

## Research Update: Post-Plant Nematicides in Almonds

### Overview

Controlling soil borne pests to manage impacts from parasitic nematodes and prunus replant disease is an important management concern in almonds. Pre-plant chemical fumigation has benefits when establishing an orchard, especially in replant situations. Chemical post-plant nematode controls are a relatively new product available for almond production management in California. These may prove beneficial for younger orchards where fumigation was not implemented or in older orchard when the effects of fumigation begin to diminish.

### Background

This newsletter presents information from two trial in Merced county testing post-plant nematode controls. One was implemented in a newly established orchard near Ballico, CA on ‘Sonora’ variety almonds. This tested non-fumigated trees with some treated with a combination of a foliar spray of Movento® and irrigation injection application of Velum® One (hereafter called the younger orchard). The other trial tested older ‘Nonpareil’ almond trees fumigated with Telone® II with some

treated with Velum® One (hereafter called the older orchard). The younger orchard had four consecutive years with a post-plant controls applied, while the older orchard had three consecutive years with the product applied.

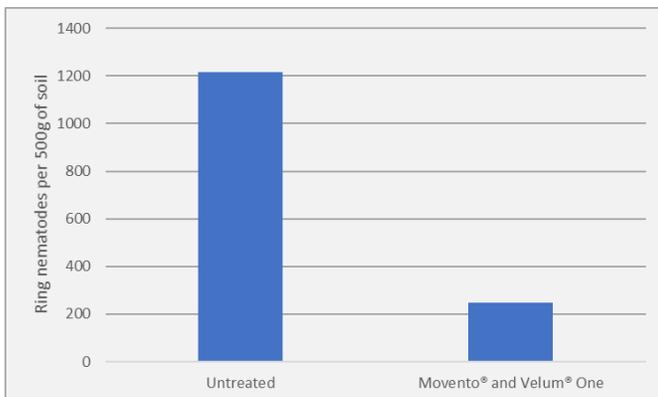
### Current Results

Measurements during the initial two years did not show discernable benefits from post-plant controls. It was not until the third consecutive year of applying the product did noticeable benefits occurred. These differences continued into the fourth year of the younger orchard. Currently, it seems like these post-plant controls have benefits within these trials, but it may take a few years before noticeable effects occur. However, these trials primarily focused on controlling ring nematodes (*Mesocriconema xenoplax*) in sandier soils with almond varieties on Nemaguard rootstock. The products may not be as effective against other soil borne pests with other soil types and rootstocks. Additionally, determining if the benefits from these post-plant controls are worth the cost of applying the products for consecutive years will be dependent on a grower’s specific situation.

#### Younger Orchard

Information shown from fourth leaf orchard after applying post-plant controls for four consecutive years started during first leaf year.

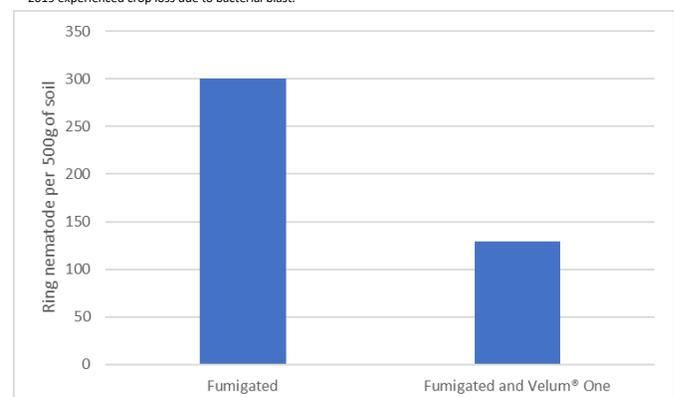
Yield (kernel lbs/acre)	
Treatment	2018
Untreated	879
Movento® and Velum® One	1050



#### Older Orchard

Information shown from ninth leaf orchard after applying post-plant controls for three consecutive years started during seventh leaf year.

Yield (kernel lbs/acre)	
Treatment	2019*
Fumigated	547
Fumigated and Velum® One	813



\*2019 experienced crop loss due to bacterial blast.

# The Healthy Soils Program and Your Orchard

Caddie Bergren

## March 2020 Events at a Glance

*March 12<sup>th</sup>, 2020*  
*Thursday*

### Healthy Soils Workshop

*Time:* 9:00 AM - 11:00 AM

*Contact:* Caddie  
(209) 385-7403  
cmbergren@ucanr.edu

*Location:*

Ag Classroom  
UC Cooperative Extension  
2145 Wardrobe Ave,  
Merced, CA 95341

*March 19<sup>th</sup>, 2020*  
*Thursday*

### Healthy Soils Workshop

*Time:* 2:00 PM - 4:00 PM

*Contact:* Caddie  
(209) 385-7403  
cmbergren@ucanr.edu

*Location:*

Ag Classroom  
UC Cooperative Extension  
2145 Wardrobe Ave,  
Merced, CA 95341

## About

Thinking about improving your soils next year? The Healthy Soils Program give grants up to **\$100,000** to California farmers and ranchers to incorporate conservation agriculture techniques that improve your soil health and sequester carbon.

