Life Cycle of *Meloidogyne arenaria* on Groundnut

H. R. Patel, M. U. Vaishnav

Department of Plant Pathology,
College of Agriculture,
Gujarat Agricultural University,
Junagadh - 362 001

Root knot disease of groundnut caused by *Meloidogyne arenaria*, was observed in many fields of Sanala village of Rajkot district, Gujarat by Vaishnav and Dhruj (1981). Occurence of *M. arenaria* on groundnut has been earlier reported from Punjab, India by Sharma *et al.* (1978) and Mahajan and Chhabra (1979). The disease is considered economically very important in Gujarat, therefore, investigations on the life cycle of the namatode were initiated.

Ninty glass tubes of 40 ml. size were filled in with sterilized washed sand and one seed of groundnut (GAUG 10) was sown in each of the tubes. Five days after germination, 2 ml of nematode suspension containing approximately 100 freshly hatched second stage larvae were introduced near the roots in all the tubes.

Seedling from three tubes were removed (first after 12 hours) after every 24 hours and washed roots of the seedlings were stained in boiling 0.05 per cent acid fuchsin in lactophenol (Franklin, 1949). The stained roots were examined under steroscopic binocular microscope for larval penetration and developmental stages of the nematode. Hogland nutrient solution was added in the tubes, twice a week, for proper plant growth.

Penetration of second stage larvae in root started within 24 hours of inoculation and about 2 per cent of the larvae penetrated in 24 hours Majority of the larvae entered through root tips an meristematic regions of the root. The larva oriented themselves parallel to the longitudinal axi of the roots near the stele region. These larva enlarged in size and majority of them were swolle after six days. Third and fourth stages and youn females were observed 9, 14 and 16 days afte inoculation respectively. Mature females wit gelationous matrix were observed after 20 days an first egg was observed on 24th day. The nex generation of second stage larvae emerging from th eggs were observed on 28th day after inoculations Males were observed after 18 days. The life cycle o *M. arenaria* on groundnut was completed in 28 day at a temperature ranging between 27° and 33°C.

(Received on 10th Sept. 1987

REFERENCES

Franklin, M. T. (1949). A quick method of demonstrating nematode of the genus *Aphelenchoides* in leaves. *J. Helminth.*, **23** : 91-93.

Mahajan, R. and H. K. Chhabra, (1979). Occurance of plant parasitic nematodes in Punjab, India. *Pans.* **25** : 46-49.

Sharma, N. K., S. K. Sharma and S. K. Midha, (1978). Root-knot disease of groundnut in Punjab, *Indian Farming*, **28** : 19-21.

Vaishnav, M. U., and I. U. Dhruj, (1981). Occurance of root-knot nematode in groundnut in Gujarat. Paper presented at the Nematology Symposium, 13-15 Feb. 1981, Tamil Nadu Agriculture University, Coimbatore, India.