

## A PROMISING NEW SURFACTANT FOR THINNING PEACH BLOSSOMS, 2001

Bryan Wilkins, Robert Ebel, Jim A. Pitts, and Robert Boozer

Peach trees are prolific fruit producers and set more fruit than the tree can support. Trees must be thinned to have fruit that are of acceptable size for market. Thinning is usually done by hand, which is very costly and time consuming.

In the late 80s and early 90s researchers at Auburn University worked with several different chemicals to try and find an effective bloom thinner. Surfactant WK proved to be very promising. Researchers were able to determine that the active ingredient was Tergitol TMN-6 or Tergitol TMN-10.

In 2000, Tergitol TMN-6 and Tergitol TMN-10 were tested at two rates, 2% and 4%, and at two stages of bloom development, full bloom and petal fall. Both chemicals thinned effectively and had no adverse effects on fruit quality. However, the 4% rate at petal fall defoliated trees and was omitted in future tests.

In 2001, only Tergitol TMN-6 was tested at varying rates. The study was arranged as a randomized complete block design with seven treatments and five replications in single tree plots with a buffer tree between each treatment tree and a buffer row between each treatment row. Trees were sprayed at

90% full bloom and at petal fall with concentrations of either 0%, 1%, 2%, or 3%. Bloom counts were taken before spraying and fruit counts were taken before hand thinning. All normal commercial practices were followed in regards to harvest.

Time of application did not alter thinning but thinning early did increase fruit size at hand thinning (see table). Thinning with the chemical did not adversely affect fruit quality. The extent of thinning correlated with the rate of chemical applied. Fruit quality was not adversely affected by the chemical. Tergitol TMN-6 effectively thinned peach blossoms without adverse effects on the tree or fruit.

**FLOWER REMOVAL AND FRUIT GROWTH OF PEACHES  
TREATED WITH TERGITOL TMN-6, 2001**

	Fruit set (%)	-Fruit weight (g/fruit)	hand thinned- number (no/tree)	Total fruit harvested (no/tree)	Yield (lbs/tree)	Fruit weight (g)
Concentration (%)						
0	46.0 a <sup>1</sup>	16.2 c	1416 a	713 a	186	127 d
1	37.0 b	18.8 b	686 b	689 ab	213	144 c
2	23.0 c	20.8 b	456 bc	490 bc	180	167 b
3	9.0 d	24.3 a	138 c	347 c	149	192 a
Time of application						
Control	46 a	16 b	1416 a	713 a	84	127 b
Full bloom	22 b	22 a	348 b	424 b	71	171 a
Petal fall	24 b	21 a	506 b	594 ab	93	165 a

<sup>1</sup> Means separation within columns by Duncan's Multiple Range Test  $p = 0.05$ ; columns without letters are not significantly different.