

Andrew Ray, Vivian Lopez, and Matt Jones , UCCE Staff Research Associates; David Doll, UCCE Farm Advisor Merced County.

Introduction: This experiment will determine the impacts of four commercially available post-plant nematicides on populations of parasitic nematodes of almond roots. The plot was established in a sandy soil with confirmed presence of ring nematode (*Mesocriconema xenoplax*), but no history of *Prunus* replant disease. Six treatments were applied and compared to an untreated control (Table 1). Growth and nematode populations will be followed for the three years after initial applications.

Methods: The trial was established in 2014 in a newly planted almond orchard located in sandy loam soil with a double line drip irrigation system. Initial nematode sampling was taken in March 2014. Initial caliper measurements of the trunks were taken in early April 2014. The orchard has alternating rows of 'Nonpareil' and 'Independence'. There were four experimental blocks created with one row for each of the seven treatments in each block, totaling 28 rows. Two blocks are in the 'Nonpareil' rows and two blocks are in the 'Independence' rows. Movento® was applied as a foliar spray. The Velum®, Certis®, and Valent® products were injected into the individual irrigation line at the riser using a Mazzei® injector. End-of-season trunk measurements were taken in November.

Table 1 List of each treatment and timings of each application in 2016. A similar schedule was followed for each treatment in 2015 and 2014.

| Product/ Timing # | Application Method | First Application | Second Application | Third Application |
|----------------------|--------------------|-------------------|--------------------|-------------------|
| Movento® (Bayer) | Foliar | May | September | - |
| Velum (Bayer)/#1 | Injection | May | June | - |
| Velum (Bayer)/#2 | Injection | May | September | - |
| Melocon® (Certis)/#1 | Injection | May | June | - |
| Melocon® (Certis)/#2 | Injection | May | September | - |
| DiTera® (Valent) | Injection | May | June | September |
| Control | N/A | - | - | - |

