Agri. Res. J. Kerala, 1978, 17 (1)

POTENTIALITY OF AZOLLA ON THE ENHANCEMENT OF RICE YIELD IN SANDY TRACT

Azolla a genus of water fern fixes atmospheric nitrogen in association with the blue green algae *Anabaena azollae* It is abundantly found in the paddy fields of Onattukara which is a representative sandy rice beit comprising an area of 28.340 hact, from the months of June to December, The atmospheric nitrogen fixed by the algae which lives in the cavities of the upper leaf lobes of azolla is available to the fern plant and thereby multiplies rapidly. Azolla appears in the paddy fields of Onattukara from the middle of first crop season when there is standing water in the field and begin to disintegrate towards the end of second crop season.

In the present investigation an attempt is made to find out the effect of azolla in the enhancement of rice yield in sandy soils of Onattukara at the Rice Research station, Kayamkulam during the year 1977-78 second crop season (August-December). Azolla, for the above studies were collected from the paddy fields and cultured in cement pots

A randomised block design with three treatements replicated seven times was taken up to study the effect of addition of azolla as a substitute to organic nitrogen fertilizers. The treatments were (1) 1 g. nitrogen per pot as azolla incorporated with soil (2) 1 g. nitrogen per pot as azolla allowed to float (3) 1 g. nitrogen per pot as fertilizers (Urea). All the treatments were given P and K at the recommended dose. Rice seedlings of medium duration (130 days) Jaya is used for planting. Four hills each of 2 seedlings were planted in the pots.

The mean grain yields obtained from pots with 1 g. azolla incorporated, 1 g. N as azolla allowed to float and 1 g. N applied as fertilizer were 62.39, 26.45 and 97.10 g. respectively. The treatments gave significant effect (C. D. 12.04). T1 (1 g. Nitrogen per pot as incorporated azolla) followed by T3 (1 g. Nitrogen per pot as inorganic fertilizer) gave maximum yield. It is seen that 32% increase in yield was noted in treatments where azolla was incorporated over the treatment having nitrogen applied as inorganic fertilizers. But in pots where azolla was allowed to float there was a reduction of 136% yield over the pots where Azolla was incorporated. Hence it is evident that incorporation of azolla as a source of nitrogen has increased significantly the yield of rice in sandy tracts by enriching the organic content of the soil.

The result of this investigation is in confirmation with the work conducted at CRRI, Cuttack. The finding reveals the potentiality of azolla as a self supplying

nitrogen source, especially in sandy tracts where the organic matter is deficient Azolla also offers a source of organic nitrogen fertilizer for rice farmers who cannot afford chemical nitrogen fertilizer.

സംഗ്രഹം

അനബീന അസോളേ എന്ന ഹരിത നീലപ്പായലിന്റെ സഹായത്തോടെ അന്തരീക്ഷ നൈട്രജൻ യൗഗകീകരിക്കുന്ന 'അസോള' എന്നയിനം പായൽ ഓണാട്ടുകര പോലെയുള്ള മണൽ മണ്ണിലെ നെൽവിളവു് വർദ്ധിപ്പിക്കുവാൻ ഉപയുക്തമാക്കാമെന്നു് കായംകുളം നെല്ലുഗവേഷണ കേന്ദ്രത്തിൽ നടത്തിയ ഒരു പഠനം തെളിയിച്ചു.

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