

## SUMMER VS. WINTER PRUNING TO SHORTEN PRUNE NON-BEARING YEARS

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### PROBLEM AND ITS SIGNIFICANCE

Prune trees require several years after planting in the orchard site before bearing the first crop. This establishment period, while it is needed to build the scaffold and framework of the tree, is also costly for the grower. High land values and high interest rates require that this time interval be as short as possible. Past research and grower experience has shown that long pruning will shorten the non bearing time period and is currently being employed by growers. It still takes 5 or 6 years to reach production.

A second potential problem that may develop in the near future is the continued reduction in our winter agricultural labor force. More workers are returning to Mexico during the winter for the holidays and not returning to work until it warms up in the spring. This reduced labor plus increasing demands on the remaining labor force continues to drive wages up if you can even get sufficient people for the job. One possible way to alleviate part of the pressure on the limited winter labor is to change the time of pruning to other seasons. Spring or summer pruning may have some advantage on reducing the non bearing period and would require labor during the late spring or early summer before prune harvest. While other farm activities such as irrigation and weed management occur during this time there is not a high demand for labor in this time period in prunes. Summer pruning would also not create any pruning brush because the soft, small sized wood and pinched tips removed would readily decompose.

### OBJECTIVES

1. To decrease the time interval between tree planting and the first economical harvest.
2. To establish a highly productive prune orchard in the shortest time.
3. Look at labor utilization on tree pruning and training to maximize worker utilization during early summer.
4. Compare summer pruning vs. winter pruning of young trees.

## PLANS AND PROCEDURES

Established a trial of French prune on Myrobalan 29C with 5 replications of 3 trees per replicate. Treatments established:

1. Standard dormant long pruning.
2. No dormant pruning - Prune June each year.
3. Heavy Prune third dormant. Then regular dormant pruning.
4. Regular long pruning third dormant. Then regular dormant pruning.
5. No pruning until third growing season, then prune June each year.
6. Regular long pruning fourth dormant, then regular dormant pruning.
7. No pruning until fourth growing season, then prune June each year.
8. No pruning until after heavy production
9. No pruning.

Nine treatments x 5 replicates (3 trees) = 135 trees.

The orchard where these experiments are planted is on land that has not been in orchards for several years. It is Yolo loam soil, irrigated by well water and laser leveled. The trees are irrigated by microsprinkler. Several light nitrogen fertilizer applications are applied per season.

The prune trees were planted in the spring of 1992. The various pruning treatments were implemented at appropriate times. The trial is a randomized complete block design with nine treatments replicated five times. Three trees are in each plot.

Table 1. Shows Various Data Collected in 1994, 1995 & 1996 From Summer Vs. Winter Pruning Trial

Pruning Timing	Pruning Started	Trunk X Sect. Area	1994	Dry Yield Lbs. Per Acre			Yield Efficiency
				1995	1996		
Dormant	92	31.5 C	10	228 D	5815 D	1.07 N.S.	
June	92	31.8 C	180	1400 BC	6232 CD	1.15	
Dormant-H	93	38.5 AB	34	194 D	7584 AB	1.15	
Dormant	93	35.1 BC	173	737 CD	6029 CD	1.00	
June	93	38.9 AB	194	1200 BC	7157 BC	1.08	
Dormant	94	38.2 AB	260	1955 AB	6311 CD	0.98	
No	-	39.5 AB	277	1977 AB	8061 A	1.20	
No	-	39.8 AB	442	2069 AB	7576 AB	1.11	
No	-	41.0 A	318	2710 A	7544 AB	1.06	

Table 2. 1996 Fruit Evaluation From The Summer Vs. Winter Pruning Trial

Pruning Timing	Pruning Started	Dry Away	Count Per Lb.	% Undersize.
Dormant	92	2.72 N.S.	68.3 N.S.	2.6 N.S.
June	92	2.69	74.9	4.9
Dormant-H	93	2.76	73.3	3.4
Dormant	93	2.72	77.0	4.4
June	93	2.71	78.5	7.5
Dormant	94	2.83	75.5	3.9
No	-	2.70	76.1	6.0
No	-	2.68	75.3	4.8
No	-	2.74	77.8	5.2

## DISCUSSION

The yield from these trials averaging about 3.5 dry ton on fifth leaf or fifth growing season trees demonstrate that 4 year old trees are capable of producing excellent tonnage with respectable size (75 count) prunes. All treatments have been long pruned or lightly pruned at all pruning times as indicated except for treatment 3 which was not pruned in 1992 but had major remedial pruning in 1993 then lightly dormant pruned in 1994 and 1995.

The highest yield occurred on the trees that were not pruned and the trees with the heavy remedial pruning in 1993 and light pruning after. This last treatment have very little production in 1995 whereas the unpruned trees produced about a ton in 1995 as well as the high crop in 1996. Lowest production occurred on trees that have been pruned every year either in dormant or in June.

Trees that were pruned every year had the smallest trunk cross sectional area. This measurement is also indicative of the total volume of the tree. The unpruned trees were the largest.

The dry away showed no differences with any of the pruning treatments. There was no significant differences in the count per pound or in the percentage undersize although there may be a trend of slightly larger fruit in the treatments with the lighter yields.