Field Evaluation of Almond Rootstocks

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PROJECT SUMMARY

Objectives:

This project evaluates the field performance of several alternative rootstocks. It encompasses at least eight different trials planted in different almond growing locations in California.

- Continue to evaluate alternative rootstocks in various nonfumigated replant locations.
- Continue to evaluate alternative rootstocks for tolerance to Armillaria root and crown rot (oak root fungus).
- Continue to evaluate the compatibility and field performance of alternative rootstocks used for several almond varieties, particularly Nonpareil.
- Continue to evaluate the compatibility and field performance of newer almond varieties grown on Marianna 2624 rootstock.
- Evaluate the field performance of alternative rootstocks used in heavy, high-pH soil in high-rainfall locations.
- Evaluate rootstocks under saline conditions and with soil limitations (sandy with low cation exchange capacity, restrictive hardpan, and presence of nematodes).
- Evaluate rootstocks in marginal soil with high boron and/or low water quality.

Background:

Rootstocks are literally the foundation of California's almond industry. Most of the commercial almond trees grow atop two specific peach rootstocks, Nemaguard and Lovell. These rootstocks have some very positive attributes but also have some well-known weaknesses. Both perform poorly in heavy, alkaline soils and are susceptible to Phytophthora, oak root fungus, crown gall and other diseases. Nemaguard is also susceptible to ring nematode and bacterial canker while Lovell is highly susceptible to rootknot nematode.

Although a third rootstock, Marianna 2624, is in standard use in areas with heavy or Armillaria-infested soils, it has low vigor, suckers profusely, it can fail under replant conditions and is incompatible with Nonpareil and other varieties.

One major component of this long term project consists of a broad-based effort to improve and expand the almond industry's stock of alternative rootstocks. It includes the evaluation of candidate stocks, including some from Europe and Asia, under California conditions. Through these trials, our understanding of newer rootstocks, like Viking, Atlas, Krymsk 86 and a list of peach almond hybrids is increasing.

This evaluation process involves a number of separate rootstock trials initiated by UC Cooperative Extension personnel including Joe Connell (Butte County), Franz Niederholzer (Colusa County), Roger Duncan (Stanislaus County), David Doll (Merced County), and Carolyn DeBuse (Yolo County). These individual trials target specific conditions and the project objectives as outlined.

Project Cooperators and Personnel: Joseph H. Connell, UCCE - Butte County; Franz Niederholzer, UCCE - Colusa County & Sutter/Yuba Counties; Stan Cutter, Leslie J. Nickels Trust; David Doll, UCCE - Merced County; Carolyn DeBuse, UCCE - Yolo/Solano Counties

For More Details, Visit

- Poster location 9, Exhibit Hall A & B during conference; or on the web (after January 2013) at www.almondboard.com/researchreports
- 2011.2012 Annual Report CD (11.HORT4.Duncan); or on the web (after January 2013) at www.almondboard.com/researchreports
- Related Projects: 12.HORT10.Gradziel; 12.HORT16.Aradhya/Ledbetter; 12.PATH7.Baumgartner; 12PATH1.Browne