NUTRITIONAL DISORDERS ON RICE ON SOME ACID SOILS OF SRI LANKA

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ABSTRACT

The acid rice soils of Sri Lanka are confined to the Wet Zone which is situated in the south-western quadrant of the island. Rainfall (between 2540 and 5080 mm) annually is derived mostly from the South-West monsoon during the months between May and October.

Most rice growing soils of the Wet-zone are of alluvial origin, although in this part of the country rice is grown on all soils if water is available.

Alluvial soils occupy lowlying areas in the flood plains of rivers, streams and their tributaries. Their parent material is highly weathered and generally poor in available plant nutrients. Most soils, therefore are deficient in nitrogen and available phosphorus and some sandy soils are deficient in exchangeable potassium too. The nutritional requirements of rice on these soils have therefore to be supplemented seasonally in order to obtain economic yields. This is particularly so with the new High Yielding Varieties of rice. Further, nitrogen and phosphorus deficiencies are often seen in fields. Occasionally, even potassium deficiency has been observed in the new improved rice varieties.

Low soil-pH and its associated problems like Bronzing are also common in some areas of the wet zone. Liming has been found to be helpful in these soils. With the older rice varieties, nitrogen and phosphorus fertilizers have been found to be superfluous in the first season of lime application. In other areas with sandy soils, hydrogen sulphide, which can destroy the crop in the early stages of growth, has been reported.

In the greater part of the wet zone of Sri Lanka rainfall exceeds evaporation. The rice soils of this region are strongly acid and contain an abundance of organic matter and have therefore be classified as Histosols. In certain areas associated with the marine environment soils tending towards acid sulphate soils have been reported. In other areas coastal salinity which occurs in localized patches, tends to stifle plant growth.