

## UC MARIANNA ROOTSTOCK EVALUATION

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In the spring of 1987 a small test plot of experimental UC Marianna plum rootstocks with French prune tops was planted at the Kearney Agricultural Center, Parlier, California. This planting is a satellite plot to a larger, more comprehensive test planted near Vina in Tehama County, CA. The test at KAC involves four UC "M" series stocks along with Marianna 2624 for comparison. All trees were randomly planted in a single row ten feet apart in the row and twelve feet from one adjoining row and sixteen feet from the opposite adjoining row.

Table 1 is a summary of the tree and fruit measurements taken in 1991 from the KAC plot.

Table 1.            KAC SATELLITE PLOT - 1991 DATA

<u>Stock</u>	<u>Trunk cf. cm</u>	<u># Root Suckers</u>	<u>Wet Yield kg./tree</u>	<u>Lbs. Press</u>	<u>SS. °Brix</u>	<u>Fresh gms./ft.</u>
M40	39.5	0	72.2	4.5	22.4	24.7
M69	34.2	0	76.9	4.5	22.2	24.2
2624	40.7	2	41.1	4.7	23.7	22.8
M65	40.9	0	47.6	5.0	22.4	20.0
M30	42.1	3	63.6	4.9	21.7	22.1
M40	38.8	0	35.5	4.8	23.2	25.5
M65	38.8	0	33.8	4.7	22.9	24.4
2624	47.4	0	25.2	3.9	23.1	21.2
M30	44.2	0	46.9	4.5	20.8	18.7

Harvest date for this plot was 27 August, 1991. This was the second significant harvest from these trees and substantial variability existed. The tree canopy is now touching down the row and substantial root and light competition will probably occur from this point in time onwards. Tree size as reflected by trunk circumference initially was larger for the "M" series stocks, but now 2624 has either caught up or passed the "M" series in size. Yield of the "M" series stocks, however, still is equal to or greater than yields from 2624. Two trees are beginning to develop root suckers one is a tree of 2624 and the other a tree of M30.

In another rootstock trial at KAC, nine of the "M" series stocks, along with Marianna 2624, were planted with 71 other potential stocks for Japanese plum (Prunus salicina). Five trees of each

stock with a "Santa Rosa" top are present in the test. All trees were planted in 1988 but no nursery budded trees of the "M" series were available, so only stock was planted. The "M" series stocks were grafted in spring of 1989, making the Santa Rosa top one year younger than the comparison top on Marianna 2624. Table 2 summarizes the 1991 average tree yield, fruit count per tree and average fruit weight for each test stock.

Table 2.            "M" Series Stocks, KAC Block 702  
1990 Data

<u>Stock</u>	<u>Ave. weight</u> <u>kg./tree</u>	<u>Ave. #</u> <u>fr./tree</u>	<u>Ave. weight</u> <u>gms./fr.</u>
2624	15.2	245	62
M9	8.3	137	61
M16	13.5	223	61
M30	10.9	162	67
M40	12.2	206	59
M58	8.1	123	66
M64	11.6	189	61
M65	6.5	102	64
M69	6.4	111	58
M75	7.7	125	62

This is the second light crop produced on these test stocks but the trees remain too young to draw many conclusions. The trees are trained to a "perpendicular V" system and will approach full size in 1992. A few crown suckers are present on M65, M64, M40 and M9 but are probably not significant and can be attributed to leaving stubs on the stock after grafting. One tree of M9 has one root sucker and one tree of 2624 has five root suckers.

A randomized and replicated grower test planting was established in February of 1989 comparing M30, M38, M40, M69, Marianna 2624, Citation and an experimental USDA stock K41-10. The planting is located in the Kings River bottom east of Sanger on a site with a recurrent high water table. This situation should encourage substantial root suckering. From 45 to 60 trees of each stock was planted and then field grafted in 1990 to an experimental Japanese plum top. The first crop will be produced in 1992. Suckers are already appearing on the 2624 with about .5 to 1.0 suckers per tree. No suckering has been observed in the experimental stocks as yet. The minimum amount of data collection from this planting in 1992 will include obtaining a crop rating and root sucker counts.

A second grower test planting was established this spring (1991) including ten "M" series stocks, the USDA K41-10 and an experimental growers stock "G-3." The test is located east of Reedley and east of the Kings River on a site with heavy and layered soil having a history of suckering problems. From 40 to as many as 200 trees of each stock are included in the test. The planting was field grafted to Japanese plum this spring. Total trees of the "M" series number about 1300 in this test, with about 300 trees of K41-10 and several thousand G-3's.

Only a very small amount of rooting of the "M" series stocks was done at Kearney this season. Twenty cuttings of M9, M30 and the M-11 Redleaf were taken in fall of 1990, treated with rootone powder and field planted. Rooting percentages for all three were 100% (20 for 20 ea.). These stocks along with trees of 29C will be used in establishing an expanded prune selection block for the Prune Cultivar Development project at Kearney.