

## SUMMARY

### **Nitrogen, Phosphorus and Potassium effect on flower set, fruit set and yield on Persian Lemon (*Citrus latifolia Tanaka*)**

The Persian lime is a vigorous evergreen tree, that occurs in tropical and subtropical climates. Its fruit is prized for human consumption and trade. In the 2011-2012 cycle, Mexico was the seventh worldwide producer of this fruit with five main producing states: Veracruz, Colima, Michoacán, Oaxaca and Yucatán. In the Papaloapan basin, within the limits of Oaxaca and Veracruz this crop is starting to spread in an area of 24 375.72 ha planted in Oaxaca. However, this crop faces some problems that diminish its production. These include the indiscriminately application of fertilizers without a prior diagnosis, which increases costs and probably soil and water contamination. Thus, the aim of this study was to evaluate the response of Persian lime (*Citrus latifolia Tanaka*) to three formulas of nitrogen, phosphorus and potassium combined with three doses of urea, in production and fruit set in the community of El Porvenir, in the congregation of Vicente Camalote Acatlán, Perez Figueroa, Oaxaca. Twelve treatments were tested combining four formulas of N-P-K fertilizers (00-00-00, 20-10-20, 44-46-60 and 125-40-60) applied to the ground, with three doses of urea applied to the foliage (0.0, 2.0 and 4.0%). The experimental design was a randomized blocks and rate of vegetative buds, rate of flowering, fruit set and yield data were collected. These data were analyzed with the R ver. 3.0 statistic program. Although there was a significant difference among vegetative buds data, the separation was not clear. Combinations of the 125-40-60 and 20-10-20 formulations with 2% urea showed the higher values. This behavior was repeated for flowering index, indicating the relationship between vegetative growth and bloom. With respect to fruit set, no differences were observed in relation to urea application. However, the N-P-K 125-40-60 and 20-10-20 formulations were significantly higher, behavior that was repeated in performance for yield. Therefore, it is considered for the conditions of this experiment that the best N-P-K formulas were 125-40-60 and 20-10-20, and its combination with urea 2% increased vegetative growth and flowering. However, the economic analysis showed that the best cost-effective treatment was the one with the 20-10-20 formula.

Key words: Persian lime, growth, bloom, fruit set, yield