A STUDY ON FACTORS INFLUENCING NITRIFICATION IN REGOSOLS

K. Sabesan and S. Sivapragasam
Faculty of Agriculture, Eastern University

The microbial activity involved in nitrification and the rapidity and extent of transformation of ammonia to nitrate nitrogen is greatly influeced by soil environmental conditions. Since the environmental factors favouring the growth of most agricultural plants are those that also favour the activity of the nitrifying bacteria, it was intended to study the effect of soil temperature, soil moisture content and soil reaction on the rate of nitrification in the regosols of the Eastern Province.

Accordingly, and incubation experiment was conducted with 27 treatments combining three levels of temperature (23°C, 30°C and 37°C), three levels of moisture content (3,6 & 9% oven dry basis) & three levels of $CaCO_3$(0,1 & 2g/300g soil).

The main effect of treatments on nitrate production showed that the most favourable conditions for nitrification in regosols were the temperature of 30°C, moisture content of 6% and an addition of 1g/300g of $CaCO_3$. As the process of nitrification proceeded, there was a simultaneous decrease in ammonium nitrogen thus confirming the fact that nitrates were produced at the expense of ammonium ions. There was also a gradual drop in soil pH indicating that nitrification decreased the pH of the soil.