B – 24

Status of selected chemical characteristics of vegetable growing soils in the low country wet zone

In the low country wet zone vegetables are mainly grown in " Deniya" *i.e*. lands stituated in between upland and lowland owing to low intensity of vegetable cultivation. The popular vegetable croups growing in this area represent okra, cucumber, gourds, vegetable cowpea and leaf vegetable. In general, vegetable growers in this area use low quantities of organic and chemical fertilizers when compared to intensive vegetable growing environment in the upcountry. However, there is hardly any reported soil nutrient availability studies in the vegetable growing soils in the low country wet zone.

A total of 70 soils samples (0-15 cm depth) were collected from vegetable fields in the low country wet zone. They were analysed for available P (Olsen,s) and potassium (NH_4 OAc extraction). While organic matter content in the soils was determined by Walkey-Black method. In addition pH (1:2.5 H_2 O) was also measured. The results showed that of the soil samples collected. 2% samples had pH below 4, 38% samples had pH between 4 -5 and 43% samples had pH between 5-6 and 17% samples had pH more than 6.

In addition, results revealed that of the soil samples collected 43% samples had P less than 10% mg/ kg, 30% samples had P between10-20 mg/ kg, 3% samples had P between 20-30 mg/ kg, and 24% samples had P more than 30 mg/ kg. Results further revealed that of the soil samples collected, 52% samples had K below 80 mg/ kg, 31% samples had K between 80-160 mg/ kg 16% samples had K between 160-400mg/ kg and 1% samples had K more than 400 mg/ kg. Results also indicated that organic matter contents of the soil samples collected 24% samples had organic matter content below 2%, 29% samples had organic matter content between 2-3% , 19% samples had organic matter content between 3-4%, 11% samples had organic matter content between 4-5% and 17% samples had organic matter content more than 5%.

These results showed that most of the vegetable cultivated soils in the low country wet zone are acidic. Hence lime application will be an important soil fertility management practice to achieve high yield of vegetables grown in this region. In addition, results showed that a majority of the low country wet zone vegetable growing soils are low in P, K and organic matter content. Hence, application of P and K chemical fertilizers and organic manures would be necessary to improve soil fertility in the wet zone vegetable growing soils to obtain high vegetable yields.