WEILAND, J. J.[1] and YU, M. H.,[2] [1]USDA-ARS, Northern Crop Science Laboratory, Fargo, N.D. 58105 and [2]USDA-ARS, Sugarbeet Production Laboratory, Salinas, CA 93905. **Molecular genetic tagging of resistance in sugarbeet to root knot nematode (*Meloidogyne* species).**

Incorporation into sugarbeet (*Beta vulgaris* L.) of resistance to root knot nematode has been an ongoing project at the USDA-ARS laboratory in Salinas, CA. Resistance discovered in *Beta maritima* appears to be simply inherited and is effective against multiple species and races of nematode belonging to the genus *Meloidogyne*. Sugarbeet population accession 1568 segregating for a resistance to root knot nematode was used in an effort develop molecular genetic markers tagging this resistance. Preparations of DNA were made from leaves of plants that exhibited susceptiblity or resistance to nematode after inoculation in a greenhouse. Pooled DNA of segregants was used to identify markers associated with the resistance using the random amplified polymorphic DNA technique. At least 5 DNA markers were obtained that co-segregated with nematode resistance. One marker was coupled in repulsion to the resistance. The use of this marker in the incorporation of nematode resistance into elite sugarbeet breeding germplasm is discussed.