SECTION B

B - 11

UREA REACTION IN HIGH POLYPHENOLIC TEA SOILS

K. N. Wickramasinghe
(Tea Research Institute, Talawakelle)

The continuous use of high rates of ammonium sulphate (200–300 Kg N ha^{-1} $annum^{-1}$) has resulted in tea soils becoming very acidic (pH 3.5–4.5). Urea is now being increasingly used as an alternative source of nitrogen because of its high nitrogen content coupled with the low cost per unit of N and less soil acidifying properties when compared with sulphate of ammonia.

It has been established that conversion of urea to ammonium in soil is brought about by the enzyme urease. We have found that levels of urease present in high polyphenolic tea soils are adequate to hydrolyse the applied urea. There was rapid and almost complete conversion of urea of ammonium and the rate of hydrolysis was independent of soil moisture at 25% and above. The rate of conversion of urea to ammonium depended on the soil polyphenol concentration and had no relationship with either the organic carbon content or the texture. Data presented in this paper proves that the urea added to high polyphenolic tea soils is effectively converted to ammonium ions in the soil, which is readily available to the plants.