EFFECT OF CATTLE MANURE AND INORGANIC NITROGEN FERTILIZER ON THE NUTRIENT UPTAKE, GROWTH AND YIELD OF CHILLIE IN THE LATOSOLS OF NORTHERN REGION

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ABSTRACT

Two experiments were carried out in calcic red latosols (Thirunelvely) and red-yellow latosols (Kilinochchi) with chilli (variety MI - 2) during maha 89/90 and maha 90/91. In the first experiment the response of chilli to different levels of nitrogen (0, 80, 120 and 160 kg N/ha) and cattle manure (0, 12.5 and 25.0 t/ha) was studied while in the second experiment the effect of different methods of split application of nitrogen on chilli yield was evaluated.

Chilli pod yields during both seasons were much higher at Thirunelvely (mean 2.5 t/ha) than at Kilinochchi (mean 1.9 t/ha). At both locations, chilli pod yield showed significant response to addition of nitrogen fertilizer alone, cattle manure alone and their combinations; the combination of nitrogen fertilizer and cattle manure always yielded the highest. In general, at both locations, significant pod yield response occurred up to 160 kg N/ha, the highest N level tested. Except during maha 90/91 at Kilinochchi, best yield was obtained for the combination of 160 kg N/ha and 12.5 t/ha cattle manure. The data also showed that at both locations there were no significant differences in chilli pod yields among the three different methods of N split applications (i.e. 3, 4 or 7 splits).

In these experiments, total chilli pod yields were obtained from five different picks taken at 2 week intervals starting from about 12 WAP.In general, pick yields increased gradually from the first pick up to the third or fourth pick and thereafter declined. Total pod yield was highly influenced by the 3 and 4 pick yields, which amounted to about 60 - 75% of the total yield. The first four picks accounted for about 80 - 90% of the total pod yield.

Even after two seasons, pH, organic matter and exchangeable K did not show any appreciable change; available P values however, were higher at the end of the experimentation compared to the initial values.