Journal of Tropical Agriculture 33 (1995) : 82-83

INFLUENCE OF A PLANT GROWTH PROMOTER IN TRANSPLANTED LOWLAND RICE

The productivity improvement in rice through genotypic and nutrient management seems to have reached a plateau. Manipulation of physiological efficiency of the crop plants is reported to be a new area for achieving a quantum jump in the productivity upgradation. External application of various chemicals, which are either promotory or inhibitory, might stimulate the metabolic processes of the plants. Role of growth regulators in the transport of metabolites from source to sink in rice has been well documented (Biswas and Choudhuri, 1981). This communication reports the effect of a new plant growth promoter, biozyme, in transplanted lowland rice.

Biozyme, a granulated product promoted by M/s Wockhardt Limited, Bombay, is reported to contain special seaweed extract and other biologically derived hydrolysed proteins. The seaweed is said to contain naturally occurring cytokinins, auxin precursors, enzymes and trace elements.

The study was conducted at the Regional Agricultural Research Station, Pattambi during the first crop season of 1991-92. The soil was Fluentic Dystropepts and belongs to sandy loam textural class. It was medium in available N and P_2O_5 and low in available K_2O. The soil pH was 5.5. The experiment consisted of 10 treatments replicated thrice. The treatments were:

T1 Biozyme 15 kg ha^{-1} at 25 days after transplanting (DAT)
T2 Biozyme 15 kg ha^{-1} at 45 DAT
T3 Biozyme 15 kg ha^{-1} in equal splits at 25 and 45 DAT
T4 Biozyme 20 kg ha^{-1} at 25 DAT
T5 Biozyme 20 kg ha ' at 45 DAT
T6 Biozyme 20 kg ha^{-1} in equal splits at 25 and 45 DAT
T7 Biozyme 25 kg ha^{-1} at 25 DAT
T8 Biozyme 25 kg ha^{-1} at 45 DAT
T9 Biozyme 25 kg ha^{-1} in equal splits at 25 and 45 DAT
T10 Control (untreated)

The required quantities of biozyme granules were applied in a thin film of water after mixing them with dry sand @ 25 kg/ha to facilitate uniform distribution. The water was not allowed to flow out for a few days afterwards. All the treatments received a fertilizer schedule of 70:35:35 kg NPK ha^{-1}. The cultural and plant protection measures were adopted uniformly according to the recommended package. Important biometric and yield observations were recorded at the time of harvest, in addition to the data on grain and straw yield.

Application of different quantities of biozyme as well as their timings did not appreciably influence the grain and straw yield of rice. Similar trend was also observed in respect of the various biometric and yield components. However, the treatment receiving biozyme granules at the rate of 25 kg ha^{-1} at 25 DAT recorded the maximum improvement (3.8%) in grain yield. With regard to straw production, the maximum benefit (0.8%) was obtained with the application of 25 kg ha^{-1} of biozyme granules in two equal splits at 25 and 45 DAT. Marginal yield increment with the application of growth regulators was also reported by Venkataraman *et al.* (1987).

Whereever significant responses to bioregulators in rice were reported (Thangaraj and Sivasubramanian, 1992; Prasad *et al.*, 1991), the soils of the study site were alkaline in reaction and the products were applied as foliar spray. Prasad *et al* (1991) obtained superior results with foliar application of growth chemicals as compared to the application of the same chemical in the granular form. The acidic reaction of the test site and the application of the evaluated product as granular form are the suspected reasons for the failure of the test material in making appreciable impact on the growth and yield of transplanted lowland rice in the present study.

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