

Field Evaluation of Prune rootstocks

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PROBLEM AND ITS SIGNIFICANCE

The California Prune Industry has historically utilized four rootstocks, Myrobalan seedling, Myro 29C, Marianna 2624 and Lovell Peach. M40 is being planted, but not in large numbers and is currently not a mainstay rootstock for the industry. The last statewide organized prune rootstock effort was the "M" series rootstock plots planted in 1987 (Vina Monastery 3/20/87). Since the conclusion of that experiment many more potential rootstocks for prune have been identified. HBOK 50, Krymsk1 and 86, Penta, Citation, Miropac, Viking and Atlas. These are relatively new, they look promising and need evaluation under California conditions.

OBJECTIVES

1) Evaluate promising rootstocks potentially valuable for California Prune production. Plant two replicated experiments and one non-replicated observation experiment in 2011.

PLANS AND PROCEDURES

Three locations are scheduled for 2011 planting. One replicated experiment in Butte County representing a "good soil" site and a second replicated experiment in the Sutter/Yuba area representing a "marginal soil" site. Each plot will have the same rootstocks to allow direct statistical comparison plus Myrobalan seedling, Myro 29C Marianna 2624 and Lovell as "control" comparisons. A third non-replicated planting will be established at Wolfskill for additional screening of rootstocks that look interesting but have not been researched enough for planting in commercial orchards. Rootstocks were nursery grown and grafted during the 2010 season and will be transported to cold storage following digging. Scion is French prune with all bud wood from the same source so trees are as equal as possible. We expect to plant experimental trees February to March 2011.

Replicated plantings (Butte and Sutter/Yuba)

Plot Size is 6 trees per plot, in row, without guard trees. Experimental design is a Randomized Complete Block with 15 treatments and 5 replicates. 75 plots x 6 trees/plot equals 450 trees. Assuming 150/trees/Ac, total plot size is close to three acres. Rootstocks for the Butte and Sutter/Yuba experiments are : Myrobalan seedling, Myro 29C, Marianna 2624, Lovell peach, M40, M30, M58, HBOK50, Penta (Empyeon 2), Citation, Krymsk86 (Kuban 86), Krymsk 1, Miropac, Viking, and Atlas.

Non-replicated planting (Wolfskill)

The Wolfskill site was selected as an opportunity to evaluate a relatively large number of potential prune rootstocks which have not been sufficiently tested for planting into commercial orchards. Five rootstocks of each selection will be planted in row for comparison. Plot size is less than one acre. Rootstocks include: HBOCK10, HBOCK32, HBOK27, Krymsk2, WRM#2 (Doyle selection from a red leaf myrobalan type tree) Tetra (Empyrean 3), Adara (P.cerasifera from Spain), Imperial California (Plum R/S Italian Origin) ,Fortuna (Plum /peach hybrid) Krymsk 99(Plum /peach hybrid), Speaker (Plum/peach hybrid), Adesoto (Empyrean 101 or P.insititia), Julior (P insititia X P domestica) Controller 9 or p30-135 (P.salicina X P perscia), Ishtara and own rooted.

Data collection will evolve as trees mature and opportunities occur. To conserve resources not all measurements may need to be made on all trees in all years.

Possible measurements include:

- Tree growth and development: Trunk circumference, light interception, suckering.
- Yield, cropping potential and nutrition. Early bearing.
- Sugar, pressure attributes, harvest dates, bloom dates.
- Dry grade samples (will need help from Sunsweet and DFA).
- Disease and insect susceptibility ratings.
- Possible nematode samples for resistance evaluation (will need help from Mike and Becky).
- Anchorage.

DISCUSSION

This project is in the development phase. Trees were grown and grafted in 2010. Weather permitting trees will be dug in January and transported to cold storage and held for planting in February or March. Initial growth measurements and first year observations will be available in the fall of 2011 for the 2012 prune research report.