



The Pomology Post

Fertilizing one-year old trees - be careful!

by Brent Holtz, Ph.D., University of California Pomology Advisor

Nitrogen is the most important element we can apply to our tree fruit crops. Almond growth and productivity depend on the availability and uptake of nitrogen. Most fertilizer recommendations are based on making nitrogen available to our trees so that a nitrogen shortage does not limit tree growth or productivity.

Young almond trees don't require as much nitrogen as older trees. I like Wilbur Reil's rule of "one ounce of actual nitrogen per year of age of tree". That rate can be applied several times per season, but never more than that at any one application. Thus, a first leaf (first year in your orchard) almond tree should not receive more than one ounce of actual nitrogen per any application. A five year old almond tree should not receive more than 5 ounces of actual nitrogen per one single application. The University of California only recommends one ounce of actual nitrogen per one year old tree over the course of the season, but I have been told by many growers and PCAs that this rate is not enough for the growth they desire. So, if you want to put out five ounces of actual nitrogen per one year old tree, do so in five applications and not all at once!

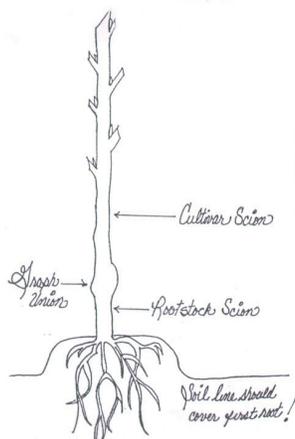
I have seen many trees burned by nitrogen, especially if liquid fertilizers like UN-32 (urea ammonium nitrate 32 %) or CAN 17 (a clear solution of calcium nitrate and ammonium nitrate) are used in single applications. These liquid fertilizers are very effective and easy to use but it doesn't take much to burn young trees. I do not recommend using these liquid fertilizers on first leaf trees—I prefer to see triple 15-15-15 (15% Nitrogen - 15% Phosphorous - 15% Potassium) fertilizers used on first leaf trees. I like to see these granular fertilizers placed at least 18 inches from the trunk. With micro-sprinkler and drip irrigation systems liquid nitrogen fertilizers can be used very efficiently and easily by growers. But be careful, I know several farm managers that will not allow more than 10 gallons of UN-32 per acre per application on mature almond trees. UN-32 contains 3.54 pounds of actual nitrogen per gallon, if you put out 10 gallons of UN-32 per acre you added 35.4 lbs of nitrogen per acre. If you have 120 trees per acre and do the math you come up with 4.72 ounces of actual nitrogen per tree—almost 5 ounces! I recommend not applying higher rates than this per application. I have seen nitrogen burn occur more

often during hot summer temperatures when trees have elevated transpiration rates and obviously faster nitrogen uptake rates than what would have occurred at a cooler time of the year.

If you plan on applying a total of 200 pounds of nitrogen per year per acre to your orchard, I would prefer to see you add 10 pounds of actual nitrogen in 20 irrigations over the course of the season, rather than applying it all at once or even in two split applications of 100 pounds each. I know many growers that "spoon feed" their trees with injections of nitrogen and other liquid fertilizers into their irrigation systems and they seem quite pleased with the fertilizer efficiency. Mature trees need more nitrogen in early spring so you may want to emphasize applying more nitrogen earlier in the season than later. Nitrogen uptake has been shown to be correlated with leaf activity and photosynthesis. Thus, dormant winter applications of nitrogen should be avoided!



PLANT NEW TREES HIGH



One of the worst things that can happen to young trees from nurseries is that they are often planted too deep. Sometimes though they are initially planted at the right height, but then a berm is thrown up around the trees and their crown (the graft union between the scion and rootstock) is covered with the soil from the berm. I saw many diseased trees last spring that had *Phytophthora* root and crown infections and every one of them had their graft union below the soil

line; sometimes the union was more than six inches below. If you are planting or replanting, trees should be planted high on small mounds as shallowly as possible. Planting depth after settling should be no deeper than in the nursery, and the graft union should always be well above the soil line.

