



Welcome to the new quarterly publication from the San Joaquin County UC Cooperative Extension office. This newsletter is an opportunity for our Ag Advisors to share with you happenings from the field, development of new technologies and research results of local importance. We want to keep communications flowing and let you know of the important issues we are addressing for the Ag community.

I'm pleased to announce we are close to completing interviews from a nation wide search of candidates to replace the position left vacant with the retirement of Vegetable crops advisor Bob Mullen. The process should be finalized and a new Advisor announced in September. Bob and I look forward to introducing the new advisor to you. Many thanks to Benny Fouche who has stepped up in the interim covering vegetable crops questions.

Finally, I would like to call your attention to our local website <http://cesanjoaquin.ucdavis.edu/> as a way to access newsletters and additional cooperative extension information for the Ag, 4-H youth and Nutrition Education programs that we conduct in San Joaquin County and statewide. The website also serves as a directory to the many program links available at the University of California.

Mick Canevari  
County Director

## Solarizing as an Alternative to Vegetable Bed Fumigation

It's been really hot lately, and if you have to park your car in the sun for a few hours in the afternoon you know how deadly that can be. It's possible to use the same solar radiation for "cooking" the soil in order to get rid of weeds, diseases and some shallow insects. This process is called soil solarization and is a viable alter-

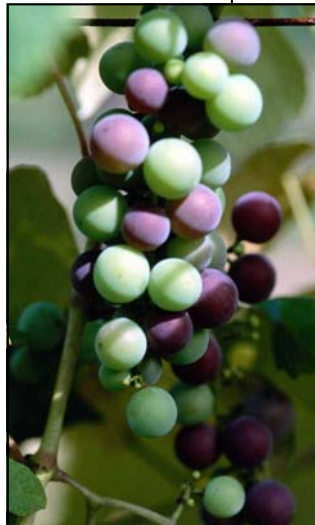
native to using methyl bromide, Vapam or Telone for fumigation of vegetable beds.

Soil temperatures may reach a high of 160° F under the plastic, providing good control of soil diseases and weeds down to about 4 inches. The basic steps are as follows:

*(continued on page5)*

## Wine Grapes and Almonds Move Toward Harvest

**Grapes.** Summer has arrived! A mild spring and cool early summer gradually turned normal and now hot. The start of grape harvest should be a relatively normal time of mid-August, plus or minus a few days. The 2005 season has been moderate with all vineyards showing more shoot growth than most anyone can ever remember. For many varieties such as Pinot grigio, Petite Sirah, Sauvignon blanc and Zinfandel and even Colombard (among others) demand is good and prices have stabilized, Cabernet Sauvignon is still a concern. Crop, on a per acre basis, appears to be about average to slightly above, but Syrah is generally the major exception, with a very light crop. The relatively mild year has been interspersed with



lots of rain and even some hail in scattered locations. June was wetter than average with about 0.75 of an inch compared to a 10 year average of less than 0.10 inch for the month.

As harvest rapidly approaches, insect pests and spider mite pressure is light, but there have been more than a few problems from powdery mildew. It has been thriving in the mild weather; only becoming evident as a major concern at this time in blocks that have a history of mildew susceptibility, in low lying areas, or heavier soils and in susceptible varieties such as Chardonnay, Carignane, Merlot and Cabernet Sauvignon. Conditions for disease development have been good enough (or bad enough) to even see some problems in Zinfandel.

Vine water demand seems to have increased dramatically in recent weeks, with large canopies and a few yellow basal leaves

showing up. Saving on input costs may have allowed growers to get by with late irrigation starts and reduced irrigation sets, but some of that has already been spent on fungicide programs. In this difficult year the quality may still be very good, but it may be difficult to cover the increased costs.

Winegrowing is still considered in a positive light by the general public, wine consumption is slowly increasing and agriculture in general is receiving some grudgingly bestowed credit for efforts to prove its innocence. For the region as a whole, both the short and long term look positive, but challenging. Efforts from the Lodi-Woodbridge Winegrape Commission and from Lodi District Grape Grower Association along with more recognition for quality wines from South San Joaquin county growers in Escalon, Manteca, Ripon and Tracy are helping strengthen the county's position for the future.

