

189B

Levels of resistance and susceptibility of some rice varieties to root-knot nematode *Meloidogyne graminicola* (Golden & Birchfield)

H N I Pathirana¹, L D Amarasinghe^{1*} and C M D Dharmasena²

¹ Department of Zoology, University of Kelaniya

² Rice Research and Development Institute, Bathalegoda

Present study was conducted in pots to find the levels of resistance and susceptibility of some rice varieties to *Meloidogyne graminicola* (Nematoda: Meloidogynidae) at the University of Kelaniya during the period from March 2003 to December 2003.

Two weeks old plants of the rice varieties namely Bg 300, Bg 350, Bg 351, Bg 352, Bg 356, Bg 357, Bg 358, Bg 360 and Bg 11 were tested against the second stage juveniles of *M. graminicola*, at the rate of 3 and 15 nematodes per plant using a Complete Randomized Design with 3 replicates. Above and below ground plant measurements such as height of shoots, diameter of the stem, total leaves, dry leaves, seeds, length and weight of the root system were taken as post treatment assessments at harvest. The gall formation and the development of nematode population within root galls of test plants were counted.

It was found that the varieties Bg 300 and Bg 352 did not allow the nematodes to penetrate the roots hence these varieties could be categorized as immune for *Meloidogyne graminicola*. The varieties Bg 350, Bg 356, Bg 357 and Bg 360 allowed the nematodes to penetrate the roots, but the reproduction and the development of the nematodes were not permitted. Hence they could be considered as resistant varieties. The varieties Bg 351, Bg 358 and Bg 11 were found to be susceptible for the nematode *M. graminicola* allowing both root penetration and reproduction. Of these the variety Bg 351 was found to be most susceptible.

Three days old seedlings of the resistant varieties (*ie.* Bg 352 and Bg 356) and those of susceptible varieties (*ie.* Bg 11 and Bg 351) were tested against two second stage juveniles at unfertilized conditions in a paired plot design. It was found that the test plants of Bg 11 and Bg 351 were directly affected by the nematodes showing chlorotic and wilted leaves. But the test plants of resistant varieties were not shown chlorotic and wilted leaves at unfertilized conditions. This concludes that the seedlings of the susceptible plant varieties cannot compensate the unfertilized condition in the presence of nematodes.

* chamodya@hotmail.com