

## Production and Management Strategies for New Mandarins in California

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The main project objectives in 2004-2005 were to study compatibility and seediness among mandarins. In 2004-2005 we generated more information about compatibility/seediness among mandarins especially the compatibility and seediness issues with the triploid mandarins (Shasta Gold, Tahoe Gold and Yosemite Gold). The results from the 2004 hand cross-pollination at the UC Lindcove Research and Extension Center (LREC) are shown in Table 2.

The third-year results showed that the triploid seedless Yosemite Gold mandarin could cause limited seeds (2.59% fruit set), average 4.33 seeds per fruit in 2004 crosses with Fina Sodea Clementine and 2.94% fruit set, averaged 4.33 seeds per fruit. Shasta Gold and Tahoe Gold caused 2.94% fruit set (averaged 2.33 seed per fruit) and 4.59% fruit set (averaged 5 seeds per fruit) in Afourer mandarin in 2004 crosses. Yosemite Gold caused 1.71% fruit set with average 0.5 seeds per fruit in cross with Nules Clementine mandarin in 2004.

Based on the 2003 and 2004 results, it is safe to conclude that the triploid seedless mandarins (Shasta Gold, Tahoe Gold and Yosemite Gold) could cause limited number of seeds in diploid mandarins such as Fina Sodea, Nules or Afourer mandarin, but the problem is not severe enough to deserve special consideration.

More hand cross-pollination between new mandarins and existing citrus cultivars completed in spring 2005 at LREC and the crosses we made are shown in Table 1. We are interested in the issue of stimulated parthenocarpy for enhancement of mandarin production. Spring 2005 turned out to be very similar to the season of 2003. Most likely due to the lack of chilling accumulation in winter 2004-2005, the flowering of Nules Clementine mandarin was severely affected. The bloom was severely delayed, and it was difficult to find enough flowers at one time to make all the necessary crosses. Fruit of Nules and Fina Sodea are usually harvested in December, and fruit of Afourer are harvested in January.

**Table 1. Female parents, crosses made, and number of crosses made for 2005 season.**

Female Parent	Type of cross or Male Parent	# Cross made
Nules	Midnight Valencia	100
Nules	Minneola Tangelo	82
Fina Sodea	OP	111
Fina Sodea	Midnight Valencia	99
Fina Sodea	Fukumoto Navel	90
Fina Sodea	Washington Navel	105
Fina Sodea	Minneola Tangelo	102
Afourer	OP	110
Afourer	Midnight Valencia	109
Afourer	Fukumoto Navel	103
Afourer	Washington Navel	102
Afourer	Minneola Tangelo	109
Afourer	Star Ruby Grapefruit	103
Afourer	Chandler Pummelo	103

**Table 2. Results of selfing, open-pollination (OP), and parthenocarpy (Parth), in cross pollination studies of mandarins in 2004.**

Female Parent	Type of cross or Male Parent	# Cross made	Total fruit #	% fruit set	Average seed # per fruit	Seed # range
Marisol	OP	102	6	5.88%	1.5	0-6
Marisol	Parth	100	1	1%	0	0
Marisol	Selfing	104	0	0%	-	-
Fina Sodea	OP	116	19	16.38%	8.05	2-22
Fina Sodea	Parth	103	0	0%	-	-
Fina Sodea	Selfing	109	0	0%	-	-
Afourer	OP	101	9	8.91%	14.22	11-18
Afourer	Parth	102	0	0%	-	-
Afourer	Selfing	106	2	1.89%	8.5	9-10
Nules	OP	114	18	15.79%	1.67	0-12
Fina Sodea	Afourer	108	47	43.52%	22.45	3-38
Fina Sodea	Shasta Gold	111	0	0%	-	-
Fina Sodea	Tahoe Gold	110	0	0%	-	-
Fina Sodea	Yosemite Gold	116	3	2.59%	4.33	3-6
Fina Sodea	GoldNugget	109	0	0%	-	-
Nules	Afourer	107	84	78.5%	27.08	4-43
Nules	Yosemite Gold	117	2	1.71%	0.5	0-1
Afourer	Fina Sodea	129	36	27.91%	14.1	6-22
Afourer	Nules	106	9	9.09%	9.89	6-14
Afourer	Shasta Gold	102	3	2.94%	2.33	1-5
Afourer	Tahoe Gold	109	5	4.59%	5.00	1-13
Afourer	Yosemite Gold	104	0	0%	-	-

**NOTICE**

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