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RESEARCH NEWS

ROOT KNOT NEMATODE (*Meloidogyne* spp) DAMAGE ON GUAVA (*Psidium guajava*) IN SRI LANKA

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Guava (*Psidium guajava*), an indigenous fruit crop of tropical America, is now a commercial crop in many tropical and subtropical countries. For example, in Southeast Asia Thailand and Indonesia have now become the largest producers of guava. Sri Lanka, too, has initiated commercial scale cultivations of introduced guava cultivars during the last two decades in several districts, including Kalutara, Ratnapura, Puttlam, Polonnaruwa, Gampaha, Kurunagala, Ampara and Anuradhapura, aiming at both local and export markets. However, these improved cultivars of guava have never been evaluated locally for their level of tolerance to local pest and disease complex before introducing for large scale cultivation. A recent survey carried out in Ratnapura and Anuradapura districts revealed that most of the commercial cultivations were severely infested with root-knot nematodes and have become the major threat to guava cultivation in the country. It was recorded in most of the orchards that the production had gone down much below economic levels due to root knot nematodes. Shesteperov (1979) also reported that newly established plantations become unproductive within 5 years after establishment due to root knot nematodes in Cuba.

Propagation of guava even through layering using infested rooting media spread the nematode in orchards and in home gardens. The common species of root-knot nematodes, *Meloidogyne. incognita, M. javanica, M. hapla* and *M. arenaria,* have been recorded as the main causes of severe crop losses in guava in Central American countries (Casassa *et al.*, 1998; Cuadra and Quincosa, 1982; Fernandez and Ortega, 1998; Moura *et al.*, 1989; Rodriguez *et al.*, 1985). Furthermore, a virulent race of *M. arenaria*, now identified as *M. mayaguensis*, has been identified as the major problem in guava cultivation in South Africa and Brazil (Fargette *et al.*, 1996; Block *et al.*, 1997; Carneiro *et al.*, 2001). Varietal evaluations conducted using locally improved and introduced cultivars have proved the existence of different levels of tolerance to *Meloidogyne* spp among these cultivars. Management methods adopted in many countries include the use of nematicides in older-plantations, establishment of new orchards in virgin areas, establishment of

nurseries in clean soils in containers to avoid contaminations, grafting of commercial cultivars on root-stocks of root-knot-nematode resistant *P. friedrichstalianum* (Berg) (Fernandez,1975). One of the orchards in Ratnapura district manages the root knot problem successfully using nematicides and adopting appropriate irrigation intervals.

Present situation in Sri Lanka demands the development of improved resistant cultivars and grafting or budding methods using resistant root stock., production of nematode-free planting material and investigations on other nematode management practices on priority basis to sustain the guava cultivation in the country is a current need.

REFERENCES

Block, V.C., M.S. Philps, J.W. McNicol, and M. Fargette, 1997. Genetic variation in tropical *Meloidogyne spp.* As shown by RAPDs. Fundamental and Applied Nematology. 20:127-133

Carneiro, R.M.D.G,A.M, Wellington, R.A.A Maria and M.M.G Ana Christian. 2001. First record of *Meloidogyne mayaguensis* on guava in Brazil. Nematologia Brasileria. 25:233-228.

Casassa, A.M, R, Crozzoli, J. Matheus, V. Bravo and M. Martin 1998. Effect of root knot nematode, *Meloidyogyne incognita,* on the growth of guava (*Psidium spp.)* in nurseries. Nematologia mediterranea. 26,:237-242.

Cuadra, R , and A. Quincosa,1982. Comportamiento de differentes species de *Pisidium* Como patrones para guayabos resitentes a *Meloidogyne (* Nematoda Heteroderdae) Ciencia de la Agricultura. 13:19-26

Fargette,M., M.S, Phillips, V.C, Block, R. Waugh,and D.L. Trudgill 1996. An RELP study of relationships between species populations, and resistance breaking lines of tropical Meloidogyne spp. Fundamental and Applied Nematology. 19,193-200.

Fernandez D-S, 1975. El *Psidium friedrichsthalianum* Como patron para guayabo, resistente a los nematodes del genero Meloidogyne. Revista de Agricultura, Cuba. 3:80-85.

Fernandez D-S. and Ortega H. 1998. An overview of nematological problems in Cuba. Nematropica. 28:151-164.

Moura R.M, E.M.R, Pedrosa, R.V, Lira, M. Menez, F.C.O. Freire and J.R. Cardoso. 1998. The etology of the sudden death of sorsop (*Anona muricata.)* Fitopatlogia Brasileira. 23:62-68.

Rodriguez H,E. Fernandez and A.A. Shestepervo. 1985. Adverse effect of *Meloidogyne* Infection on guava (*Psidum guajava L.)*And factors influenzing its development. Byulleten Vsesoyuznogo Instituta Gelmintologii im, K.I. Skyryabina. 41:48-56.

Shesteperov,A.A.1979..Pathogenicity of *Meloidogyne* in Cuba.In:Gallovye nematody sel'skokhoZyaistvennykh kul'tur i mery bor'by s nimi.(materialy simpoziuma, Dushanbe.25-27*senyabra*1979g.). Dushanbe, USSR.'Donish'. pp.65-67.