Biological Control of Russian Thistle

R. SOBHIAN
EBCL/ARS/USDA, Montpellier, France

Russian thistle, *Salsola kali* (Chenopodiaceae), was introduced into the USA from Russia in the late 1800s and has become one of the most troublesome weeds in the drier regions of North America.

Explorations during 1996 and 1997, with financial support of CDFA, in Turkey, Uzbekistan, China, and France, resulted in discovery of several promising natural enemies for biological control of the weed. The five top candidates are prioritized here:

1- The mite, *Aceria salsolae* DeLillo and Sobhian (Acari : Eriophyidae). Studies carried out in Turkey showed that the mite attacks the Russian thistle from California and did not attack the other six species or varieties tested, including sugar beet, table beet, and spinach.

2- *Piesma salsolae* (Piesmidae). This is a gregarious species and heavily damages its host plant. According to the available literature and field observations, its host range is restricted to Russian thistle.

3- *Gymnancella canella* Denis and Schiffemueller (Pyralidae). The larvae of this moth have serious negative effects on seed production. According to the available literature and field observations, the host range of the species is restricted to Russian thistle.

4- The gall midge *Desertovellum stackelbergi* (Cecidomyiidae). Heavy gall formation reduces plant size and seed production. The species has been reported only on Russian thistle.

5- *Uromyces salsolae*, a rust disease. Infected plants remain stunted and produce fewer seeds. Its host range seems to be restricted to Russian thistle.

Arthropods Associated with Tropical Soda Apple, *Solanum viarum*, in the Southeastern U.S.A.


1USDA-ARS, Biological Control & Mass Rearing Research Unit, P.O. Box 225, Stoneville, Mississippi 38776, USA

2USDA-ARS, Southern Insect Management Research Unit, P.O. Box 346, Stoneville, Mississippi 38776, USA

3USDA-ARS, Southern Weed Science Research Unit, P.O. Box 350, Stoneville, Mississippi 38776, USA

4Entomology and Nematology Department, University of Florida, P.O. Box 110620, Gainesville, Florida 32611, USA

5USDA-ARS, South American Biological Control Laboratory, Bolivar 1559, 1686 Hurlingham, Buenos Aires, Argentina