So there is good reason for optimism as harvest approaches, but as with harvest some hard work and luck will be needed. Good luck with vintage 2005.

*A Thought: "Time flies like an arrow, but fruit flies like bananas." Groucho Marx*

**Almonds.** As the Almond Board states "*Almonds are In*". Better prices and increased demand have helped the recent memory of grower returns, at levels



lower than 1980, fade somewhat to the background. At the same time, Mother Nature has a way of keeping everyone humble and cautious. Increased prices for pollination bees and lots of rain have required more inputs to ensure a crop for the 2005 harvest. The threat of Anthracnose has been of special concern, but seems to be under control, especially compared to the wet

year of 1998.

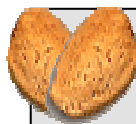
Prices are up, but it looks like yields will be down for Nonpareil, while about average or slightly up for most other varieties. This past winter's high rainfall total did help reduce early irrigation demands, with another "but"; good canopy development and summer temperatures at 100 or above lately have required more water. There has been some scattered reporting of yellow leaves and leaf drop especially on Sonora up and down the state. No obvious explanation seems to answer the question of why, other than this year's "weather" and a tendency for some varieties to show early leaf senescence under variable conditions.

Spider mites seem to be less of a problem, but

they are out there. New miticide options and the mild conditions earlier have helped. Harvest appears to be about on normal track for a change! As of July 13<sup>th</sup>, the Nonpareil at San Joaquin Delta College Variety trial was at 1% hull split.

Whether normal or slightly delayed, it is important to monitor for ant problems and pick up quickly after harvest. The last few years have seen increasing ant problems, but again there seem to be some alternative materials available that can help in choosing a good course of action. Good luck with harvest.

Paul Verdegaal  
Farm Advisor



In classical times Romans presented gifts of sugared almonds to important dignitaries as well as to personal friends. At weddings they also tossed almonds at the bride and groom as a symbol of fertility.

<http://www.awesomealmonds.com/did-you-know.htm>

## Roundup Ready Alfalfa

Roundup Ready<sup>®</sup> alfalfa was registered for planting in the U.S. in June, 2005. The long awaited but controversial bio-tech alfalfa will bring benefits to producers by improving control on a wide range of weeds and especially the more difficult perennial weeds. Limited amounts of seed will become available for fall plantings. Information on variety availability and dormancy type is being sorted out by seed companies. Most major alfalfa seed companies will sell their own brand of Roundup Resistant variety.

What will the seed cost? A well kept secret until now. A \$3.00 technical fee per pound of seed will be added to the variety cost. Example, XYZ variety @ \$3.00 /lb + \$3.00 tech fee = \$6.00 per lb. A contract will need to be signed by growers to protect the seed companies against growing or selling patented seed.

Will it be worth it? Undoubtedly to some, it will mean easier weed control depending on the situation. This technology, used in rotation with other herbicides, should provide for less weeds and cleaner hay. The key is timely management of application and understanding that this is not the silver bullet, "one-size-fits-all" program.

In San Joaquin County, Roundup Ready alfalfa field trials began in 2001 to develop a practical weed

control program at planting through four production years to evaluate weed control, impacts on alfalfa growth, weed shifts and herbicide resistance.

The experiment was established in August of 2001 and compared various rates of glyphosate at three seedling alfalfa growth stages. Pursuit, Prism and Buctril were the standard herbicide comparisons. The stand-establishment results averaged 95% control on 12 common weed species. Glyphosate was safe on 95% of the alfalfa seedlings. Those that died did not contain the gene for glyphosate resistance. This is a normal part of the breeding process. Plants without the resistant gene are referred to as *Nulls* and will die when sprayed. Nulls will be seen in commercial plantings also, and look identical to other plants, so an early application of glyphosate at the 3-4 alfalfa leaf stage will be recommended. This is necessary to remove the susceptible plants when small and easy to kill before size becomes an issue.

