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RELATIVE SUSCEPTIBILITY OF THE RICE VARIETY 'ROHINI' GROWN UNDER DIFFERENT LEVELS OF NITROGEN, TO THE STORAGE PESTS

High yielding varieties of wheat grains under different nutritional levels are reported to have varying susceptibility to storage pests. Chakraborty and George Mathew, 1972). No information is available on this aspect with reference to paddy. In the present investigations the effect of different doses of nitrogen applied in the field on the protein content of grains and its effect on the relative susceptibility to various storage pests have been studied.

A randomized block design was adopted for the experiment. Nitrogen was supplied at four levels 30, 60, 90 and 120 Kg/ha, each treatment being replicated five times. Standard methods of planting and cultural practices were adopted. The percentage of infestation at the time of harvest was assessed by counting damaged grains in random samples collected from each plot. Good grains were separated by immersing in saturated sodium chloride solution and they were washed in water and dried in sunlight. Samples at the rate of 200 gm of grain from each plot were put in gunny bags (20 cm X 15 cm) and exposed to natural infestation in godowns. At the end of three months 1000 grains were collected from each bag, put in supersaturated sodium chloride solution, the floated grains collected and examined individually for insect infestation.

The development of *Sitotroga cerealella* in grains from various treatments was studied in the laboratory. One hundred gramme samples of seeds was taken from each lot in a wide mouthed bottle. Forty first instar larvae were introduced in each bottle and the number of moths emerging from each lot and the duration of larval plus pupal development were recorded. The protein content of the grain was also assessed by estimating the total nitrogen.

The data are presented in Tables 1 and 2. It is seen that the protein content of the grain shows an increase with the increase in the rate of nitrogen applied to the crop. The incidence of damaged grains at the time of harvest also showed a similar trend. The extent of infestation of grains stored in godowns, revealed that the susceptibility is not related to the quantity of nitrogenous fertilizers applied to the crop when in field. The percentage survival of the insect during larval and pupal period and the duration of development also did not vary significantly in grains obtained from various treatments. The protein content of the grains did not influence the development and multiplication of the insect in store. In the case of wheat, Chakraborty

Table 1

The extent of damage noted in the grains in field and in godown and the percentage of protein content of the grains in different treatments

Levels of Nitrogen Kg/ha.	Mean number of grains damaged (in 1000 grains counted)		Percentage of Protein
	at the time of harvest *	after storage for three months	
30	11.00	9.20	11.99
60	21.20	28.80	12.71
90	25.80	29.60	13.37
120	26.00	26.40	14.05

*Significant at 5% level

C. D at 5% level = 2.123

Table 2

Mean values of the number of moths emerged and the developmental period of *S. cerealella*

Levels of Nitrogen Kg/ha.	Number of moths emerged out of 40 larvae	Developmental period
30	15.20	31.57
60	18.80	32.06
90	19.60	29.96
120	14.00	31.01

and George Mathew (1972) observed maximum susceptibility to storage pests for grains collected from plots supplied with no nitrogen except in the case of the variety S. 307 in which the reverse trend was seen.

REFERENCES

Chakrabarthy, D. D. and George Mathew 1972. Effect of host plant nutrition on the susceptibility of the seeds of several exotic wheat varieties to *Sitophilus oryzae*. Bull. Grain. Technology 10 (2) 116-119.

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