

## **PRELIMINARY STUDY TO EVALUATE SPRING TOPPING FOR PRUNE TREE HEIGHT CONTROL.**

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### **BACKGROUND**

Tree pruning costs growers a significant amount of money, both directly in labor costs and indirectly in the form of workers' compensation premiums. However, most fruit in a prune crop are carried on spurs that must be pruned to maintain good fruit size and tree structure for an effective shake at thinning and harvest. Pruning from the ground, using power tools on extension poles or 36" lopers, may provide growers a way to continue to afford orchard pruning.

No studies, in prune, have examined when topping can be used to minimize return growth and help control tree height. In general, dormant pruning is reported to invigorate trees, while pruning in-season reportedly decreases tree vigor.

### **OBJECTIVE:**

Demonstrate spring topping of prune trees can reduce shoot growth compared to dormant pruning.

### **PROCEDURE:**

Two orchard rows of French prunes on Myro29C rootstock planted in 1996 were topped to a height of 9 feet on each of five dates by the grower in spring, 2004: April 20, May 5, May 19, June 4, and June 22.

On each topping date, at least 50 pieces of wood removed by the topper were measured for length of total removed wood and length of current season shoots. In addition, the number of fruit per tree removed with the topped wood was estimated on at least two dates.

Topped trees were visually assessed to determine general tree responses to topping at these timings.

## RESULTS:

TABLE 1. Number of unbroken, topped wood pieces of certain total length (in 5" increments) for the five topping dates.

Length	20-Apr	5-May	19-May	4-Jun	22-Jun
5-10"	0	0	0	0	0
10-15"	0	0	0	0	0
15-20"	1	0	0	0	0
20-25"	6	0	0	0	0
25-30"	16	0	0	0	0
30-35"	9	2	0	0	1
35-40"	13	5	2	3	4
40-45"	10	5	2	2	6
45-50"	0	6	4	3	9
50-55"	0	10	12	10	8
55-60"	0	7	13	9	8
60-65"	0	8	12	13	14
65-70"	0	9	7	7	6
70-75"	0	2	4	9	7
75-80"	0	0	3	1	2
80-85"	0	0	4	5	3
85-90"	0	0	2	0	0
90-95"	0	0	0	1	1

TABLE 2. Number of unbroken, topped current year shoots of a range of total lengths (in 5" increments) for the five topping dates.

Length	20-Apr	5-May	19-May	4-Jun	22-Jun
5-10"	23	1	0	0	0
10-15"	23	8	7	2	2
15-20"	12	13	11	4	0
20-25"	2	12	15	3	16
25-30"	0	11	12	15	13
30-35"	0	9	10	11	19
35-40"	0	3	3	11	11
40-45"	0	3	4	7	3
45-50"	0	0	4	7	4
50-55"	0	0	0	0	1
55-60"	0	0	0	1	0
60-65"	0	0	0	0	1
65-70"	0	0	0	0	0

Fruit removed with topping averaged 30-33 pieces per tree.

## CONCLUSIONS:

In this orchard, tree height was reduced by 2-5 feet, depending upon the timing of topping. At the same time, shoot regrowth did not exceed 12-18" in height, resulting in trees no taller than 11' at harvest.

Regrowth potential was presumed to be high in 2004 due to very light crop and generally mild, and significantly less regrowth might have occur in a heavily cropping orchard. In addition, the light 2004 crop meant that few fruit were removed at topping and a much higher number of fruit might be removed in a year when the orchard set a heavy crop. The amount of fruit removed may depend upon thinning practices.

This study did not find any "red light" barriers to the use of spring topping of prune trees for height control, and further work may help prune growers find ways of saving money in their pruning programs.