Almond/Marianna 2624 Performance

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Marianna plum 2624 rootstock is the most useful rootstock for Oak Root Fungus sites and has become increasingly important in the expansion of almonds onto heavier soils.

Mission, Ruby and Padre cultivars have shown excellent compatibility with M2624. Inconsistent field performance of Butte on M2624 has been common, yet Butte is the most desirable M2624 "compatible" variety. Evaluating the commercial potential of M2624 plantings however, requires closer spacings than typically used in almonds, resulting in more trees and higher investment expenses.

A test planting was established to check the productivity of four almond cultivars in a close planted hedgerow on M2624 rootstock. Butte trees were obtained as certified virus free (scion and root) to remove the virus affects. Commercially harvestable replications were designed into the test for yield data collection. Butte, Mission, Ruby and Padre almonds were planted March, 1989, under drip irrigation, as single N/S rows at 10' x 20' spacings for 218 trees/acre.

Results

Yield and kernel size data for 2001 are presented in the following table.

Variety	Lbs./Acre	Gms/Kernel
Padre	2,676	0.98
Butte	2,165	0.91
Mission	2,666	1.06
Ruby	2,059	1.17

Again, yields show a productive almond planting can be maintained into the 13th leaf using M2624 root. Yields have averaged 2000/ac from the 5th to 13 leaf. All four varieties produced respectable yields for 2001.

Important to the interpretation of this test is the soil which is quite shallow with a restricting clay layer at 24-36 inches. Shoot growth has been weak in recent years especially during heavy sets. Attempts have been made to invigorate this block. In 1997 a second drip line was added to one of the reps. This change has not resulted in any measurable difference in production. During the 1999/2000 winter a mechanical hedger (rotary saws) was used to prune one side of alternate rows to stimulate top and side shoot growth. An angled hedging cut was made on the shoulder of the canopy, positioned 2 feet from tree top center and angled 30 degrees down into the row middles. One side of all Ruby and Butte rows were cut that winter. This past year all Padre and Mission rows were cut. Next winter the opposite side of Butte/Ruby rows will be

cut, etc. Thus, four years will be needed to complete this hedging plan. Mission regrowth this season was considerably less than other varieties after winter hedging.

After the first winter hedging, Ruby trees produced 2-5 shoots at each saw cut which grew 24-36 inches in length. Buttes grew 3-6 shoots at each cut which grew 24-48 inches. The mechanical pruning appears to be invigorating the Buttes and Rubys, which have been the least vigorous of the four varieties. This is most interesting for Ruby given its' heavy crop load last year and for Butte given the questionable compatibility on M2624. However, this year the Ruby crop is down due possibly to limited pollen or depleted carbohydrate reserves after producing strong shoot growth while carrying a heavy crop. In general, mechanical hedging has reduced yield only marginally the year following the pruning.