose according to label recommendations. Kurt Hembree, UCCE, Fresno County. January 2012. http://cefresno.ucdavis.edu

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Introduction to Almond Production in the south Sacramento Valley

Agenda

- November 27, 2012: UCCE Office, *Norton Hall*, 70 Cottonwood St., *Woodland*
- November 28, 2012: Granzella's Banquet Hall, 451 6th St, Williams
- November 29, 2012: Veteran's Memorial Hall, 1425 Veterans Memorial Circle, Yuba City

This is a one-day class on Introduction to Almond Production in the south Sacramento Valley. Much of the information to be presented will apply to almond production in general. The same program will be delivered at each site/date. PCA and CCA CE hours have been requested.

7:30am **Introduction**

7:45 – 12:00 **The Orchard**

- **Rootstocks**- Franz Niederholzer, UC Farm Advisor, Colusa/Sutter/Yuba Counties
- **Varieties**-Joe Connell, UC Farm Advisor, Butte County
- **Spacing**- Franz Niederholzer, UC Farm Advisor, Colusa/Sutter/Yuba Counties
- **Planting**- Bobby Johnson, UCCE/Almond Board of California intern
- **Frost**- Joe Connell, UC Farm Advisor, Butte County
- **Pollination**- Joe Connell, UC Farm Advisor, Butte County
- **Pruning**-Carolyn DeBuse, UC Farm Advisor, Solano/Yolo County

12:00-12:30 **Lunch**

12:30-1:30 **Feeding the Orchard**

- **Irrigation**-Rick Buchner, UC Farm Advisor, Tehama County
- **Fertilizer**- Franz Niederholzer, UC Farm Advisor, Colusa/Sutter/Yuba Counties

1:30-2:30 **Protecting the Orchard**

- **Weed control**- Bobby Johnson, UCCE/Almond Board of California intern
- **Insects**- Franz Niederholzer, UC Farm Advisor, Colusa/Sutter/Yuba Counties
- **Diseases**- Carolyn DeBuse, UC Farm Advisor, Solano/Yolo County
- **Vertebrate pests**- Carolyn DeBuse, UC Farm Advisor, Solano/Yolo County

2:30- 3:30 **Delivering/Selling the Crop**

- **Harvest**- Franz Niederholzer, UC Farm Advisor, Colusa/Sutter/Yuba Counties
- **Marketing**- Review Almond Board
- **Economics** –Review of UCCE Cost of Almond Production

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Introduction to Almond Production in the south Sacramento Valley

Registration Form

Select one:

_____ November 27, 2012: UCCE Office, Norton Hall, 70 Cottonwood St., Woodland

_____ November 28, 2012: Granzella's Banquet Hall, 451 6th St, Williams

_____ November 29, 2012: Veteran's Memorial Hall, 1425 Veteran's Memorial Cir, Yuba City

Cost: $30.00 per person

This is a one-day class on Introduction to Almond Production in the south Sacramento Valley. Much of the information to be presented will apply to almond production in general. The same program will be delivered at each site/date. Space available at each venue will limit the registration at that site.

The program will begin at 7:30am and run until 3:30pm. A light breakfast (muffins, coffee, tea, etc.) and lunch (sandwich buffet) will be available and included in the $30/person cost.

_____

_____

Full Name: _____

Company: _____

Address: _____

City: _____ State: _____ Zip: _____

Phone: _____ Email: _____

Please answer:

_____ New grower with no farming experience

_____ New almond grower with farming experience

_____ Experienced grower looking for a review course

_____ PCA

_____ Other: _____

Special food accommodations needed: _____

Special access accommodations needed: _____

If you would like to pay via credit card *(accepted online only)*, please visit:
http://ucce.ucdavis.edu/survey/survey.cfm?surveynumber=9272

If you would like to pay via check, please make the check payable to **UC Regents**. Mail check and registration form to: **UCCE Sutter-Yuba, 142A Garden Highway, Yuba City, CA 95991**

Questions? Call Franz Niederholzer or Michele Searcy at 530-822-7515