

U.C. Marianna Rootstock Evaluation  
1992 Summary of Plots  
U.C. Kearney Agricultural Center and Fresno County

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Following is a summary of the plantings of U.C. experimental mariannas that are currently under test both at Kearney and in Fresno County.

KAC 502-1

This small plot was planted in 1987 as a satellite planting to the plot at Vina in Tehama county. The top is French Prune and the comparison root is 2624. The trees allocated to this plot from Davis involved only 1 or 2 trees each of 4 different stocks. Production and growth data was collected in 1990 and 1991. At this time, because of the very small numbers of trees and incomplete representation of stocks, all data collection has been discontinued except for sucker counts. In 1992, M30 and M65 averaged one root sucker per tree. M40, M69, and 2624 developed no suckers.

KAC 702

This project is a *Prunus* rootstock trial involving 80 experimental stocks and is being carried on in cooperation with Ted DeJong and Scott Johnson of UC and David Ramming, USDA. Nine of the 10 experimental UC marianna stocks were established in this test, five trees of each stock, grafted to a Santa Rosa plum top. The rootstock was planted in 1988 and the top grafted in 1989. The comparison 2624 and 29C trees were planted in 1988 with a topstock already in place but the M series stocks have currently caught up in size. Table 1 below summarizes average harvest weight per tree in Kilos, a size range of average fruit size in grams (1st pick - 2nd pick) and an average count of suckers per tree (root - crown).

Table 1  
"M" Series Stock, KAC Block 702, 1992

Stock	Average Wt. per tree (k)	Average size (gms) (1st pick-2nd pick)	Trunk cmf. (cm)	#suckers/tree (root-crown)
M9	25.6	62 - 57	42.0	0.2 - 0
M16	22.3	64 - 60	43.1	0 - 0
M30	27.2	70 - 67	50.1	0 - 0.4
M40	28.4	55 - 63	45.8	0 - 6.3
M58	28.1	72 - 67	47.8	0 - 0
M64	23.5	69 - 70	46.5	0 - 1.2
M65	18.8	69 - 68	45.5	0 - 2.8
M69	22.2	62 - 60	52.6	0 - 2.0
M75	36.5	69 - 66	49.5	0 - 0.2
2624	24.7	60 - 58	47.0	3.4 - 0.6
29C	19.4	65 - 69	47.0	0.2 - 0.8

## KAC 502S

This block is part of the selection block being used in the UC Prune Cultivar Development Project located at Kearney. A total of 47 trees from 3 "M" series selections were established in spring of 1992, along with comparison trees of Myro 29C, Marianna 2624, and Nemaguard peach. Several additional selections will eventually be established in block 502S. The purpose of this planting is the evaluation of advanced prune selections for compatibility and performance on a range of rootstocks. The principal measurement in this block will be root suckers counts until superior top/stock combinations are identified.

## Sanger #1

This plot is a randomized and replicated grower test planting 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 recurrent high water table. This situation has encouraged early and substantial root suckering. From 45 to 60 trees of each stock was planted and then field grafted in 1990 to an experimental Japanese top. A light crop was produced in 1992 but no weights were taken. Root sucker production from 2624 averaged 0.78 sucker per tree in 1992. M30 produced 0.43 sucker per tree and M69 produced 0.09 per tree. Suckers were not evident on any other stocks in the test. A total of 208 "M" series trees are currently involved at this location.

## Sanger #2

This is an extension of the Sanger #1 plot and involves approximately 100 trees each of three additional stocks M11R, M30 and M58. These trees are currently in the nursery and will be planted in early 1993.

## Reedley #1

This grower test planting was established in 1991 and includes ten "M" series stocks, the USDA K41-10 and an experimental grower's stock. The test is located east of the Kings River near Reedley on a site with heavy and layered soil having a history of suckering problems with 2624. Numbers of trees of each stock are listed in Table #2 with a total of "M" series stocks at 1304. The trees are currently too young for yield measurements or sucker counts.

## Additional Tests

Table #2 lists an additional 1045 cuttings made this fall (1992). Two additional grower test plantings are anticipated in 1994 from these stock. The first is a minimum 10 each randomized plot of the 11 listed items planted in eastern Fresno County with French Prune top. The second is a 10 to 15 each randomized plot of the 11 listed items planted in western Fresno County with French Prune top. Both growers have agreed to plant the test trees, the final numbers depending on cutting rootability and final nursery dig out percentages. If rooting percentage is high additions to the KAC 502S plot and the Sanger #2 plot would be anticipated.

It is too early yet to establish definite conclusions regarding these experimental stocks but it would appear that some trends are developing. What is clear is that marianna stocks perform differently on different soil types. Trees grown on deep, uniform soils such as those found at Kearney do not tend to sucker as rapidly or as profusely as trees on layered or shallow soils. In order to have meaningful and rapid evaluation of suckering potential the more difficult sites need to be sought out and utilized.

Table 2  
Marianna Rootstock Tree Count  
KAC and Fresno County, 1992

<u>Stock</u>	<u>KAC 502-1</u>	<u>KAC 702</u>	<u>KAC 502S</u>	<u>Sanger #1</u>	<u>Sanger #2</u>	<u>Reedley #1</u>	<u>1992 cuttings</u>
M9		5	17			127	60
M11R			11		100		166
M16		5				224	50
M30	2	5	19	45	100	200	60
M38				54		130	200
M40	2	5		48		164	60
M58		5			100	63	113
M64		5				80	119
M65	2	5				146	60
M69	1	5		61		123	50
M75		5				47	107