

STUDIES OF SALINITY AND ALKALINITY ON THE GRUMUSOLS  
OF THE MURUNKAN RICE GROWING AREA

By

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## ABSTRACT

This study was carried out on the Grumusols of the Murunkan rice growing area, and was concerned with investigating the nature and degree of salinity and alkalinity. Although the tubewell water quality at many sites is poor soil analyses before and after the maha rains do not indicate any major problems of salinity or alkalinity.

Three experiments were conducted to investigate the various management practices that might be used by farmers to contain or avoid a salinity or alkalinity threat. The first experiment evaluated the response of four different rice varieties to three different heads of standing water and was carried out at four different sites, each of which had a different quality of tubewell water. The results showed that one variety in particular, BG 276-5 showed marked tolerance to salinity.

The second experiment evaluated the use of gypsum as a soil amendment to counteract the deleterious physical and chemical effects of saline water on the grumusols. Combinations of four levels of gypsum with three levels of nitrogen did not show any significant effects on yield due to gypsum although there was a yield response to nitrogen. However on this evidence it would be premature to assume that gypsum would have no effect until long term research trials with the same treatments have been carried out on a variety of sites.

In agreement with the published literature, no effect of salinity on seed germination could be detected with water of less than 4.5 mmhos/cm electrical conductivity. Seedling growth of varieties IR 46, IR 9884-543 and BG 34-8

was affected although seedlings of BG 276-5, BG 94-2, IR-42 and IR-50 were not affected by water upto 2.6 mmhos/cm