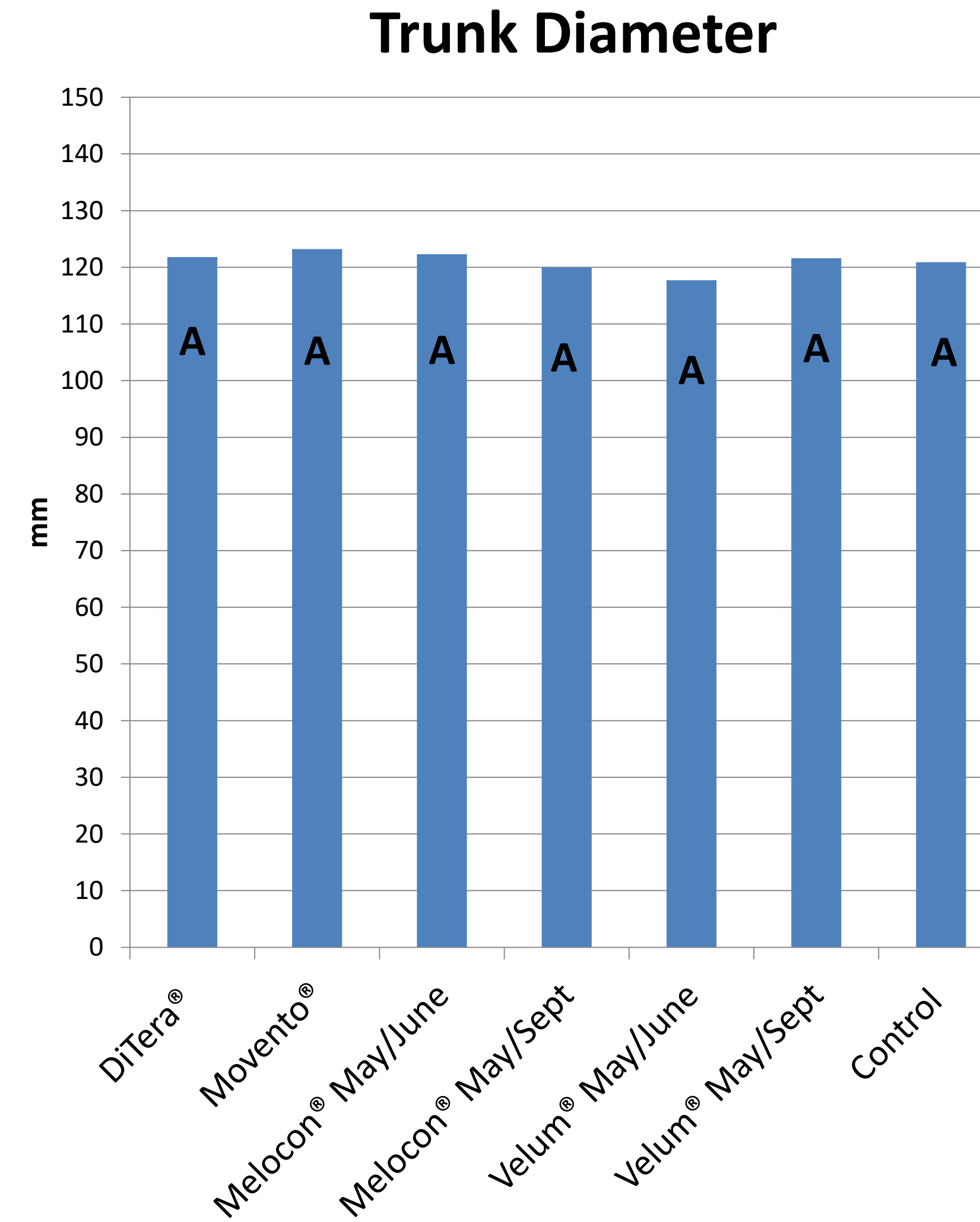


Figure 1 Trunk diameter measurement for each treatment measured in November of 2016. There were no significant differences ($p < 0.05$).

