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Central Rice Research Institute, Cuttack - 753006, Orissa, India

PATHOGENICITY OF *PRATYLENCHUS ZEAE* ON RICE

by
C. R. SAHOO and S. C. SAHU

Summary. It is shown that an inoculum level of 1000 *Pratylenchus zeae* per seedling or per 2 kg of soil can start to damage rice seedlings in pots.

The lesion nematode *Pratylenchus zeae* Graham, 1951 is often found infesting upland rice in Orissa (Ray *et al.*, 1987). Studies on the pathogenicity of *P. zeae* on rice were carried out in pots.

Three day old rice plants (*Oryza sativa* L. cv. Arnapurna were grown in 15 cm clay pots filled with 2 kg sterilized sandy loam soil. Nematodes were surface sterilized for 24 hours in 0.03% mercurochrome and suspensions of 0, 10, 100, 1000 or 10,000 juveniles and adults were inoculated per pot. Each treatment was replicated three times. Plants were harvested 60 days after inoculation and root weight and length and plant weight and height were recorded. Roots were stained in 0.1% acid fuchsin lactophenol to enable the counting of nematodes within the roots.

Adults, juveniles and eggs of *P. zeae* were detected in the cortical region of the stained roots. Root weight and length and plant weight and height were inversely proportional to the inoculum density (Table I). Significant growth reduction started from 1000 nematodes per seedling as already indicated for sugarcane (Nath *et al.*, 1978) and other plants (Azmi, 1988, 1989). The rate of multiplication of nematodes was usually greater at lower inoculum levels and least at the highest inoculum level (Table I).

TABLE I - *Effect of* Pratylenchus zeae *on growth of rice.*

Inoculum level	Shoot height (cm)	Shoot weight (g)	Root length (cm)	Root weight (g)	Final population of *P. zeae* in roots/ seedling	$\frac{P_f}{P_i}$
0	24.7	1.5	12.0	1.7	0 (-0.3)	0
10	23.2	1.5	11.3	1.6	104.6(2.02)	10.4
100	20.7	1.4	10.2	1.6	611.0(2.75)	6.1
1000	16.0	1.3	7.5	1.2	3515.6(3.54)	3.5
10000	11.0	0.8	5.2	0.7	4240.0(3.63)	0.4
C.D. 5%	2.16	0.07	1.26	0.07	0.03	
1%	3.14	0.10	1.83	0.10	0.05	

(Figure in parenthesis are transformed log value).

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