

Reducing cultivation price, with a fern that's nice to rice



BASAL APPLICATION: Paddy farmer Mr. S. Ramuvel in Mayiladuthurai taluka in Tamil Nadu is growing azolla in his field.

Modern Agriculture has become more dependent on chemical fertilizers for increasing yield of crops. Constant use of chemicals has spoilt the land, soil and water. Depletion of soil fertility and high prices of chemical fertilizers have forced many paddy farmers, especially in the delta region, to turn towards azolla as an effective bio fertilizer for their paddy crops.

Nitrogenous fertilizer

Basal application on green azolla manure at the rate of 10-20 tonnes per hectare increases soil nitrogen by 45-60 kg and reduces 20-30 kg of nitrogenous fertilizer requirement of rice crop, according to researchers from Tamil Nadu Agricultural University (TNAU), Coimbatore, Tamil Nadu.

Farmers should be made aware of the harmful effects of these chemicals in agriculture and switch over to non chemical methods of growing crops, according to Mr. S. Ramuvel, an organic paddy farmer in Mayiladuthurai taluka, Nagapattinam District of Tamil Nadu. Azolla can be used as a good substitute for urea for paddy crops and can also be used as a feed for cattle, ducks, pigs and fish because of its high protein content. It can also be converted to compost by drying under shade and then used like farmyard manure. Also called mosquito fern and water velvet, azolla is a naturally available free-floating aquatic fern mostly found in moist soil, ditches, and pools. Though the fern is widely cultivated in some Asian countries such as Japan, China, Vietnam, and the Philippines, in India it is yet to gain more prominence except in some states such as Kerala and Orissa.

It is eco friendly, non expensive and helps in safeguarding the soil health and also the quality of crop products.

The fern fixes atmospheric nitrogen into the soil to be made available to crops especially wetland rice crops in the form of soluble nitrogen. A thick green mat of azolla in the paddy field prevents weed growth and helps paddy growth. It also prevents water evaporation and increases water use efficiency in the crops.

Lower cost

"When I was cultivating paddy with chemical fertilizers I had to spend about Rs.1,500 per acre. At present, with azolla, the cost of cultivation has come down by 25 per cent. Azolla has increased my paddy yield by 30-40 per cent," said Mr. Ramuvel.

Farmers can also create their own nursery for growing this fern, according to Mr. Ramuvel. The field should be ploughed, levelled, irrigated, and made to stand in the form of small ponds. Only 15-20 cm of standing water is allowed in the fields. Green azolla at the rate of 20 kg per hectare, mixed with fresh cow dung should be released into the pond.

Dense green mat

The fern multiplies rapidly in about 10-15 days and forms a dense growth on the surface of the water. It is then harvested using bamboo baskets and released into the main field among the transplanted paddy crops for further multiplication. Mr. Ramuvel is also selling the green azolla at the rate of Rs. 5 per kg to other farmers who do not have a nursery. During summer azolla is harvested at an interval of 15-20 days and during monsoon, once a month.

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