We continued with dormant/winter weed management from 2002 to 2005. The dormant experiments showed excellent weed control the first year. By the second year, low populations of burning nettle, a common winter weed not well controlled by glyphosate, began showing in some of the plots. By 2005, several of the glyphosate-only plots had become heavily infested with nettle. Even at high glyphosate rates, the problem remained. Some of the cleaner plots over the years were combinations of glyphosate with soil residual herbicides like Velpar.

This is clearly a technology that will benefit weed control in alfalfa production - if not over-used! Unlike Roundup Ready cotton or corn which are rotated annually, alfalfa is a long lived perennial crop and; therefore, we need to think about herbicide rotations to avoid weed shifts or herbicide resistance. With good management practices we will keep this technology useful for years to come.

*For more specific information on the yearly Roundup Alfalfa trials go to the UCCE San Joaquin web site field crops program.*

Mick Canevari  
Field Advisor

## UPCOMING EVENTS

August 9

LeGrand Fresh Market  
Tomato Field Day

contact:

Scott Stoddard 209-385-7403

August 25

Bean Day  
UC– Davis, CA  
contact Rachel Long  
rflong@ucdavis.edu

**October 18-20**

**Weed Science School 2005**  
**UC– Davis, CA**

<http://wric.ucdavis.edu/education/weedschool05.html> for details

October 25-26

**25th Biennial Groundwater Conference and 14th Annual Groundwater Resources Association Meeting and Conference**  
**Sacramento Convention Center**  
[www.waterresources.ucr.edu](http://www.waterresources.ucr.edu) for details

November 8-10

UC Pistachio Production  
Short Course  
UC Merced (Fresno)  
contact :  
JoAnn Corvello 559-466-6525

## UC Releases New Cherry Rootstocks

UC recently released and patented three new clonal Mahaleb rootstocks for sweet cherries, numbered 155-1, 156-5 and 159-5. The University is in the process of licensing nurseries to produce these stocks, and they will soon be available for planting from licensed nurseries.

The new rootstocks came out of a long-term project started many years ago aimed at finding Mahaleb rootstocks with relative resistance to *Phytophthora* root and crown rot, as well as other desirable characteristics. Over the course of the project it became apparent from greenhouse screening and field testing that two of these selections (155-1 and 156-5) showed promise as cherry rootstocks with greater resistance to *Phytophthora* root and crown rot than standard seedling Mahaleb rootstocks. Rootstocks 156-5 and 159-5 showed some

measure of tree size reduction when Bing was used as the scion variety.

Beginning in 1995, trials were set up at five sites to evaluate these and other seedling and clonal Mahaleb rootstocks (see table on page 5). Over the years, we have reported on the results of these trials each in the California Cherry Advisory Board's Cherry Research Reports and at the annual California Cherry Research Review.

For a variety of reasons including their small size and/or scope of included materials, the trials at two sites (Sites 1 and 4) were only followed for short times after they were established. Site 2, located in a commercial Lodi area orchard, was the best designed and managed trial of the five. Planted in 1998, this has been the best documented of all the trial sites, largely because of its

size and scope, as well as the exceptional management and cooperation provided by the collaborating grower. Site 2 was the site most relied upon for pre-release evaluations and information on the rootstocks 155-1, 156-5 and 159-5.

The Site 3 trial at UC Davis was planted with nursery-grown rootstock whips in 1996 and was budded to Bing in 1998. Because supplies of some rootstocks were limited, Site 3 includes unequal and, in some cases, small numbers of some rootstocks. In general, overall quality of orchard care at this site has not been as good as at Sites 2 and 5. In addition, soil at the site had been previously intentionally infested with Phytophthora for a walnut rootstock trial, so disease pressure at the site is very high. All these factors make the trial at Site 3 a “worst case scenario” (or, I suppose, the “best case”, depending on your perspective) for testing the Phytophthora resistance and orchard performance of the new rootstocks. Evaluations of tree growth and survival at this site were made periodically at Site 3 until 2003. At that time, survival of 155-1, 156-5 and 159-5 were 100%.

