EFFECT OF DIFFERENT LEVELS OF NITROGEN AND POTASSIUM ON GROWTH AND YIELD OF MAIZE IN NON CALCIC BROWN SOILS

W.M.S. Jayasekara[1], L.C. Silva[2] and M.G.T.S. Amarasekara[1]

[1]*Department of Soil and Water Resources Management, Faculty of Agriculture, Rajarata University of Sri Lanka, Puliyankulama, Anuradhapura.*
[2]*Regional Agricultural Research and Development Centre, Aralaganwila.*

Maize (*Zea mays* L.) is the second important cereal crop, which can be grown successfully in many part of Sri Lanka under rainfed and irrigated conditions. Although total annual production of maize has been increased due to increased cultivated lands, yield of maize does not indicate any significant improvement. Results of previous studies revealed that, nutrient deficiencies in maize growing soils affect significantly on yield reduction. Therefore, it is important to increase yield by enhancing soil fertility parameters. This study was aimed to assess the effect of different nitrogen and potassium levels on maize yield in Non Calcic Brown Soils (NCB). A field study was conducted in Regional Agricultural Research Center, Aralaganwila in *Yala* 2012. Three different N levels (*i.e.* 150, 225 and 300 kg ha^{-1}) and four different K levels (*i.e.* 15, 30, 45 and 60 kg ha^{-1}) were tested using variety *Sampath.* All the other nutrients were given according to Department of Agriculture (DOA) recommendation. Experimental design was randomized complete block design with three replicates. Different growth and yield parameters were measured at regular intervals. Results highlighted that two N levels, 225 kg ha^{-1} (*i.e.* 150% of DOA recommendation) and 300 kg ha^{-1} (200% of DOA recommendation) with 30 kg ha^{-1} of K (100% of DOA recommendation) have reported yield improvement compared to the control treatment of DOA recommendation. It is clear that maize crop is still responding to higher levels of N in NCB soils. Therefore, it can be recommended to revise present fertilizer recommendation for maize in NCB soils. However, further studies are needed to confirm findings.

Key words: Maize yield, NCB soil, Plant nutrients