Recent research in almond orchards in California have shown that cover cropping and compost application (two of the most popular practices covered under Healthy Soils) can increase your soil organic carbon levels, improve water infiltration and retention, decrease erosion and increase nitrogen. You can find a good overview (plus important management concerns) at <http://thealmonddoctor.com/2019/06/30/cover-crop-research-almonds/>.

Adding a hedgerow on the border of a field or orchard is another Healthy Soils practice that can attract beneficial pollinators to your orchard and decrease wind erosion.

Whole orchard recycling (the process of chipping up dead trees and re-incorporating them back into your soil) will also be covered under the program this year. In a long-term UC Davis study, there was a significant increase in water holding capacity, infiltration rate, soil aggregation and soil microbial activity even 9 years after incorporating wood chips into the soil. Learn more at: <https://orchardrecycling.ucdavis.edu>

## Upcoming Programs

The California Department of Food and Agriculture (CDFA) recently released a draft of the upcoming 2020 Healthy Soils Program. Here's what you need to know:

**3-Year Program:** Most soil health practices are not "quick fixes." To see results in your soil and trees, as well as to sequester carbon, you will need to adopt these practices for a minimum of three years. As part of your grant, CDFA wants you to do these practices for three consecutive years on the same fields (or in the case of tree plantings and orchard removal, to have them completed within three years).

**Rolling program deadline:** The CDFA will start accepting applications in late February on a rolling basis for 4 months, or until the funds run out. You can submit an application and find out within 6 weeks if it is approved. If they don't approve it, you can edit and resubmit it before the submission window has closed, so applying early is recommended.

**What is covered?** There are 30 different eligible Healthy Soils practices (listed at the end). You can choose to do just one practice, or a combination of many. If you already received a Healthy Soils grant, you are still eligible to re-apply for another practice or a new field.

**How to apply:** There is a web-based application that can be found at <https://www.cdfa.ca.gov/oefi/healthysoils/>. You can contact me at UC Cooperative Extension in Merced to provide free, one-on-one technical assistance with your grant in the Merced/Madera area. You can reach me by phone at (209) 385-7403 or by email at [cmbergren@ucanr.edu](mailto:cmbergren@ucanr.edu). I will also be hosting a few upcoming workshops.

## Eligible Practices

Healthy Soils has payment rates per acre for 30 different practices. Here is the full list of eligible practices:

- Cover cropping
- Conservation crop rotation
- Mulching
- Nutrient management (reduce synthetic fertilizer use by 15%)
- No till
- Reduced till
- Strip cropping
- Conservation cover
- Contour buffer strips
- Field border
- Filter strip
- Forage and biomass planting
- Whole orchard recycling
- Grassed waterway
- Herbaceous wind barrier
- Riparian herbaceous cover
- Vegetative barriers
- Alley Cropping
- Hedgerow Planting
- Multi-story Cropping
- Riparian Forest Buffer
- Tree/Shrub Establishment
- Windbreak/Shelterbelt Establishment
- Prescribed grazing
- Range planting
- Silvopasture

Compost can be purchased from a certified facility or produced on-farm. Eligible compost application rates:

Crop Type	Compost Type	Short tons/acre
Annuals	Higher N (C:N < 11)	3-5
"	Lower N (C:N > 11)	6-8
Perennials/Trees	Higher N (C:N < 11)	2-4
"	Lower N (C:N > 11)	6-8
Rangelands	Lower N (C:N > 11)	6-8



Merced & Stanislaus County  
Partners Bring You

# Funding 101

## Programs & Services For Farmers & Ranchers

Come learn about local, state  
& federal funding opportunities  
to implement new management  
practices on your farm or ranch!

Hosted by East Merced & East Stanislaus  
Resource Conservation Districts  
and the University of California  
Cooperative Extension!

The Resource Conservation Districts and UC Cooperative Extension are bringing together Merced and Stanislaus County agencies and organizations that offer programs to help you learn about cost-share funding opportunities and other services! Programs include:

- CDFA Healthy Soils Program
- On Farm Conservation Innovation Program
- Farm Bill Programs: EQIP, CSP, NAP, TAP & more!

When:

Thursday, February 13<sup>th</sup>

8:30am: Coffee, pastries & registration  
9-10am: 10 min presentations by partners  
10-11am: Open house, one-on-one discussions

Where:

Ag Classroom in Merced County  
2145 Wardrobe Ave, Merced, CA

Please RSVP with:

Caddie Bergren at [cmbergren@ucanr.edu](mailto:cmbergren@ucanr.edu) or by  
calling 209.385.7403.

For more information, visit us at <http://cemerced.ucanr.edu/>