Earlier this year, it was brought to my attention that a considerable number of trees at the Site 3 trial had died – apparently from Phytophthora - since the last evaluation in 2003. Because Sites 2, 3 and 5 provide an opportunity to obtain ongoing information about the performance of the three released stocks, I evaluated tree mortality at these again earlier this summer (in May for Site 3 and July for Sites 2 and 5). The results of these recent evaluations show that there has indeed been considerable decline and death of trees on 155-1, 156-5 and 159-5 at Site 3. Tree mortality on Mazzard and Colt, in contrast, was low. We examined crowns and large roots of many dead and dying trees in the trial and all had visual symptoms of Phytophthora infection. Tree survival at Site 2 was generally better, continuing the trends set in earlier years of the trial. Beginning in 2001 Cherry Stem Pitting disease was discovered to be affecting some trees at Site 2 and the mortality of some trees there is due to this disease rather than Phytophthora.

Rootstock 156-5 is the only one of the newly released rootstocks included at Site 5. One of the seven

original trees of this rootstock died in 2004 at this site, whereas none of the “standard” Colt or Mahaleb rooted trees has died.

These recent findings suggest that 155-1 and 156-5 may not be as resistant to Phytophthora as early results from the field trials indicated - at least under the conditions of high disease pressure and generally low level of care that exist at Site 3. I am bringing these recent findings to your attention because I believe you should be aware of them and should evaluate the potential of these new rootstocks in the light of all available information. As the published reports show, the three released stocks performed well at all sites through 2003. While management and disease pressure conditions have undoubtedly contributed to the higher level of tree mortality at Site 3, and the low and variable numbers of trees at this site makes it difficult to draw robust conclusions, the high rate of mortality among the three released selections – and comparatively good survival of Mazzard and Colt at the same site – are also compelling.

Growers should consider this and all available information in assessing the potential of these new rootstocks for California cherry orchards. As with other rootstocks, their real potential will ultimately be discovered and proven as they are planted and grown in a broader range of commercial orchard settings under the caring hands of California’s discerning and innovative cherry growers.

Joe Grant  
Farm Advisor



When your head is throbbing from daily stress, nosh on a few of nature’s little red candies. Experts at Michigan State University found that anthocyanins, the antioxidants in cherries, block inflammatory enzymes and help reduce pain. In fact, eating 20 cherries may be just as effective as popping an aspirin!

<http://www.northsidecherries.com/Nutritional%20Facts.htm>

## Drinking Water for Dairy Animals

Of all farm animals, lactating cows require the greatest amount of water in proportion to their size, primarily because of the volume of water secreted in their milk. For big cows, during summer time, water consumption can be more than 40 gallons/cow/day (151.4 L). Today, without question, water is considered the most essential nutrient for lactating dairy animals. However, water of acceptable quality is a scarce commodity in many areas of the country and the world. According to

Dr. David Beede in USA (Western Dairy Management Conference, Reno Nevada, 2005), the availability of abundant, clean drinking water may become a challenge in the future as dairy farms are pushed farther and farther from population centers and relocate. Some of the most practical recommendations which Dr. Beede has indicated in his Conference are:

1) Provide 1 to 2 ft of linear trough space per cow in return alleys or breezeways from the milking parlor.

*(continued on page 6)*

**Survival of UC Mahaleb clonal rootstocks 155-1, 156-9 and 159-5 in UC test sites.** Figures shown are the percentage of trees of each rootstock originally planted and surviving at the most recent evaluation performed at each site. Survival of standard Mahaleb seedlings, Mazzard seedlings and Colt shown for comparison where present.

