

Iris pseudacorus L. (Irideae, Iridaceae) in South Africa: Feasibility of eradication

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Summary *Iris pseudacorus* is a perennial herb in the Iridaceae family, native to North Africa, Eurasia and the Mediterranean region. It has been introduced to several countries in the world including United States, Canada, and New Zealand where it is now considered invasive. It is an aggressive invader of wetlands and mostly found along river banks, stream banks and edges of the dams. In South Africa the species is listed as category 1a on the National Environmental Management Biodiversity Act 2004 (Act No. 10 of 2004) [NEM:BA] Alien Invasive Species List 2014, meaning that it is an eradication target. As part of a long-term management plan for the species in South Africa, its extent of invasion is currently being assessed. Here we report on the current extent of invasion of the species, seed germinability, the feasibility of eradication, and provide recommendations for management. The first record of this species in South Africa was in 2004 in one province. We have since discovered that *I. pseudacorus* has increased in abundance and range especially

after 2010. At present, the species has been recorded from five provinces as 64 isolated populations in total. The species spreads mostly by rhizomes, however, in our seed germinability tests we found that seeds are highly viable in South Africa. In laboratory conditions, 90% of seeds germinated at 25°C. For feasibility of eradication, three herbicides were tested (imazapyr 100 g L⁻¹, glyphosate 480 g L⁻¹ ae, and imazapyr 300 g kg⁻¹ + glyphosate 216 g kg⁻¹). Imazapyr was effective in controlling *Iris pseudacorus* at concentrations of 0.5% and 1%. Regrowth was only observed in ~2% of the population towards the centre, 11 months after treatment with 0.5% imazapyr (100 g L⁻¹). Given its known distribution, we recommend that the species be reclassified as category 1b on the NEM: BA, and that further research is conducted on the possibility of biocontrol as a suitable management option.

Keywords: Iridaceae, *Iris pseudacorus*, invasive, South Africa.