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***Furcraea hexapetala* and *F. selloana* (Asparagaceae, Agavoideae), new genus and species records for Tunisian alien succulents**

Abstract

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The present work documents the occurrence in the wild of two casual alien succulent plant species, *Furcraea hexapetala* (Jacq.) Urb. and *F. selloana* K.Koch, from the central and northern regions of Tunisia. These species, native to the American continents, have been recorded for the first time to occur as casual individuals in some localities within urban habitats. Being closely related to some species of *Furcraea* subgen. *Furcraea*, typical distinguished macromorphological features are provided to validate these new records together with photos.

Key words: Flowering Monocots, Succulents, Tunisia, casual aliens, North Africa.

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Introduction

The genus *Furcraea* Vent., is a member of the *Agavoideae* subfamily (*Asparagaceae*, *Asparagales*), characterized mainly by its spiral succulent to semi-succulent leaves, arranged in rosettes and its terminal paniculate inflorescence of large dimensions that present events of vegetative proliferation (false viviparity), producing numerous bulbils that once falling to the ground, can easily form new roots. Thus, constitute an important part for the propagation of the species (García-Mendoza 2000, 2001; Thiede 2020). Approximately the genus includes 20–25 species that are recognized in two subgenera: *F.* subgen. *Furcraea* Baker and *F.* subgen. *Roezlia* Baker (Baker 1888; Verhoek 1998; García-Mendoza 1999). These species have a neotropical distributive range within the Americas, from central Mexico to Paraguay, as well as in the West Indies with its southernmost range reaching as far south as the Andes mountains, usually restricted to dry habitats and nutrient-poor substrates, between sea level and 3000 m altitude (García-Mendoza 2000, 2001; Thiede 2020). Due to several uses attributed to leaves and/or flowers in industrial or ethnobotanical scales, many species (mainly of the subgen. *Furcraea*) have been introduced

and cultivated as ornamentals worldwide in (sub-)tropical and Mediterranean climates (Thiede 2020). Within the European Mediterranean (including Canary Islands, Portugal, Spain), several species can be found with different status of naturalisation namely, *Furcraea foetida* (L.) Haw., *F. hexapetala* (Jacq.) Urb., and *F. selloana* K. Koch (see e.g., Domingues de Almeida & Freitas 2006; Sánchez Gullón 2013; Verloove & al. 2019; Verloove & Smith 2024).

In the North African mainland, no official/confirmed reports of the occurrence of any species of *Furcraea* in the wild except those of Maire (1959). This latter mentioned the presence of two species [*F. foetida* (L.) Haw. and *F. stricta* Jacobi, sub *F. elegans* Tod.] that were introduced and cultivated within coastal gardens of North Africa for fibre purposes, with any precised localities. More recently, *F. hexapetala* has been documented from Morocco in the Tangier region (Homrani Bakali & al. 2025 in press).

The present contribution is continuity to the updating of the diversity of *Agavoideae* in North Africa (see e.g. El Mokni & Verloove 2021; Homrani Bakali & al. 2026). It deals with the first documented records of the genus *Furcraea* with two of its species (of the subgen. *Furcraea*) from Tunisia, *F. selloana* (first report to N-Africa from Tunisia) and *F. hexapetala* (second report to N-Africa and first report to Tunisia) as casual alien succulents of the North African mainland.

Materials and Methods

Botanical surveys were carried out in various urban habitats within central and northern Tunisia (North Africa), mostly between 2010 and 2024, revealed new national and even North African records of several interesting specimens of *Furcraea*. Digital photographs and GPS coordinates were taken in the field. The identification of the specimens was done mainly according to García-Mendoza (2001), Verloove & al. (2019), Thiede (2020). The nomenclature follows Valdés (2012). Voucher specimens are deposited in the personal herbarium of the author housed at the faculty of Pharmacy of Monastir (Monastir University).

Results

Furcraea hexapetala (Jacq.) Urb., Symb. Antill. 4: 152 (1903) ≡ *Agave hexapetala* Jacq., Enum. Syst. Pl.: 18 (1760)

Furcraea hexapetala (Fig. 1) is subshrub native to SE Mexico, Caribbean to Ecuador, very spread in the west part of the Cuba Island (Alvarez de Zayas 1996). This species seems among the most widely cultivated as ornamental but has rarely been reported as an escape so far. It was known as a naturalised alien species only from Canary Islands (Verloove & al. 2019) till recently discovered as a well-established alien in Morocco (Homrani Bakali & al. 2026).

Macromorphologically, *F. hexapetala* is a robust, acaulescent to subacaulescent plant, characterised mainly by a woody trunk up to 50cm, long rigid semisucculent leaves 100–



Fig. 1. *Furcraea hexapetala* in Tunisia. A. Habit and habitat during bulbils producing period, B. Leaves, C. Bulbils, D. Lateral ramification of the inflorescence, E. Opened flower in Front view, F. Advanced bulbil (seedling stage), Photographs by R. El Mokni.

