

Evaluation of Potassium Requirement of Banana in the Mid-Country Wet-Zone of Sri Lanka

Abstract

A Preliminary survey conducted to study the farmer practices revealed that the prominent variety cultivated in the area is "Ambul" and fertilizer use on banana is extremely scarce. Two sets of field experiments were carried out subsequent to the survey to evaluate the potassium requirement of banana with the variety "Ambul".

In the first set of experiments, four levels of potassium (120,240,480 and 960 kg K_2O /ha/yr) and four levels of nitrogen (60,120,240 and 480 kg N/ha/yr) in factorial combinations were tested against a control, with no N and K. The results showed that bunch weight and growth measurements increased up to 240 kg K_2O /ha/yr and 120 kg N/ha/yr levels.

The second set of experiments were conducted with five levels of potassium (0,120,240,360 and 480 kg K_2O /ha/yr) and with constant levels of nitrogen and phosphorus viz. 175 kg N/ha /yr and 150kg P_2O_5 /ha/yr. Two additional treatments were included one with straw and the other with cowdung. For these treatments NPK was applied at the rate of 175 kg N, 150 kg P_2O_5 and 360 kg K_2O /ha/yr. Supplementary irrigation was done in drought periods.

Results of the second set of experiments showed there was a response up to 360 kg K_2O /ha/yr. Application of straw and cowdung gave a good response on yield and growth parameters. Application of potassium had no significant effect on fruit quality. A decrease in leaf Mg and Ca contents were observed with high K levels. In both experiments there was a build-up of soil K content with higher levels of added K.