

Meloidogyne chitwoodii

Synonyms

None

Plant hosts

Columbia root knot nematodes feed on 3,000 plant species including vegetables, legumes, cereals, grasses, bush and tree fruits, and herbaceous and woody ornamentals.

Symptoms

Symptoms of *M. chitwoodii* vary according to host, population density of the nematode, and environmental conditions. Above ground symptoms are often not obvious but may consist of varying degrees of stunting, lack of vigour, and a tendency to wilt under moisture stress, all leading to reduced yield. The galls produced on potato tubers by *M. chitwoodii* differ from those caused by other species of *Meloidogyne*. *M. hapla*, for example, forms small but distinct galls (together with extensive root proliferation) while *M. incognita* forms large, easily noticeable galls. The symptoms caused by *M. chitwoodii* are often not easily detected and are more apparent in some cultivars than in others; tubers may, in some cases, be heavily infected without visible symptoms. When present, the galls appear as small raised swellings on the tuber surface above the developing nematodes. A number of galls may be concentrated on one area of the tuber or single galls may be scattered near eyes or lesions. Internal tissue below the gall is necrotic and brownish. Adult females are visible just below the surface as glistening, white, pear-shaped bodies surrounded by a brownish layer of host tissue. Potato roots may also be infected. This is difficult to detect without a magnifying lens as little or no galling occurs, even in heavy infestations. The spherical bodies of females may protrude from the surface of small rootlets surrounded posteriorly by a large egg-filled sac, which becomes dark-brown with age. In other crops, root galls and reduced root production decrease yields and marketability. Gall formation occurs on most cereals but is more noticeable on wheat and oats than on barley or maize. In tomatoes, *M. chitwoodii* produces root galls in some cultivars but not in others.



Image provided by Clemson University USDA Cooperative Extension Slide Series.

Transmission

Columbia root knot nematodes are transmitted by the movement of infested soil, water, and plant material. Dirty farm machinery can transmit this pest from an infested field to a noninfested field. Infested propagation material such as cuttings and transplants can also transmit this pest.

Geographic distribution

Columbia root knot nematodes are distributed worldwide.

Applicable regulations

Columbia root knot nematodes are a pest of concern to Oregon's interstate and international customers. Nematode testing is available through the Commodity Inspection Division.