

***Tecoma stans* a potential invasive alien in Namibia?**

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Abstract

Tecoma stans is an ubiquitous garden ornamental shrub throughout towns in Namibia. Escapee plants were observed in the vicinities of Windhoek, Grootfontein, Tsumeb and along the Kwando River in northeast Namibia. It is suggested that *Tecoma stans* may potentially pose a threat and become invasive in Namibia and that eradication be implemented immediately.

Keywords: *Tecoma stans*, Yellow Elder, invasive alien, Namibia

Introduction

Tecoma stans (Class Magnoliopsida, Order Scrophulariales and Family Bignoniaceae) is a popular ornamental tree or shrub with beautiful bright yellow trumpet-like flowers. It is commonly known as Yellow bells or Yellow elder and a common garden plant in Windhoek. The natural distribution includes the southern states of the USA (Henderson 2001) with naturalized populations extending into South America as far south as northern Argentina as well as Australia and a number of Polynesian Islands (Giddy 2004).

T. stans is known to invade roadsides, urban open spaces, watercourses and rocky sites in subtropical and tropical savannah. In South Africa it is classified as a Category 1 invasive alien plant implying that it is prohibited and no longer tolerated in rural nor urban areas, except with the written permission of the executive officer or in an approved biocontrol reserve. It may no longer be planted or propagated, and all trade in its seeds, cuttings or other propagative material is prohibited. It may not be transported or be allowed to disperse (Henderson 2001). The reason for this is that it might pose a serious health risk to humans or livestock, cause serious financial losses to land users, be able to invade undisturbed environments and transform or degrade natural plant communities, use more water than the plant communities it replaces or be particularly difficult to control (Klein 2002).

T. stans is not included as a potential problem plant in Bromilow (1995) nor included in the distribution maps from southern Africa in Coats-Palgrave (1983) and Van Wyk & Van Wyk (1997). The Tree Atlas of Namibia, a recent publication which includes a number of invasive alien species, also does not include *T. stans* from Namibia (Curtis & Mannheimer 2005). Possibly the most comprehensive study on invasive alien species, including plants, in Namibia was published by Brown *et al.* (1985). Neither Brown *et al.* (1985), Kolberg (1998) nor Steenkamp & Smit (2002) mention *T. stans* as a potential problem in Namibia. This lack of scientific cover for a potentially invasive species is disconcerting. The only mention of *T. stans* from Namibia was published by Macdonald & Nott (1987).

This paper focuses on the current distribution of *T. stans* as escapees throughout Namibia and suggests the use of alternative indigenous species.

Distribution in Namibia

According to Macdonald & Nott (1987) one individual plant was observed growing on the road verge south of Outjo in the Thornbush Savannah vegetation type, but they could not determine if it was self sown or not. Its frequency of occurrence and mean abundance rating was estimated as 3% and 1.0 as conducted during road transects focusing on alien plants throughout Namibia (Macdonald & Nott 1987).

Methods

A literature survey was conducted to determine the distribution of *T. stans* locally and abroad and to determine the potential threat it may pose as an invasive alien to Namibia.

Escapee plants were identified and documented whilst traveling extensively throughout Namibia. All observations were made during late 2005 and 2006.

Results

T. stans were located at four sites, outside of towns, in areas receiving >300 mm of rainfall per year (Figure 1).

An individual plant was observed growing along the road (eastern side of the road) between the Kongola turnoff to Nambwa Community Campsite and Nambwa itself approximately 10 km from the turnoff between Divundu and Kongola (17°48'08"S; 23°19'50"E Elevation – 980 m) in the Tree and Woodland Savanna (Giess 1971) (Figure 2). This plant was possibly planted as an ornamental at the previous military base, known as Fort Doppies, and observed in the company of bougainvillea.