160(–200) × (5.5–)8.0–12.0(–20.0)cm with spiny margins, and a rhomboidal outline terminal panicle up to 8m long (García-Mendoza 2001; Verhoek 2002; Homrani Bakali & al. 2025). The species could be confused with some closely related species of the subgen. *Furcraea* mainly *F. cabuya* Trel., *F. guatemalensis* Trel., and *F. selloana* K.Koch (see more in Verloove & al. 2019: 492) from which it can be easily distinguished by its more massive habit, persistent marginal spines, and vegetative propagation via bulbils (Thiede 2020).

Occurrence in Tunisia with Status of naturalisation – The species was found in two localities:

In central regions (CT, Monastir), during flowering period on 27/11/2021 and 01/02/2022 (two mature individuals with three juvenile individuals that have one meter tall in an area of 100m square), growing in an urban habitat together with *Arundo donax* L., *Parkinsonia aculeata* L., *Saccharum spontaneum* subsp. *aegyptiacum* (Willd.) Hack, *Vachellia karroo*.

In northern region (NE, Tunis), during bulbs producing period on 06/08/2024 (three mature individuals of different height with a lot of juvenile individuals from rooting bulbs in an area of 1 hectare), growing in a disturbed habitat within roadsides together with *Agave americana* L., *Ficus microcarpa* L.f., *Phoenix canariensis* H.Wildpret, *Washingtonia filifera* var. *robusta* (H.Wendl.) Parish, *Yucca* sp.

According to the definitions of Pyšek & al. (2002), *Furcraea hexapetala* should be treated as a casual alien.

Furcraea selloana K.Koch, Wochenschr. Vereines Beförd. Gartenbaues Königl. Preuss. Staaten 3: 22 (1860) = *F. lindenii* Jacobi in Gard. Chron. 1869: 587 (1869)

Furcraea selloana (Fig. 2) is a subshrub or a shrub with a native range restricted from Colombia to Ecuador. The plant seems widely cultivated as an ornamental or for fibre purposes in dry warm-temperate and subtropical areas of the world widely. It has been reported as an escape so far from several localities in Florida, in Australia and India, within the European countries (Including Canary Islands Spain, Portugal), and South Africa (see e.g. Castroviejo 2013; Sánchez Gullón 2013; Smith & Figueiredo 2016; Verloove & al. 2019; Verloove & Smith 2024). In North African mainland, the species was reported as cultivated only from Lybia (Raab-Straube 2022+).

Macromorphologically, *F. selloana* is a robust, acaulescent to subacaulescent plant, characterised mainly by a rosette leaves up to 4m in diameter, linear-lanceolate to oblanceolate, erect semisucculent, coriaceous, concave leaves (70–)100–170 × (7–)10–15cm with a specifically yellow leaf-margined form, and a lax oblong outline terminal panicle up to 10m long (García-Mendoza 2001; Homrani Bakali & al. 2026). The species could be confused with some closely related species of the subgen. *Furcraea* mainly *F. cabuya* and *F. hexapetala* (see more in Verloove & al. 2019: 494) from which it can be easily separated by its lanceolate leaves that are distinctly narrowed above base, 23–35(–50) teeth per leaf margin, an oblong, lax inflorescence, and oblong bracts with denticles at their apex only (Thiede 2020).

Occurrence in Tunisia with Status of naturalisation – The species was found only in the northern region (NE, Tunis), during flowering period on 20/12/2022 and 11/02/2022

