YU, M. H., USDA, Agricultural Research Service, 1636 East Alisal St., Salinas, CA 93905. - Sugarbeet root-knot nematode and approaches taken to develop resistant varieties.

Sugarbeet is one of the favored hosts of root-knot nematodes. In areas where *Meloidogyne* spp. occur, they can be a serious problem, and in some cases result in a complete crop failure. Observations on nematode life cycles and screening for host plant resistance were conducted in the laboratory and greenhouse. Development of root-knot nematode is marked by the occurrence of four molts and five stages. Nematode feeding stimulated formation of giant cells in host tissues, resulting in root galls and protuberances, thus hindering sugarbeet growth and limiting production. The rate of nematode reproduction was positively associated with the number of root galls formed. Resistance to root-knot nematode is rare; nevertheless, resistance has been identified in *Beta maritima* germplasm. Hybrid crosses were made between the resistant sea beets and sugarbeet. Nematode resistance was transmitted to both the outcrossed and selfed progenies through pollination. Derivative plants with desirable traits are being selected for breeding sugarbeet resistant to root-knot nematode.