

## *Exotic grasses running wild: Megathyrsus maximus* var. *pubiglumis* (Poaceae, Paniceae) – new to Spain.

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**ABSTRACT:** *Megathyrsus maximus* var. *pubiglumis*, a native of (sub-) tropical Africa, was recently recorded along the A7-E15 motorway in the Spanish provinces of Castellón and Valencia. In view of its abundance this grass species is believed to have been initially introduced for road verge stabilization. Some additional records for other recently escaping and naturalizing exotic grass species are enumerated. The potential impact of the introduction of exotic grass species for such purposes is briefly discussed.

**RESUMEN:** *Megathyrsus maximus* var. *Pubiglumis*, taxón nativo de África subtropical, fue recientemente observado a lo largo de la autovía A7-E15 en las provincias españolas de Castellón y Valencia. En vista de su abundancia, esta cespitosa se debe haber introducido por la estabilización de carreteras. Se citan también otras especies cespitosas exóticas, recientemente observadas como escapadas de cultivo y naturalizadas. Además, se discute el impacto potencial de la introducción de especies cespitosas exóticas.

### INTRODUCTION

Continued floristic investigations on the Spanish non-native vascular flora have provided numerous additional taxa in recent times and have much improved our current knowledge in terms of chorology, degree of naturalization (invasion success),... of this alien flora. At a global scale, the number of deliberately introduced taxa running wild is much increasing recently and naturalization occurs much more frequently in species imported on purpose (see for instance Esler & Astridge, 1987; Mack & Erneberg, 2002; Verloove 2006). This surely also holds true for Spain. In the present paper comments are provided about three exotic grass species (initially introduced for road verge stabilization or as a lawn grass) that managed to escape in more or less recent times (one of which is here reported for the first time from Spain). The potential risks related to the deliberate introduction of aggressive, reputed noxious species is briefly discussed.

### RESULTS

I. *Megathyrsus maximus* (Jacq.) B.K. Simon & S.W.L. Jacobs var. *pubiglumis* (K. Schum.) B.K. Simon & S.W.L. Jacobs (syn.: *Panicum maximum* Jacq. var. *pubiglume* K. Schum.; *Urochloa maxima* (Jacq.) R.D. Webster var. *trichoglume* (Robyns) R.D. Webster)  
**CASTELLÓN:** Torreblanca, motorway A7-E15 (km 392 towards Castellón), road verge, 04-IX-2005, F. Verloove 6127 (priv. herb. author, dupl. MA).

In 2003 *Megathyrsus maximus* – the notorious Guinea grass, a native of (sub-) tropical Africa – was recorded for the first time in Spain from a ruderal area in Cambrils (prov. Tarragona; Verloove 2005, sub *Urochloa maxima*). Infrastructural works have recently destroyed this small population (pers. obs. 09.2005). In the meantime however, *Megathyrsus maximus* appeared on the roadbanks of the A7-E15 motorway. The present populations are characterized by densely pubescent spikelets; they belong to var. *pubiglumis*, apparently reported for the first time from Spain (the plants from Cambrils had glabrous spikelets and belonged to var. *maximus*). *Megathyrsus maximus* is a tall, densely caespitose grass species (up to 4,5 m tall in its area of origin!; Clayton & Renvoize 1982) with a large, pyramidal, much branched panicle (fig. 1). It is widely grown in the tropics as an agricultural fodder species. Although the species' stature certainly has some ornamental value, it is apparently not grown for horticultural purposes (Walters & al. 1984). The mode of introduction of this tropical grass species in Spain seems obvious: as it is present along the A7-E15 motorway from Torreblanca southwards to Castelló de la Plana over a distance of at least 30 kilometers (province of Castellón) and again around Sagunto (province of Valencia) it must have been introduced deliberately for road verge stabilization. In the very same area the same holds true for several other non-native grass species. Well-known examples are the tropical *Chloris gayana* Kunth (cf. Carretero & Esteras 1983) and the South African *Eragrostis curvula* (Schrad.) Nees (cf. Verloove 2005) or *Bromus inermis* Leyss., *Cenchrus ciliaris* L., *Phalaris stenoptera* Hack. and *Pennisetum villosum* R.

