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RESEARCH NOTE

NITROGEN UPTAKE BY CITRUS TREES

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Supplies of nitrogen in sufficient quantities is inevitable for better corp yield and improved quality of citrus fruits. Since the losses of N after application are quite high, therefore, its judicious application is essential.

A short term study was conducted on four years old Feutrells' Early trees to verify the validity of the recommended time of application of nitrogen fertilizers which is fifteen days in the case of NO_3 nitrogen and one month for NH_4 nitrogen, ahead of flowering. In this experiment two fertilizers, i. e. ammonium sulphate and ammonium nitrate representing ammonium alone and ammonium plus nitrate sources of nitrogen respectively were applied. The quantity of nitrogen supplied was 350 g per plant. Both the fertilizers were applied in the third week of February.

For leaf analysis, 4-7 months old leaves were sampled on the day of fertilizers application, ten days after and then after every third day until middle of March. Total nitrogen was estimated by Micro-Kjeldhals method.

It was revealed through leaf analysis that the trees supplied with ammonium nitrate showed a significantly higher nitrogen level of leaves ten days after application and maintained higher nitrogen throughout the period of study (bloom duration) than the trees fertilized with ammonium sulphate. There was an immediate decline in the leaf nitrogen concentration afterwards but the satisfactory range was prolonged in trees fertilized with ammonium nitrate while such a range could not be maintained in trees treated with ammonium sulphate (Table 1). The lower leaf N values were responsible for the poor fruit setting and lower yield of citrus. It is, therefore, suggested that ammonium nitrate which supplies both NO_3 and NH_4 sources of nitrogen may be better for citrus orchards as it maintained higher levels of leaf nitrogen for longer periods when applied ten days ahead of flowering instead of one month as recommended.

Table 1. *Nitrogen concentration (percentage in dry weight basis) in Feutrells Early Mandarin leaves as affected by different Sources of nitrogen.*

Date of Sampling	Control	$(NH_4)_2SO_4$	$(NH_4 NO_3)$
*19.2.84	1.5	1.30	0.79NS
28.2.84	0.87c	1.31b	2.01a
02.3.84	0.87c	1.22b	1.61a
05.3.84	0.87b	1.55a	1.66a
08.3.84	0.78b	1.22ab	1.66a
12.3.84	0.78c	1.05b	1.31a
15.3.84	0.78NS	0.96NS	1.12NS

*Before fertilizer application.