|   |   |   |   |   |
|---|---|---|---|---|
| <p><b>Site 1: North Stockton area</b><br/>                 Site characteristics: Stockton Adobe Clay Poorly managed, replants in older orchard Planted 1995<br/>                 Survival shown for: 1997 (2<sup>nd</sup> leaf)</p> | <p><b>Site 2: East Stockton area</b><br/>                 Site characteristics: Wyman Clay Loam well managed, new orchard on formerly row crop land Planted 1996<br/>                 Survival shown for: 2005 (10<sup>th</sup> leaf)</p> | <p><b>Site 3: UC Davis</b><br/>                 Site characteristics: Yolo Fine Sandy Loam, poorly managed, formerly orchard site seeded to Phytophthora Planted 1998<br/>                 Survival shown for: 2005 (9<sup>th</sup> leaf)</p> | <p><b>Site 4: UC Davis</b><br/>                 Site characteristics: Yolo Fine Sandy Loam Planted 1999<br/>                 Survival shown for: 2000 (2<sup>nd</sup> leaf)</p> | <p><b>Site 5, East Stockton area</b><br/>                 Site characteristics: Wyman Clay Loam, well managed, new orchard on former row crop site Planted 1999<br/>                 Survival shown for: 2005 (7<sup>th</sup> leaf)</p> |
|---|---|---|---|---|

**UC releases**

|       |    |     |    |    |    |
|-------|----|-----|----|----|----|
| 155-1 | -- | 100 | 33 | 54 | -- |
| 156-5 | 40 | 92  | 70 | -- | 86 |
| 159-5 | 75 | 40* | 50 | -- | -- |

**Standards**

|         |    |     |    |     |     |
|---------|----|-----|----|-----|-----|
| Mahaleb | -- | 55* | 80 | 100 | 100 |
| Mazzard | -- | 93  | 80 | 100 | --  |
| Colt    | -- | --  | 90 | 100 | 100 |

*\*Stem pitting noted in some trees, may be contributing to mortality*

*(continued from page 1)*

1) Clear the field, cultivate to remove clods and trash and form beds as if you were going to plant vegetables. If you use drip irrigation, install the tape and sub up the beds. For flood irrigated fields, either wet the beds and lay the plastic, or if can move the water across the beds, form the beds and then irrigate to wet the beds.

2) Cover the beds with 1 mil plastic, being sure to bury completely all around the sides.

3) Leave for 4-6 weeks during the hottest part of the summer. If air temperatures are above 95° F solarization is usually very effective.

4) When removing the plastic to plant, try not to disturb the edges of the beds or drag soil from the furrow onto the beds. Cutting the plastic in the middle and then pulling both directions away from the center of the bed works well.

For growers with crops like strawberries that are pulled out in June this is a very cost effective practice. If you are planting fall onions or cole crops this is a good clean-up practice. I have used it in conjunction with fall planted cover crops to keep the beds clean for an early tomato planting next spring. The solarization in combination with a vigorous mustard cover crop resulted in 99% control of winter weeds. Most annual weed seeds are killed. Weeds that are not controlled with chemical fumigants are also not controlled by solarization. Do not expect control of nutsedge, bur clover and any perennial weeds such as johnson grass, bermuda grass or field bindweed.

Solarization effectively controls most fusarium wilts, verticillium wilts and many seed rot fungi. While only partially effective on many nematode species, due to the shallow depth of cooking, often this clean up of the top 4 inches of soil will get the plants off to a good start and allow them to produce even in the presence of



Soil solarization inside a tomato greenhouse

some nematodes and diseases. Beneficial organisms appear to recolonize the soil rather quickly. Earthworms are able to move away from the slowly heated soil and return when the plastic is removed.

The cost of solarization will vary depending on whether or not you already own the equipment to lay the plastic and the cost of disposal of used plastic. Unfortunately it's difficult to recycle plastic contaminated with soil. While many growers do not like to have land out of production during the middle of the summer, growers oriented toward the better spring- and fall- price markets may find it economical to "cook" their vegetable beds when prices for many of the summer vegetables are at their lowest.

Benny Fouche  
Farm Advisor

*For more details see our publication #21377.*

*(continued from page 4)*

Cows consume 50-60% of the total daily water intake immediately after milking. Use warm water from the heat exchange unit. Cows prefer to drink warm water, even in environments with warm ambient temperatures, if the supply is insufficient another water source to supplement the water cooler will be required.