Try to follow some of these planting tips:

1. dig a hole deep enough so the roots are spread out and not cramped,
2. plant the trees so that the nursery soil line is above the current soil line,
3. plant the highest root a little above the soil line and then cover it with extra dirt, and
4. when planting allow for 3-6 inches of settling in the planting hole. I have never seen trees die from being planted too high, but I have seen many trees killed by being planted too low.

Most soils in Madera County are heavy with a high clay content. These soils have slow water

percolation, drain slowly, and remain saturated longer than well drained sandy soils. The mound around the tree trunk forces excess water to drain away from the tree, thus reducing the length of time the crown is exposed to excess surface moisture. Saturated soil conditions can occur at planting if the trees are irrigated too heavily, or when a high rainfall winter and spring occur. Some orchards survive years before a wet spring kills trees that settled too deep or had their crown covered with a berm. Plant the tree right the first time!

After making a strong case for planting the trees high, there is one exception. If you are planting on Marianna 2624 plum rootstock you should plant your trees the same depth they were planted in the nursery. With this rootstock, planting trees too high will cause them to sucker from the roots. Marianna 2624 is fairly resistant to *Phytophthora* and it can also tolerate excess soil moisture better than other rootstocks.

Be Careful Irrigating Trees at Planting Time

It is often recommended to "tank" or irrigate new trees in following planting. The purpose is to settle and firm soil around the new root system and eliminate air pockets which may dry delicate root hairs. This is sound advice in those soils which are dry, sandy, or cloddy, etc. In many situations irrigation is not needed and may be quite detrimental to those fruit trees that are sensitive to excess water. Poor growth of many new orchards can be attributed to excess water at planting time. Consider the following: 1) in most cases we are planting new trees into wet soil--and adequate soil moisture is present, 2) tamping soil firmly with your foot is sufficient to firm most alluvial soils around new roots to eliminate air pockets. I like to just add about a gallon of water to the root ball in order to fill in small air pockets that could dry roots 3) actual irrigation at planting could over saturate the soil around the young root system, and as new, tender feeder roots grow into saturated soils, conditions are excellent for their death due to lack of aeration and/or *Phytophthora* infection. Once this occurs, poor growth or tree death usually follow.

Use good judgement. Tank or irrigate trees at planting under the following conditions: 1) if you are planting late and the weather is warm, 2) if the soil is dry, and 3) if the soil can not be tamped firmly around roots due to clods etc. If you do not have these conditions, you may be able to delay the first irrigation until trees are growing well (8-10 inches of new growth). Remember, new trees are not using much water because they have few leaves, spring temperatures are cool, and there is usually a good residual supply of soil moisture that new roots can grow into.

2008 Regional Almond Meeting
Thursday, January 31, 2008
Madera District Fairgrounds, Women's World
1850 West Cleveland Avenue, Madera CA 93637

8:00 AM-12:30 PM

- 7:30 a.m. PCA and continuing education credits sign-up
- 8:00 a.m. **Update on laws and regulations**
Melissa Cregan, Deputy Agricultural Commissioner, Madera County
- 8:30 a.m. **Leaffooted plant bug biology and management**
Dr. Kent Daane, University of CA Entomology Specialist, UC Berkeley
- 9:00 a.m. **Navel Orangeworm biology and damage predictor models**
Dr. Joel Siegel, USDA-ARS Entomologist, Fresno
- 10:00 a.m. **Almond spur dynamics**
Dr. Bruce Lampinen, University of CA Almond Specialist, UC Davis
- 10:30 a.m. **Break**
- 11:00 a.m. **Almond replant disease problem**
Dr. Greg Browne, USDA-ARS Plant Pathologist, UC Davis
- 11:30 a.m. **Almond irrigation in a dry winter**
Dr. Terry Prichard, Water Management Specialist, UC Davis
- 12:00 p.m. **Almond Boom Disease, NOW Efficacy, and Kaolin Trials on Almond**
Dr. Brent Holtz, University of CA Farm Advisor, Madera County
- 12:30 p.m. **Adjourn**

