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Economic level of nitrogen application in guava 'Paluma'

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The potential of production of guava 'Paluma' is directly related to nitrogen fertilization. The high cost of this fertilizer and the variation that occurs in the commercialization of guavas, are important factors to define the most appropriate doses of N for this fruit tree. The study aimed to establish the most economic dose of nitrogen fertilizer in orchards of guava 'Paluma' intensively managed. The experiment was carried out in Vista Alegre do Alto, SP, Brazil, in an orchard with seven-year-old irrigated plants, spaced by 7 x 5 meters, managed with pruning during three consecutive cycles of production. The soil is dystrophic Acrisol. The experimental design was a factorial consisting of four nitrogen levels (0, 0.5, 1.0 and 2.0 kg N plant^{-1}) and four of potassium (0, 0.55, 1.1 and 2.2 kg K2O plant^{-1}) in a randomized block design with three replications. It was used urea and potassium chloride, split into four equal applications. The process of fertilizing was supplemented with superphosphate, boric acid and zinc sulfate. Fruit yield was influenced by nitrogen fertilization ($p < 0.01$) in the three production cycles. The most economic level was calculated based on the derived regression equation between yield and nitrogen rates, making it equal to the ratio of exchange. During the experimental period, prices of urea (45% N) ranged from R$ 1.00 to 1.10 per kg of urea. The prices of commercialization of guava fruit to industry ranged from R$ 0.25 to R$ 0.30 / kg of fruit. Thus, it was stipulated two terms of trade price of N / price of guava. For the relation (2.22/0.30), considering the lower price of N and the highest amount paid during the period the most economical dosages would be l 0.93, 1.04 and 1.06 kg N plant^{-1} respectively for the first, second and third production cycle, which would provide yields of 64.6, 54.1 and 63.1 t.ha^{-1}. On the other hand, applying the relation (2.44/0.25), using the highest N and lowest price of the guava, the most economical dosages were 0.80, 0.94 and 0.99 kg N plant^{-1} reaching 63.5, 53.3 and 62.5 t.ha^{-1} respectively in reach cycle. Thus

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the economic analysis can be applied to establish the most appropriate dose of N to be applied in guava orchards allowing greater profitability for producers.

Keywords: productivity, guava, *Psidium guajava* L.

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