2) Provide a minimum of two water sources per group in areas where cows are housed. Cows should never have to walk more than 50 ft to get a drink of water. Place water sources in close proximity to the feed bunk and protected from the sun. Provide sufficient space to cows for maneuver around the water trough, in some existing facilities removing a couple of free stall spaces might be necessary.

3) Cleanliness is crucial! A good rule of thumb is: "Base on appearance of water in the trough, would you be willing to cup your hands and take a drink"? If not the water is not clean enough for your cows. Cleaning water sources daily is very important, so as not to limit water intake. Tanks or troughs should be easy to drain or dump to make the cleaning process quicker and more efficient.

4) Be certain that the water filling capacity of the system is sufficient so that the cows never have to wait for water to be available. If cows ever have to wait for water, changes are needed immediately!

5) Use troughs or tanks that provide a filled water depth of only 6 to 12 inches. The advantages of these are: a) prevent stagnant water, b) they are easier to clean, and c) they fill rapidly assuming proper flow rates.

6) Use of water cups or small receptacles (12 inches diameter) is strongly discouraged for groups of

cows. In tie-stall barns one cup for each cow will ensure meeting her drinking water needs. But two cows sharing one water cup will result in a submissive cow not receiving an adequate amount of water to maximize her performance potential.

7) Head clearance around the water trough should be at least 2 feet. Less than that may impede optimal water consumption.

Finally, a recent survey carried out in Merced County indicated that almost 40% of the dairy farms have medium to high concentrations of salts in the drinking water for animals; mainly sodium and chloride. High producing dairy cows can consume almost 30% of their sodium and chloride requirements in the drinking water. In some situations high amounts of salts are excreted in urine, which can affect the soil quality by a slow salinization process. Salinization is the build-up of salt within the soil and it is one of the greatest environmental threats facing many dairies today. This may affect crop production in the near future.

It is highly recommended that you: a) assess water quality with a complete analysis, b) talk to your nutritionist and include minerals in the water based on the total mineral dietary balance, and c) if you have high concentrations of salts in the water avoid using free choice salts and/or maintain strict control of free choice salts consumption. In any situation minimize future problems; including all the minerals offered to cows in the feeds, free choice salts and water, and balance nutrition according to the animal's requirements.

Alejandro Castillo  
Farm Adviser- Merced &  
Stanislaus Cnty

**Dear Readers of UC Cooperative Extension Newsletters:**

**July 2005**

**LAST CHANCE!!** We are updating our local UC Farm Advisor mailing list for newsletters and meeting notices. If you **have not** completed and returned this form yet please do so or this will be your **LAST NEWSLETTER**. Our mailing list is kept confidential.

Name: \_\_\_\_\_ Business Name: \_\_\_\_\_

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\_\_\_\_\_ Keep my name on the mailing lists for information checked below.

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E-MAIL ADDRESS: \_\_\_\_\_ @ \_\_\_\_\_

**Newsletters: Please check newsletter(s) you wish to receive. This will include meeting notices.**

**Check the commodities in which you are interested:**

-----FOLD HERE-----

- Almond Digest-AD(Almonds) – Paul Verdegaal
- Along the Grapevine-G (Wine grapes) – Paul Verdegaal
- Dairy Diary -D - Alejandro Castillo
- Down the Vegetable Row -V  
(Tomatoes, Asparagus, Melons, Peppers)
- Field Crops Report -S  
(Alfalfa, Beans, Cereals, Rice, Corn) – Mick Canevari
- Livestock Lines -L (Livestock, Pasture) – Theresa Ward
- Pomologist – F/N(Tree fruits, Walnuts) – Joe Grant
- Small Farms and Specialty Crops Report - B  
Benny Fouche

- Grapes-G  Dairy-D  Livestock-L
- Field Crops-S
- Alfalfa-AF  Beans-BN  Corn-CS
- Grains-GN  Rice-RI  Winter Forage-WF
- Fruits-F
- Apples-AA  Cherries-CH  Tree Fruits-FT
- Nuts-N
- Almonds- AM  Walnuts -WN
- Small Farms-B
- Asian Vegetables-AV  Strawberries-ST
- Vegetables-V
- Asparagus-AS  Melons-ME  Tomatoes-TM
- Peppers – PE
- Others: \_\_\_\_\_

