EVALUATION OF ASSOCIATIVE NITROGEN FIXATION IN LOCAL RICE FIELDS AND EFFECTS OF INOCULATION ON RICE SEEDLINGS

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The effect of a diazotroph, isolated from local rice fields, on the growth of rice seedlings was investigated. Root surface area, fresh weights of roots and shoots and dry weights of roots and shoots were determined. They showed an increase with increase in inoculum density.

Associative nitrogen fixation of several new improved rice varieties, growing under smilar climatic and edaphic conditions was tested, using cut plant-soil acetylene reduction assay (Barraquio et al., 1986). No significant differences were seen among the different rice varieties.

It has been observed that some traditional rice varieties grown in Kalutara district give consistent, satisfactory yields of rice without any fertilizer application. Associative nitrogen fixation of two traditional rice varieties were tested and attempts were made to isolate diazotrophs from their root systems. Root associated ARA was higher than that of a new improved rice variety.

Eventual aim of this research is to introduce selected diazotrophs to the field. A pot experiment was designed with four treatments to examine the effect of inoculation of rice plants with and without fertilizer application. Results so far obtained from this experiment will be discussed.