

For most growers, potash rates based on ratio to nitrogen will continue to be the most used guide. Results of this experiment give support for the fertilizer recommendations made for calcareous soils in Florida Agricultural Experiment Station Bulletin 536A. In addition, the results do indicate greater difficulty in maintaining adequate leaf potassium at high rather than low nitrogen. Therefore relatively higher potassium mixtures (at least 5 K₂O to 4 N) should be used with high nitrogen application rates than would be necessary with low nitrogen rates. At low nitrogen rates, it may be inferred that a ratio of 1 N to 1 K₂O would be adequate, although this exact ratio was not included in the experiment at the low nitrogen rate.

Finally, fertilizer practice in these situations must be adjusted to produce fruit of greatest market value. Growers whose market demands highest quality fresh oranges may find it necessary to limit fertilizer application rates to minimum amounts. At the other extreme, growers who simply aim to produce the greatest number of pounds of soluble solids per tree will seldom be ill advised to fertilize heavily and aim for greatest possible total fruit yield.

SUMMARY

Three levels of nitrogen and three levels of potassium fertilization were applied to bearing Valencia orange trees on a typical calcareous

soil in the Indian River area of Florida over a six-year period. The higher levels of nitrogen fertilization resulted in dense, dark green foliage compared with the low levels, while potassium fertilization had little effect upon tree appearance. Both low nitrogen and high potassium fertilization resulted in noticeable magnesium deficiency symptoms in the foliage. Yield of fruit was significantly reduced by low nitrogen from the second year of the experiment, but low potassium did not significantly influence yield until the sixth year of the experiment. Both high nitrogen and high potassium increased the acidity of the juice and delayed maturity. High nitrogen increased the amount of green color on the fruit. Increasing nitrogen tended to decrease fruit size, while increasing potassium tended to increase fruit size, with indications that the potassium effect was of greater influence. Other effects on fruit quality were of minor significance.

LITERATURE CITED

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CURRENT STUDIES ON THE EFFICIENCY OF EQUIPMENT FOR THE APPLICATION OF PESTICIDES TO CITRUS TREES IN FLORIDA

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Equipment for the application of agricultural pesticides is equally as important as the pesticides. During recent years failure to obtain satisfactory pest and disease control in tops of trees with effective pesticides has indicated a need for better equipment for spraying the tops of citrus trees. Since 1938, application

equipment and methods have been evaluated periodically (1, 2, 3, 4, 5, 6, 7, 8, 9), and, although improvements have resulted, tall trees with interlocking branches are still difficult to spray. An additional study of this problem has been needed and preliminary results are reported here.

The purpose of this study is twofold: (1) to measure the ability of sprayers to obtain uniform and thorough application of spray materials to all parts of citrus trees; and, (2) to improve the application of sprays to Florida citrus by modification of existing machines

