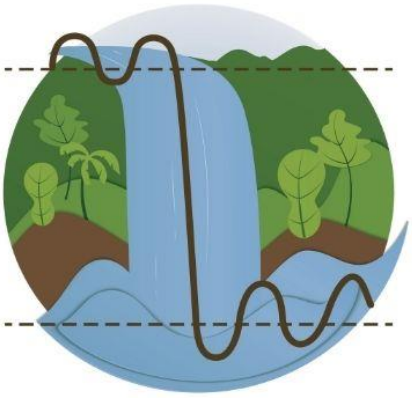
PROCEEDINGS



XVI INTERNATIONAL SYMPOSIUM ON BIOLOGICAL CONTROL OF WEEDS

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Poster presentation

Exploring biological control of field bindweed, *Convolvulus arvensis* (Convolvulaceae), in Argentina: progress so far

Villamil Soledad C.[1,2], Daddario Juan F. F.[1,3], Lasa Miren[1], Hernández Duré Loreley B.[1], Martín Arrieta Milagros[1], Sastre-Hughes Fabrina A.[1] & Anderson Freda E.[3]

[1]Departamento de Agronomía, Universidad Nacional del Sur. Bahía Blanca, Argentina.
[2]CIC, Comisión de Investigaciones Científicas. La Plata, Buenos Aires, Argentina.
[3]CERZOS-CONICET. Bahía Blanca, Buenos Aires, Argentina.
E-mail address: soledad.villamil@uns.edu.ar

Field bindweed, *Convolvulus arvensis* L., is a persistent, perennial invasive species in Argentina. Despite extensive research on its control, it continues to be one of the most serious perennial weed infesting farmland worldwide. *C. arvensis* occurs across a wide range of settings such as agricultural fields, pastures, lawns, roadsides, and other disturbed areas. Its ability to invade and persist in a variety of habitats due to its long-lived seeds, adventitious buds on its extensive root system, and carbohydrate reserves in its roots, make management more challenging. Mechanical disturbance can exacerbate the problem by spreading vegetative propagules and repeated use of herbicides can lead to the appearance of resistant biotypes. In 2019, a recently formed research team began a project to explore the feasibility of incorporating conservative biological control to an integrated management approach, focusing on organisms associated with the target weed in its adventive range. Surveys were conducted to search for phytophagous insects and fungal pathogens on field bindweed populations in the southwest of the province of Buenos Aires. Three beetle species of Chrysomelidae: Cassidinae and one of Lepidoptera were found feeding on the foliage at different sites. The occurrence of *Botanochara angulata* and the lepidopteran was negligible, therefore only the other two species, *Chelymorpha varians* and *Paraselenis* cf. *saltaensis,* were selected considering the high specificity to host plants, extensive feeding, and prolonged reproductive periods characteristic of many Cassidinae. Very recently, in January 2023, a fourth species of Cassidinae was collected. As a first step, the biology of these insects is being studied. Rearing in the lab has been achieved with variable degrees of success. Three fungal pathogens were also found causing conspicuous damage to foliage at several sites: a powdery mildew and the leaf spot fungi *Septoria convolvuli* and *Stagonospora calystegiae*. The last two were selected for further trials: pathogenicity was confirmed for both and specificity testing is partially completed with inconclusive results. Field observations and results of artificial inoculation tests indicate that, of the two pathogens, *St. calystegiae* is capable of inflicting the greatest level of damage to individual plants. Another fungus, *Colletotrichum* sp., was recently isolated from other leaf spots. Its identity and pathogenicity is under study. The diversity of natural enemies found to date is interesting and justifies further research into their suitability as biological control agents.