

EFFICIENT NITROGEN APPLICATION TIMING IN PRUNE PRODUCTION

Bill Olson, D. Ramos, J. Yeager, K. Uriu, J. Pearson

ABSTRACT

Parameters relating to yield continued to show that trees receiving no nitrogen fertilizer for 5 or more years performed poorly. Percent fruit set, however, was not influenced by nitrogen level or nitrogen application timing. Fruit quality parameters were not influenced by nitrogen timing in this trial. For the first time in 7 years there is some evidence that a July nitrogen timing had a positive influence on production over other nitrogen application timings. The July timing had the greatest number of fruit and the highest yield per trunk area over all other treatments.

REPORT

A low rate of nitrogen (1/2 lb/tree) had been applied and incorporated via water and/or tillage in a uniform replicated three-acre prune plot at different times of year starting in July 1975 to determine if there was an advantage in applying nitrogen fertilizer at different times of year. The nitrogen application timings are: Dormant (Jan.), Bud Swell (Mar.), Beginning Shoot Growth (May), End of Shoot Growth (July), Post Harvest (Sept.), Leaf Fall (Nov.), and an unfertilized check. Of the parameters being measured, a statistically significant difference at the 5 percent level was found only with the dry yield per trunk area, fruit density per trunk area and the bloom density. The dry yield, fruit and bloom density/trunk area was significantly poorer in the untreated check. The density of prunes and dry yield/trunk area was greatest when nitrogen was applied at the End of Shoot Growth. The untreated treatment resulted in fewer prunes than did treatments where nitrogen was applied from dormance through End of Shoot Growth. Fruit set was uniform throughout the trial indicating that nitrogen status of the tree has no influence on the ability to set fruit. However, it does have an influence on the number of blossoms and number of fruit produced. Fruit quality parameters such as soluble solids and fruit pressure do not appear to be influenced by nitrogen application date. That is, fruit maturity is neither advanced nor delayed by different nitrogen application dates. Monthly leaf analysis data indicate that only the untreated plots were deficient in nitrogen. Any conclusion drawn to date would have to be that the time of nitrogen application has no influence on any of the parameters being measured. However, yield parameters tend to favor spring and summer nitrogen application timing. The repeated absence of the application of nitrogen has a negative influence on bloom density and yield. There is no evidence that any nitrogen application timing had an influence on the trees' ability to size a given number of prunes (see table). Also, any addition benefit derived from split nitrogen applications under the test field conditions would seem unlikely since no single nitrogen application timing stands out as superior to any other nitrogen application date. No further data collection will be undertaken in this trial. Efforts will now be diverted to data analyses and publication of results.