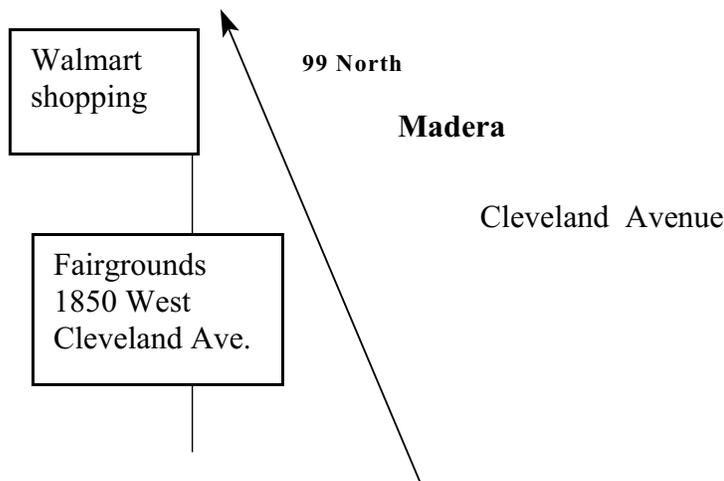
3.5 hours of PCA, CCA and Private Applicators Credit have been requested

A **free lunch** will be served by the Madera County 4-H

Sponsored by the University of California

BASF, Bayer CropScience, Dow Agro Sciences, Syngenta, Valent, United Phosphorous

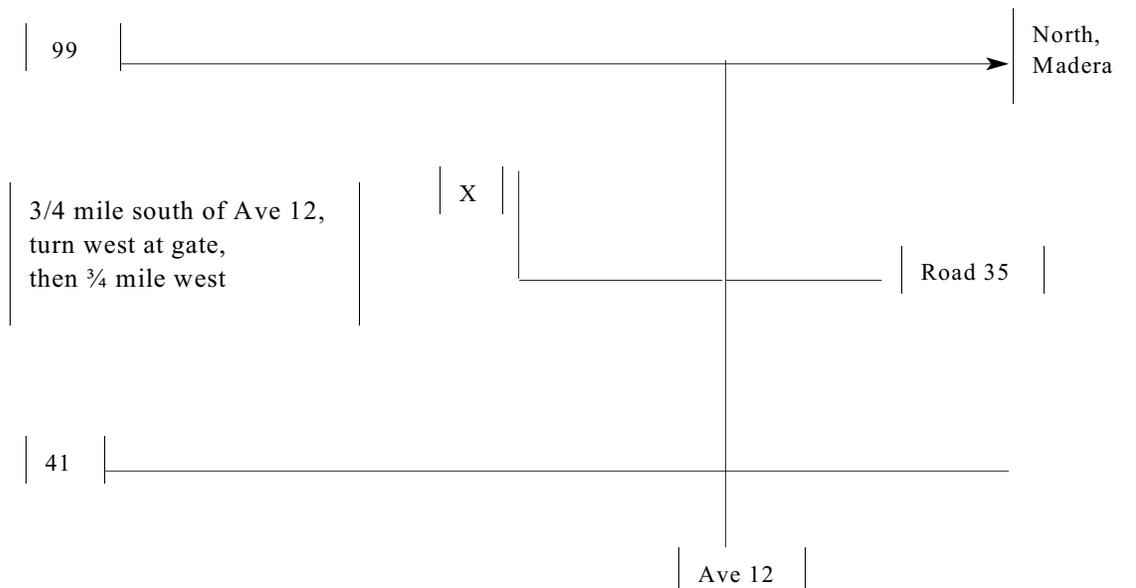
Please RSVP at 559-675-7879 ext 201



2008 Almond and Pistachio Pruning Field Day
Wednesday, February 6, 2008
9:30 AM-12:00 Noon
Wylie's Pistachio Orchard, Road 35, South of Ave 12

- 9:30 a.m. **Registration, Coffee and Donuts**
- 10:00 a.m. **Welcome and Introduction**
Brent Holtz, UCCE Farm Advisor, Madera County
- 10:15 a.m. **Dormant pruning second year almond trees**
Brent Holtz, UCCE Farm Advisor, Madera County
Bill Seaman, Seaman Nursery, Chowchilla
- 10:30 a.m. **Dormant pruning and Circle Tying fifth year pistachio trees**
Chris Wylie, Agri-World Cooperative Ranch Manager
Dave Petersen, Petersen Pistachio Development Inc.
- 11:00 a.m. **Second Tier Circle Tying of 26-year old pistachio trees**
Chris Wylie, Agri-World Cooperative Ranch Manager
Dave Petersen, Petersen Pistachio Development Inc.
Craig Wylie, First Associate Ranch Management Company (FARM CO)
- 12:00 a.m. **Lunch, provided by Valley Feed and B&B Industrial Products**
Tom Buckley and Bob Romero

