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INFLUENCE OF BIOSTIMULANTS ON RICE PRODUCTIVITY

Many approaches are being attempted to stimulate rice production, especially in areas where it has stagnated. Biostimulants, which are chemical substances, known to influence the physiological processes of plants and improve growth and yield, are reported to be very effective on various crops.

Thangaraj and Sivasubramanian (1992) reported that foliar spray of kinetin 2 ppm at heading or tender coconut water 2% (v/v) at panicle initiation and heading significantly increased the grain yield of rice by delaying the leaf senescence, improving the panicle exertion and reducing the sterility. Recently, very encouraging results have been reported by Nonomura and Bensun (1992) on the effect of methanol with urea on C, plants like cotton, wheat and melons under arid conditions. The effect of other chemicals on rice or other crops has been reported by various workers. The favourable effects of cow's urine on rice (Joseph and Nair, 1989), salicylic acid on rice (Huang *et al.*, 1993) and ascorbic acid on other crops (Wolfgang *et al.*, 1989) have been reported. The present investigation was undertaken to study the effect of some easily and readily available chemicals and some farm available materials on rice productivity.

Table 1. Effect of bioregulators/chemicals on rice yield and yield attributes

Treatment	Height (cm)	Total tillers per hill	Productive tillers per hill	Panicle length, cm	Grain yield, kg ha^{1}	Straw yield, kg ha^{1}
1 Control	71.6	9.86	9.23	20.37	5890	4520
2 Water @ 500 l ha^{1}	71.0	8.87	8.27	21.07	571 l	4495
3 Methanol @ 5%	72.9	8.67	8.33	20.83	5765	4535
4 Methanol @ 5% + urea 2%	71.6	9.00	8.23	20.87	5711	4475
5 Coconut water @ 4% (v/v)	72.6	9.80	9.20	20.00	5803	4495
6 Cow's urine @ 10% (v/v)	73.2	8.40	8.13	20.70	5841	4565
7 KNO_3 @ 300 ppm	69.5	9.27	8.47	20.67	5966	4495
8 Ascorbic acid & 300 ppm	70.9	10.10	9.53	20.57	5901	4600
9 Salicylic acid @ 300 ppm	71.4	9.53	8.67	20.27	5879	4550
10 Mepiquatchloride © 500 ml ha^{1}	73.7	8.73	8.10	20.30	5863	4485
CD (0.05)	NS	NS	NS	NS	NS	NS
CV %	4	63	63	3	5	7.5

The experiment was laid out in the research farm of the Tamil Nadu Agricultural University, Coimbatore, during the kharif season of 1994 in randomised block design with three replications using ADT 36 as the test variety. *The soil was clay loam in texture with pH 7.6.* The available nutrient status of N, P and K in the soil was 268, 12.1 and 350 kg ha^{-1} respectively. Twenty five day old seedlings were transplanted on June 11, 1994 at 15 cm x 10 cm spacing and was harvested on September 10, 1994. Recommended level of fertilizers (N, P_2O_5 and K_2O at 120, 50 and 50 kg ha^{-1}) were applied, full dose of P at transplanting; N and K in three equal splits at transplanting, panicle initiation and 10 days before heading. The treatments and observations are given in Table 1. Aqueous solution of substances at a spray fluid volume of 500 1 ha^{-1} was applied at heading stage using a hand sprayer as per the treatment.

Spraying the chemicals or other substances did not have any significant influence on yield or yield parameters.

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