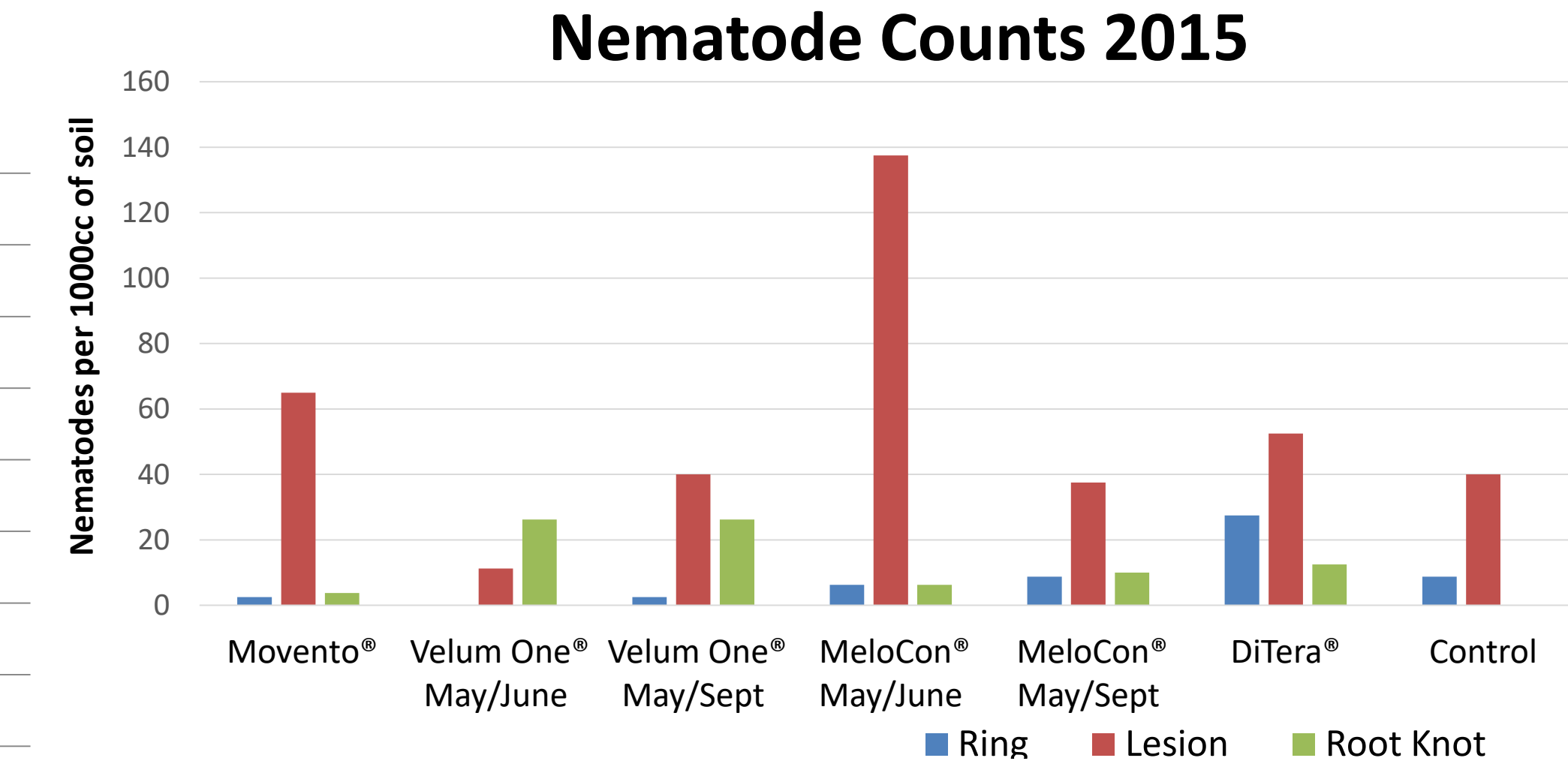


Figure 2: Nematode counts from samples take October, 2015, after second year of applications.

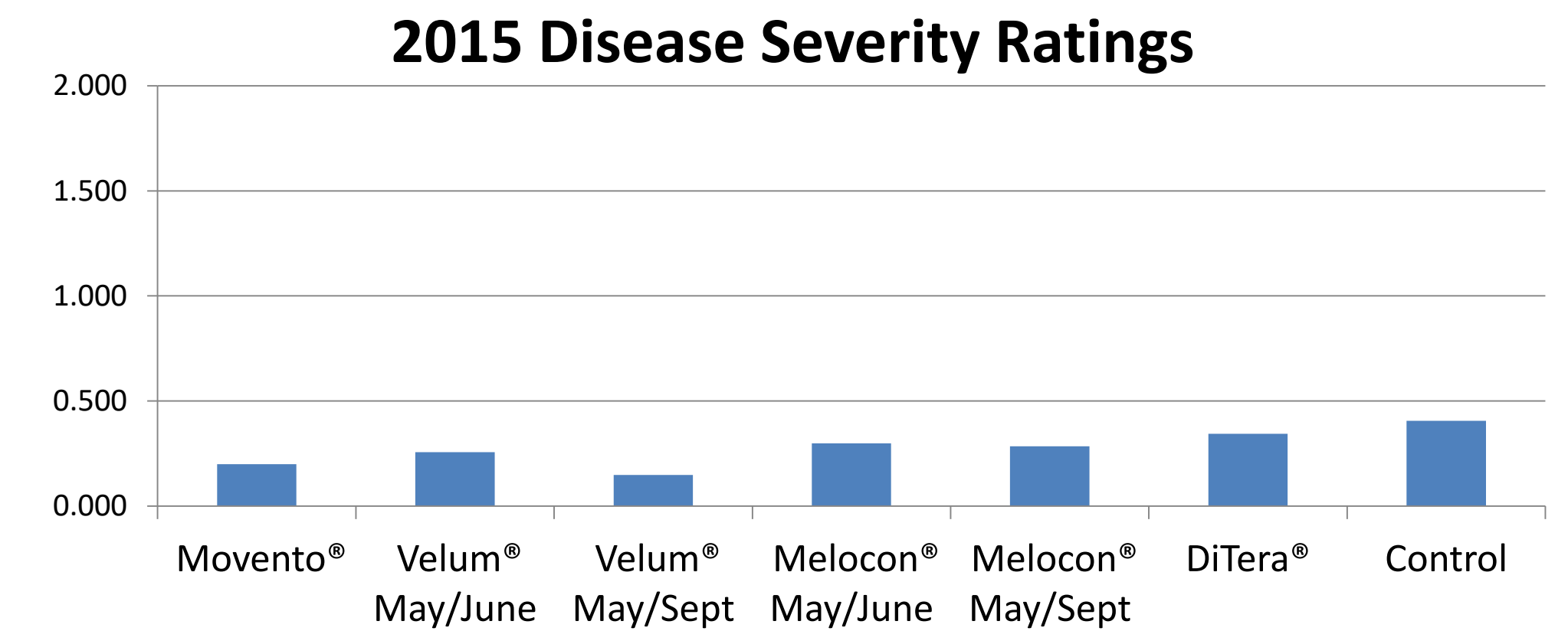


Figure 3: Average disease severity ratings taken July 8th, 2015. Trees were rated on a scale of 0-5, 0 being no replant disease symptoms, 5 being a dead tree.

Results: After three years of applications, there were no significant differences in trunk diameter growth or disease severity ratings among the treatments (Figures 1 and 3). The entire orchard grew very vigorously and the low nematode counts did not seem to impact growth.

This project was supported by Bayer, Certis, and the Almond Board of California.