**Check your occupation below:**

- Ag chemicals (San Joaquin Co.)-AL  Ag chemicals (outside county)-AO  Consultant/Advisor-CA
- Grower-GR  Lender-LN  Media-M
- Nursery/Seed Co.-NS  Pest Control Advisor-PA  Shipper/Packer-SP
- Veg/Fruit Processor/Shipper-PS  Winery-W

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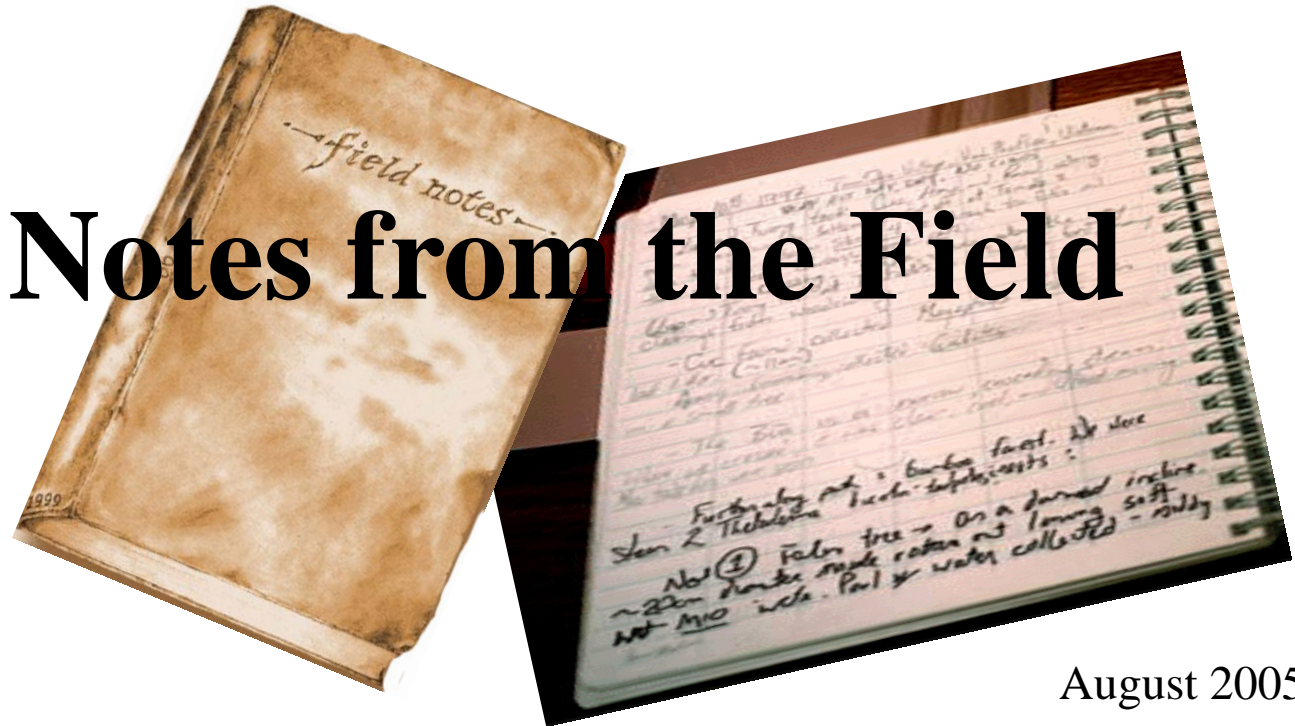
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# Notes from the Field

August 2005

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Cooperative Extension Work in Agriculture and Home Economics, U.S. Department of Agriculture, University of California, Fresno, Kern, Kings, Madera, Merced, San Joaquin, Stanislaus, & Tulare Counties Cooperating

For assistance regarding our programs, please contact us.