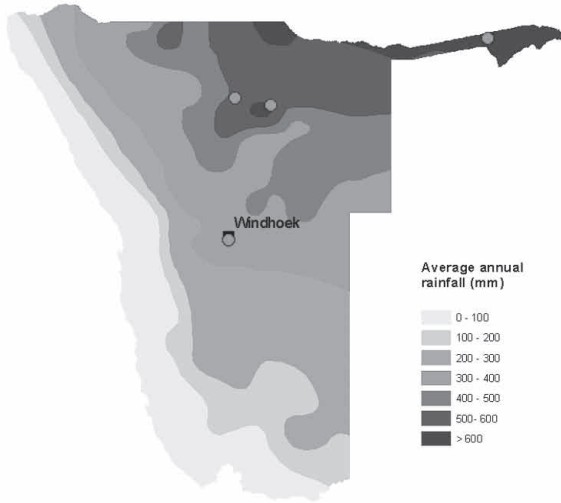


Figure 1: Distribution of *T. stans* in relation to average annual rainfall throughout Namibia.



Figure 2: *T. stans* individual located along the Kwando River (See floodplains in the background) at the site previously known as Fort Doppies.

An individual plant was observed growing along the road (north western side of the road) between Grootfontein and Rundu approximately 16 km north of Grootfontein (no coordinates available) in the Tree Savannah and Woodland vegetation type (Giess 1971) (Figure 3). Other aliens in the immediate vicinity include *Penisetum setaceum*.



Figure 3: *T. stans* individual located along the road verge 16 km northeast of Grootfontein.



Figure 4: *T. stans* located along the railway line approximately 5 km northwest of Tsumeb.

A small population were observed growing along the railway line (western side of the road) between Tsumeb and Oshivelo approximately 5 km northwest of Tsumeb (19°14' 26"S; 17°14'22"E Elevation – 1298 m) in the Mountain Savanna and Karstveld vegetation type (Giess 1971) (Figure 4). Other aliens in the immediate vicinity include *Lantana camara* & *Pennisetum setaceum*.

An individual plant was observed growing along the road (northern side of the road) between Windhoek and Rehoboth approximately 10 km south of Windhoek (22°39'34"S; 17°04'16"E; Elevation – 1819 m) in close proximity to the railway bridge in the Highland Savanna (Giess 1971) (Figure 5).



Figure 5: *T. stans* individual located approximately 10 km south of Windhoek.

A number of escapee plants were also observed along drainage lines (e.g. Klein Windhoek River) throughout Windhoek as well vacant lots, sidewalks and road verges. *T. stans* being a common ornamental garden plants, are responsible for many “sidewalk” escapees throughout towns in Namibia. *T. stans* is sold in various nurseries in Namibia.

Discussion

These observations from at least three different vegetation types associated with >300 mm of rainfall p.a. are disconcerting and suggest that *T. stans* has the potential of becoming invasive in Namibia especially in frost free areas as it does not

tolerate heavy frost (Giddy 2004). Other factors favouring its invasiveness include the following: fast-growing, prefers well-drained soils but will grow on a wide variety of soils, including sand and lime rock; is a drought tolerant shrub; is relatively resistant to pests, flowers and fruits year round in climates of small or no seasonal change and during autumn in seasonal climates and produces copious amounts of wind borne seeds (Gilman & Watson 1993, Giddy 2004).

Ornamentals ought to be reasonably easy to replace with less invasive substitutes (Klein 2002). Giddy (2004) suggests that *T. stans* could be substituted with the yellow flowering indigenous tree, *Peltophorum africanum* (Weeping wattle) in Namibia. Other yellow flowering indigenous shrubs that could be used as replacements include *Markhamia obtusifolia* (Golden Bell-bean) and *M. zanzibarica* (Bell-bean) from north-eastern Namibia and the more widespread *Rhigozum brevispinosum* (Simple-leaved rhigozum) (See Curtis & Mannheimer 2005). Nurseries should be encouraged to propagate and sell alternative indigenous plant species at the expense of potentially invasive alien ornamental species.

The potential of *T. stans* an invasive has been documented from a number of countries worldwide (Gilman & Watson 1993, Klein 2002) raising the question why this and other potential invasive plants are still tolerated and legally sold in Namibia. Since Macdonald & Nott (1987) located the individual *T. stans* in the Outjo area, no other references to this species as a potential invasive could be found from Namibia. Invasive alien plants often have the tendency to be innocuous and thus initially not viewed as a concern which is alarming. The old saying ‘prevention is better than cure’ rings true, and immediate eradication of *T. stans* outside towns is suggested to combat its spread before its control becomes problematic and unmanageable.

Acknowledgements

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