STUDIES WITH SESBANIA ROSTRATA
A STEM NODULATED FLOOD TOLERANT LEGUMINOUS PLANT

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The flood tolerant leguminous species Sesbania rostrata, exhibits high nitrogen fixation due to profuse stem nodulation. It has been reported in Senegal that this could be used as a green manure for wetland rice cultivation. An ideal green manure should exhibit the following characteristic: high rates of biological nitrogen fixation with minimal extraction of available soil nitrogen with considerable rates of biomass production.

It has been shown that under laboratory conditions injecting a suitable rhizobial culture to vascular system of Sesbania rostrata resulted in profuse stem nodulation (1988). Apical dormancy prevents the growth of auxillary buds, resulting in the production of less vegetative plant material. This could be overcome by pruning the plants which would stimulate branching that could result in higher biomass production.

A field experiment was conducted to examine, whether vegetative growth and stem nodulation in Sesbania rostrata could be improved by pruning and stem inoculation. Surface sterilized, seeds were planted in $3m^2$ plots in 3 rows, each having 20 seeds, 10 cm apart. Plots were flooded when the plants were about 30cm in height. Pruning and stem inoculation was done when the plants were 50cm in height. The plants were harvested at 55 days, fresh and dry weights of plants, nodule number, nodule biomass per plant were recorded. Nitrogenase activity of the plants were measured by

Acetylene reduction activity.

Results indicate the percentage increase in plant biomass and nodule biomass was highest in plots where the plants were pruned and inoculated showed increase in plant and nodule biomass which was less than the above mentioned treatment. Lowest percentage increase was observed in plots treated with inoculation without pruning.