

## **Biology of different geographic isolates of *Meloidogyne graminicola* Golden and Birchfield in rice (*Oryza sativa* L.) cultivar IET-4786**

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**ABSTRACT** : A pot experiment was conducted to inspect the variations in the duration of life stages and biological activities of different geographic isolates of *Meloidogyne graminicola* in susceptible rice cultivar IET-4786. Four isolates of *M. graminicola* were collected and used for the purpose. *Ex situ* incubation period of *M. graminicola* varied from 1-3 days among four isolates. *In situ* incubation period was found minimum 2-5 days in Ashui isolate and minimum 2-5 days in Shyamsundarpur isolate. Penetration of rice root by J2 of *M. graminicola* was started at 6 hrs after inoculation in Shyamsundarpur isolate. J2 took at least 18 hrs to penetrate the root. Maximum duration of J2, egg to young female and egg to adult female stages was recorded with Gayeshpur isolate being, 7-8 days, 12-13 days and 14-16 days, respectively. Time lag between commencement of oviposition and formation of adult female was more with Ashui isolate i.e. 3-5 days. Minimum time required completing egg to second generation egg stage and J2 to second generation J2 stage was observed with Shyamsundarpur isolate being, 13.8 days and 14.7 days, respectively at 11.9°C to 39.4°C temperature and 46.6% to 92.8% RH. Maximum fecundity (100-1200 eggs/female) was encountered with Shyamsundarpur isolate. Shyamsundarpur isolate produced multiple elongated and button shaped root galls despite terminal 'fish hook' galls. The study revealed existence of three types of *M. graminicola* isolate in the West Bengal state. Shyamsundarpur and Gayeshpur isolates were noticeably different from Sumitrapur and Ashui isolates, which were more or less similar in their biological activities.

**Key Words** : Rice (*Oryza sativa* L.) *Meloidogyne graminicola*, cultivar IET-4786, biological activity, fecundity, isolate, life stage, oviposition, penetration.