Br. ex Fresen (Peris & Estes 1987, Esteras 1988). Like these taxa, *Megathyrsus maximus* var. *pubiglumis* seems to thrive well and is locally escaping. The nomenclature and taxonomy of this taxon underwent considerable modifications recently (see above for major synonymy). After being described initially as a representative of the genus *Panicum*, Webster (1987) transferred our taxon to the genus *Urochloa* on behalf of its particular lemma ornamentation. More recently Simon & Jacobs (2003) demonstrated that *Panicum* subgenus *Megathyrsus* (to which *P. maximum* belongs) should be elevated to generic rank and legitimated the new combination *Megathyrsus maximus*.

## II. Other Spanish records of exotic subspontaneous grass species

### *Pennisetum clandestinum* Chiov.

**ALICANTE:** Alicante, Babel, Barranco de las Ovejas, dry riverbed, several stands, 05-IX-2005, *F. Verloove* 6128 (priv. herb. author, dupl. MA); **ALICANTE:** Villajoiosa, riu Amadorio near the beach, 08-IX-2005, *F. Verloove* s.c.

The African *Pennisetum clandestinum*, better known under its vernacular name Kikuyu grass, is extensively cultivated as a forage or lawn grass in the (sub-) tropics. It is increasingly sown in lawns in southeastern Spain. Since 1992 *Pennisetum clandestinum* is reported as an escape from cultivation, primarily in the provinces of Alicante (San Vicente del Raspeig) and Valencia (Valencia) (Herrero-Borgoñón & al. 1995). The above records confirm the species' recent naturalization in the province of Alicante. In both cases *Pennisetum clandestinum* forms dense, almost monospecific stands in or near riverbeds. As it is sometimes very reluctant to flower (and even in flower very indistinctive) it might have been overlooked elsewhere.

The species is a declared noxious weed in many countries outside its natural range (see for instance Missing 1984) and a future rapid and local expansion in Spain cannot be excluded.

### *Pennisetum setaceum* (Forssk.) Chiov.

**ALICANTE:** Alicante, Babel, ruderal road verge of N332 near railway track in the harbour, one specimen, 08-IX-2005, *F. Verloove* 6107 (MA); **ALICANTE:** El Campello towards Villajoiosa, arid road verge of N332 (km 129-130), locally common, 08-IX-2005, *F. Verloove* 6111 (BR)

*Pennisetum setaceum* – presumably native in northeastern Africa and Arabia – is much grown as an ornamental in the more arid areas of southern Europe (Walters & al. 1984). Crespo & al. (1990) reported about its first escape of cultivation in Spain (El Campello, N332 km 102) and continental Europe. The additional records above confirm the recent naturalization and spread of *Pennisetum setaceum* in this area. Moreover, since its original discovery in the province of Alicante, the species also occurred in the provinces of Granada, Malaga and Valencia (Sanz Elorza & al. 2004).

*Pennisetum setaceum* is one of the most aggressive alien invaders in the Canary Islands, especially in the coastal areas (García-Gallo & al. 1999). Its eradication is time-consuming and very expensive. Climatological and environmental conditions are rather similar in parts of southeastern continental Spain and the species' future invasive behaviour is very likely.

## DISCUSSION

Invasive alien organisms are considered to be amongst the most important reasons for dramatic biodiversity loss worldwide. Some introduced plants often naturalize remarkably well and start outcompeting vulnerable native ones, which often leads to extinction of rare species. Early detection of such new alien, potentially invasive plant species is essential. In the present paper comments are provided about some recently escaping cultivated grass species. The introduction on purpose of exotic grass species for road verge stabilization has become common use in various parts of Spain. Most of the grasses that are introduced for such purposes are tall, fast growing and very competitive. They are, almost without exception, declared noxious weeds in their countries of origin as well as in their secondary areas. *Chloris gayana* and *Eragrostis curvula* for instance – both in rapid expansion in parts of Spain after their initial deliberate introduction – are well-known dangerous weeds in various (warm-) temperate areas worldwide. Surprisingly, they are still massively sown for local roadside stabilization in Spain although at least *Chloris gayana* and *Pennisetum setaceum* already has been reported as aggressive invaders in Spain (Sanz Elorza & al. 2004; Dana & al. 2005). Moreover, from this point of view, the recent introduction of *Megathyrsus maximus* for this purposes – also a reputed noxious weed in many parts of the world – appears to be very regrettable.

