
Unravelling the Identity of *Tamarix* in South Africa and its Potential as a Target for Biological Control

M. Byrne, G. Mayonde and G. Goodman-Cron

School of Animal, Plant and Environmental Sciences, University of the Witwatersrand, Wits 2050, South Africa marcus.byrne@wits.ac.za

Abstract

The Old World genus *Tamarix* has become naturalized and invasive in much of the rest of the world. *Tamarix usneoides* E. Mey. ex Bunge is native to south western Africa and indigenous to South Africa, where it is being used for phytoremediation of acid mine drainage from tailings storage facilities on gold mines. However, *T. chinensis* Lour., *T. parviflora* DC. and *T. ramosissima* Ledeb. are all exotic to South Africa, and are hypothesized to be hybridizing among themselves and with *T. usneoides*. Correct specific identification is therefore essential; to clone the indigenous species for phytoremediation use, and to investigate the possibility of biological control of the alien species. *Tamarix* remains one of the more taxonomically difficult genera to identify and when in the vegetative state many taxa are almost indistinguishable. The high incidence of hybridization in *Tamarix* also plays a role in the taxonomic confusion. The Internal Transcribed Spacer (ITS) regions of ribosomal DNA (rDNA) were successfully used to identify the local *Tamarix* species and their hybrids. Insect abundance and diversity were found to be higher on the indigenous *T. usneoides* than on the exotic *T. ramosissima* and its hybrids, suggesting that a potential biological control agent might distinguish between the alien and indigenous species. The potential for successful biological control of *T. ramosissima* in South Africa is discussed.