SUSCEPTIBILITY OF NATURALIZED SERICEA LESPEDEZA IN THE KANSAS FLINT HILLS TO INFECTION BY THE ROOT-KNOT NEMATODE, *MELOIDOGYNE INCOGNITA*. Shannon L. Jordan, Undergraduate Research Assistant, Department of Agronomy, Timothy C. Todd, Instructor of Nematology, Department of Plant Pathology and Walter H. Fick, Associate Professor, Department of Agronomy, Kansas State University, Manhattan, KS 66502.

Sericea lespedeza is a noxious weed in Kansas. It was planted and grown in Kansas from the 1930's to the 1950's for soil stabilization and erosion control. It was also inadvertently planted during the mid 1980's in CRP land. Sericea lespedeza is an aggressive legume that competes with native range plants and is unpalatable to cattle.

Currently, the herbicides triclopyr, metsulfuron, dicamba, and some combinations are recommended for control of sericea lespedeza. Grazing with goats has been suggested as a method of control due to the woody nature of this plant when mature. Currently this is the only method of biological control for sericea lespedeza. However, the root-knot nematode genus *Meloidogyne* is a natural enemy of sericea lespedeza, which can do extensive damage to the plant by suppressing root growth and lowering forage production. Work on breeding lines of sericea lespedeza resistant to the root-knot nematodes for forage appears to have been done from the 1950's to the 1970's. Much of the sericea lespedeza was planted prior to the 1950's and genetic variation in naturalized sericea lespedeza stands in Kansas has been observed. It is a possibility that a portion of the population of sericea lespedeza in Kansas may be susceptible to the root-knot nematode, *M. incognita*. While other species of *Meloidogyne* have also been found to infect sericea lespedeza, *Meloidogyne incognita* is currently found in Kansas. The root-knot nematode could be a source for a method of biological control.

This study was a two-part experiment involving a greenhouse trial and a field trial. Sericea lespedeza seed from a local source was grown in sterile soil in the greenhouse. It was inoculated with *M. incognita* and grown for 6 weeks. After 6 weeks, the roots were incubated and the nematodes were recovered and counted. The results from the greenhouse study showed the plants were susceptible to the nematode and above ground biomass was reduced by 29% compared to the control. In the spring of 2003, a field trial was conducted with a naturalized population of sericea lespedeza in Pottawatomie County, KS. Two methods of application were used. In the first treatment, the nematodes were applied to two furrows down the center of the plot. Nematodes were applied using a hand sprayer over the entire plot in the second treatment. These plots were harvested in the fall of 2003. The roots were incubated and the nematodes counted.

In the greenhouse trial, sericea lespedeza was susceptible to *M. incognita*. Field results suggest sericea lespedeza may be susceptible under natural conditions as well. The results from this study are encouraging for future trials using the root-knot nematodes as a possible biological control method or in combination with other control methods as a treatment regimen. However, care must be taken when considering root-knot nematodes in relation to the location of the study as they can infect some crops.