Natural enemies of balloon vine and pompom weed in Argentina: prospects for biological control in South Africa

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As part of a new South African strategy for targeting weeds at an early stage of invasion (emerging weeds), a cooperative research agreement has been signed between the Plant Protection Research Institute (PPRI), South Africa and the USDA–ARS South American Biological Control Laboratory. The objective of this collaboration is to search for and study host-specific natural enemies of the emerging weeds, balloon vine (*Cardiospermum grandiflorum*: Sapindaceae) and pompom weed (*Campuloclinium macrocephalum*: Asteraceae). Balloon vine, a perennial woody climber, originally from tropical and sub-tropical America, and pompom weed, an ornamental herb native to South and Central America and Mexico, are considered serious invasive weeds in South Africa. Several exploratory trips were conducted in Argentina to survey for potential natural enemies of these weed species. Among the natural enemies found on balloon vine, the seed-feeding insects *Cissoanthonomus tuberculipennis* (Coleoptera: Curculionidae) and *Lisseurytomella flava* (Eulophidae) constitute the most promising candidates. Surveys on pompom weed revealed the presence of the stem-galling thrips, *Liothrips* sp. (Thysanoptera), *Cochylis* n. sp. (Tortricidae) and *Adain*a sp. prob. *simplicius* Grossbeck (Pterophoridae), two flower-feeding moths that cause considerable damage to the developing seeds. The potential of these insects as biocontrol agents is currently being assessed in Argentina and South Africa.

Tamarix biocontrol in US: new biocontrol agents from Kazakhstan

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According to research of Kazakhstan biological control research group (since 1994), the four most preferable potential *Tamarix* biocontrol agents for introduction into the USA (after *Diorhabda elongata*) are: (1) the stem-galling moth, *Amblypalpis tamaricella* (Lepidoptera: Gelechiidae); (2) the foliage and flower galling psyllid,*Crastina tamaricina* (Homoptera: Psylloidea, Aphalaridae); (3) the gall midge, *Psectrosema noxium* (Diptera: Cecidomyiidae); and (4) the foliage-feeding weevil, *Coniatus steveni* (Coleoptera: Curculionidae). All can heavily damage *Tamarix* in Kazakhstan, and all have some protection from predators and from drowning. The best agent among four species is *A. tamaricella*; it inhabits riparian forests and deserts in south and southeastern Kazakhstan, and heavy infestations are capable of killing entire trees.