Coffee and donuts also provided by Valley Feed and B&B Industrial Products
Courtesy Tom Buckley and Bob Romero
Sponsored by the University of California Cooperative Extension
Please RSVP at 559-675-7879 ext 201 by February 4, 2008 for a lunch count





2008 ANNUAL STATEWIDE PISTACHIO DAY

Visalia Convention Center

303 East Acequia - Visalia, California

Wednesday, January 16, 2008

9:00 am - 2:00 pm

Registration begins at 8:30

Pistachio Day 2008 will have three diverse, concurrent sessions starting at 9:00 am and repeating at 11:00 am, with a break at 10:30 and an industry update during lunch. A hot lunch will be provided, (but must be ordered in advance). Registration fee: \$20.00. If you have questions, please call Louise Ferguson at 530-752-0507.

CONCURRENT SESSIONS

	Session I Production Management Moderator: Bob Beede	Session II Pest Management Moderator: David Haviland	Session III Disease and Plant Development Moderator: Brent Holtz
<u>Times</u>	<u>Room: Charter Oak A/B</u>	<u>Room: Charter Oak C</u>	<u>Room: San Joaquin C/D</u>
9:00 a.m. and 11:00 a.m.	Irrigation with Insufficient Water Supply David Goldhamer UC Irrigation Specialist	Emerging Nematode Problems Michael McKenry Nematologist, UC Riverside	Botryosphaeria and Alternaria Blights and Management of Resistance Dr. Themis Michailides Plant Pathologist, UC Davis
9:30 a.m. and 11:30 a.m.	Nutrition Management Bob Beede Farm Advisor, Kings County	Understanding Navel Orangeworm Damage- What Occurred in 2007 Joel Siegel Entomologist, USDA	Canopy Management Brent Holtz Farm Advisor, Madera County
10:00 a.m. and Noon	Evaluating Soils and Water for Production Blake Sanden Farm Advisor, Kern County	Managing Mealybugs David Haviland Entomologist, Kern County	New Varieties for the California Industry Craig Kallsen Farm Advisor, Kern County
12:30 p.m.	LUNCH Pistachio Industry Funded Research Chair California Pistachio Research Board		

**2008 Annual Statewide Pistachio Day
Registration Form**

REGISTRATION (Fee: \$20.00/person. Hot lunch included.)

Name <i>(Please print or type)</i>	Lunch?	
	Yes	No
_____	<input type="checkbox"/>	<input type="checkbox"/>
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_____	<input type="checkbox"/>	<input type="checkbox"/>

Total registration fee(s): \$ _____

**Registrations must be received by
Monday, January 8, 2008.**

CONTACT INFORMATION

Registrations will be confirmed with the contact person listed below: **(*required)**

*Name _____

*Company _____

Address _____

City _____

State _____ Zip Code _____

Phone _____

*E-mail _____

Mail form with check (*made out to:* UC Regents: Fruits and Nuts Research and Information Center: Pistachio Day 2008 Account) to:

Fruits and Nuts Research and Information Center
Department of Plant Sciences
Mail Stop 2
University of California
One Shields Avenue
Davis, CA 95616-8780

OR

register online with a credit card at:

<https://ucce.ucdavis.edu/survey/survey.cfm?surveynumber=2332>

For more information, contact
**University of California Fruit and Nut
Research and Information Center:**
Phone: (530) 754-9708
E-mail: fruitsandnuts@ucdavis.edu

PCA & CCA credit has been requested.

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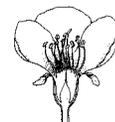
For special assistance regarding our programs, please contact us.

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Sincerely,

Brent A. Holtz, Ph.D.
Pomology Farm Advisor

The Pomology Post



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