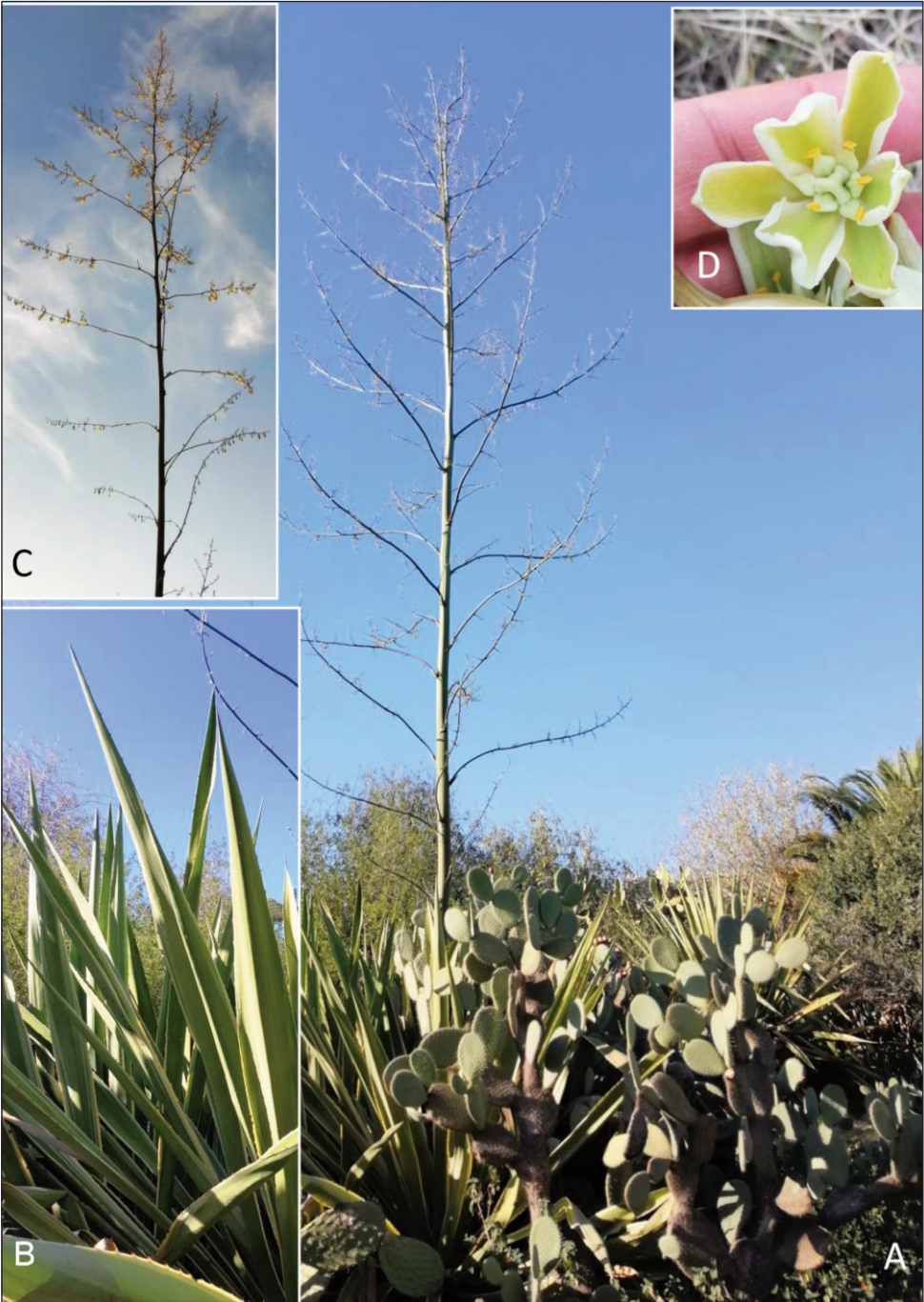


Fig. 2. *Furcraea selloana* in Tunisia. A—habit and habitat, B. Leaves, C. Inflorescence in large and high panicle, D. Opened flower in Front view, Photographs by R. El Mokni.

(five mature individuals with different wide rosette leaves in an area of 200m square), growing in an urban habitat together with mainly, *Campsis radicans* (L.) Bureau, *Lantana camara* L. subsp. *aculeata* (L.) R.W.Sanders, *Opuntia* spp., *Vachellia karroo* (Hayne) Banfi & Galasso. According to the definitions of Pyšek & al. (2002), *Furcraea hexapetala* should be treated as a casual alien.

Note – It was reported (Verloove & al. 2019) that records of *Furcraea selloana* made in the wild within Canary Islands were different mainly in leaves color. In Gran Canaria and Tenerife, specimens with a variegated form with creamy-yellow stripes along the leaf margin were relate to *F. s.* var. *marginata* Trel. (syn. *F. lindenii* Jacobi) whereas only in Puerto de la Cruz (La Paz) in Tenerife specimens with green leaves have been observed. Individuals with creamy-yellow stripes leaved is much more common in cultivation than the wild green forms.

Over the last decade, few amendments and additions to the generic diversity of the *Agavoideae* subfamily (*Asparagaceae*/*Agavaceae* s.l., Flowering Monocots) in North Africa have been made (see e.g., El Mokni 2018; El Mokni & Verloove 2022). The genus *Furcraea*, reported here for the second time, represents one such addition.

Discussion

In North African mainland, as elsewhere in the World, the ability of introduced *Furcraea* species to escape and to increasingly invade urban habitats is associated with their ability to produce numerous bulbils (ca. several thousand per plant) on a massive inflorescence. After flowering, these viviparous plantlets eventually drop, rooting easily on contact with the soil to form dense monotypic thickets that competes and can disturb/exclude native vegetation (ISSG Database 2009; Verloove & al. 2019).

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