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Central Research Institute for Jute and Allied Fibres, Barrackpore - 743101, West Bengal, India

SCREENING OF WHITE JUTE, *CORCHORUS CAPSULARIS*, GERMPLASMS AGAINST *MELOIDOGYNE INCOGNITA*

by

S. K. LAHA, R. K. MANDAL and M. K. DASGUPTA [1]

Summary. Two hundred white jute (*Corchorus capsularis* L.) germplasm lines including a standard cultivar JRC-212 were screened against the root-knot nematode *Meloidogyne incognita* in an infested plot at Ramie Research Station, Sorbhog, Assam, India. Amongst the types tested 14 lines viz. CIN (Capsularis indigenous) 331, 342, 344, 351, 364, 394, 395, 398, 401, 405, 411, 429, 433 and 448 were resistant, 115 types were moderately susceptible and 69 types were susceptible to the root knot nematode. The standard *C. capsularis* cultivar included in the test showed moderately susceptible reaction.

Jute, *Corchorus capsularis* L. is often attacked by root-knot nematode causing considerable damage to the plants and thereby loss of yield. Chemical control does not always give desired result due to very frequent rainfal in the growing season of jute, therefore the use of resistant cultivars is the most important weapon in combating the problem. Earlier attempts to introduce nematode resistance into jute had limited success (Mandal *et al.*, 1982; Mishra and Chakravorty, 1987). In the present study an attempt has been made to screen 200 *C. capsularis* germplasms lines including cv. JRC 212 as standard against root-knot nematode, *Meloidogyne incognita* (Kofoid et White) Chitw., in an infested field.

Material and methods

The experiment was undertaken at Ramie Research Station, Sorbhog, Assam, India, in a plot of sandy loam soil, pH 5.6. The experiment was a randomized block design with three replications. The plot size was 1.5 x 1 m each having 5 rows of plants with a spacing of 30 cm in between two rows. Space between the plots were 0.75 m and between replications 1.5 m. Number of replicates of each line was three, with about 100 plants in each replicate. As some of the types had a very hard seed coat, seeds were sown after rubbing with sandpaper to facilitate germination. Recommended agronomic practices were followed except that no plant protection chemicals were used. Observations were recorded after 120 days i.e. at harvest stage.

Ten plants selected at random from each plot were pulled out. After washing the roots throughly, the extent of nematode induced galling was visually assessed on a 1-10 scale (Bridge, 1979). Plants were considered resistant when 1-2 gall index occurred on the root system, moderately susceptible with 3-4 gall in-

[1] Reader in Plant Pathology, Palli Siksha Sadana (College of Agriculture), Visva Bharati, Sriniketan 731236, Birbhum, West Bengal, India.

dex per root system, susceptible with 5-6 and highly susceptible with 7-10 gall index per root system.

Results and discussion

Using a Binary Sorting and Search Programme the mean gall index for each germplasm line was listed in ascending order. The gall index ranged between 1.6 and 6.3 indicating that only 14 lines could be considered as resistant. These were CIN (*Capsularis indigenus*): 351, 364, 401, 395, 411, 331, 344, 433, 342, 405, 394, 448, 429 and 394. 115 types, including JRC - 212 were moderately susceptible and the rest 69 types were susceptible. None of the types were highly susceptible to the nematode.

Literature cited

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