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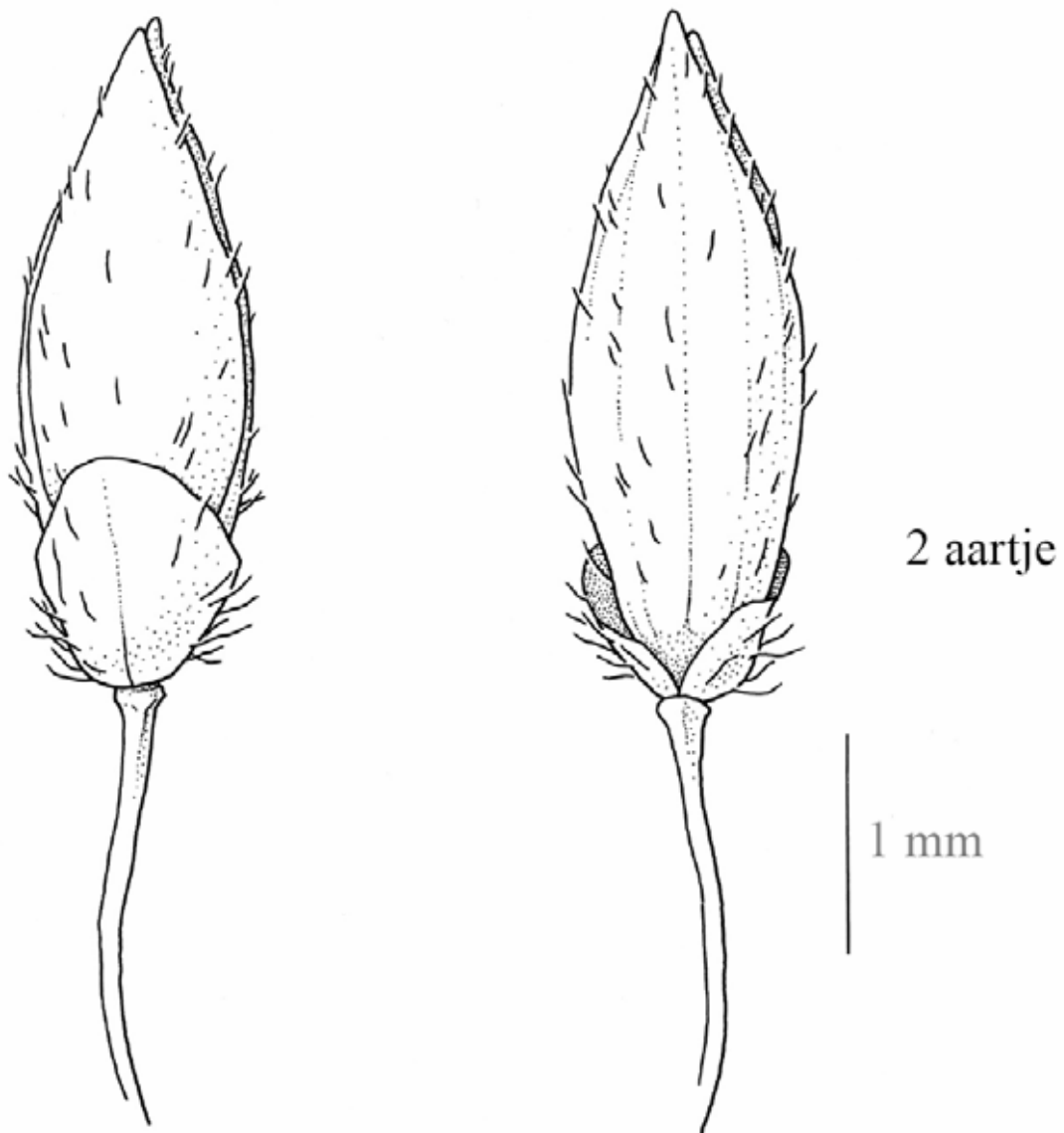
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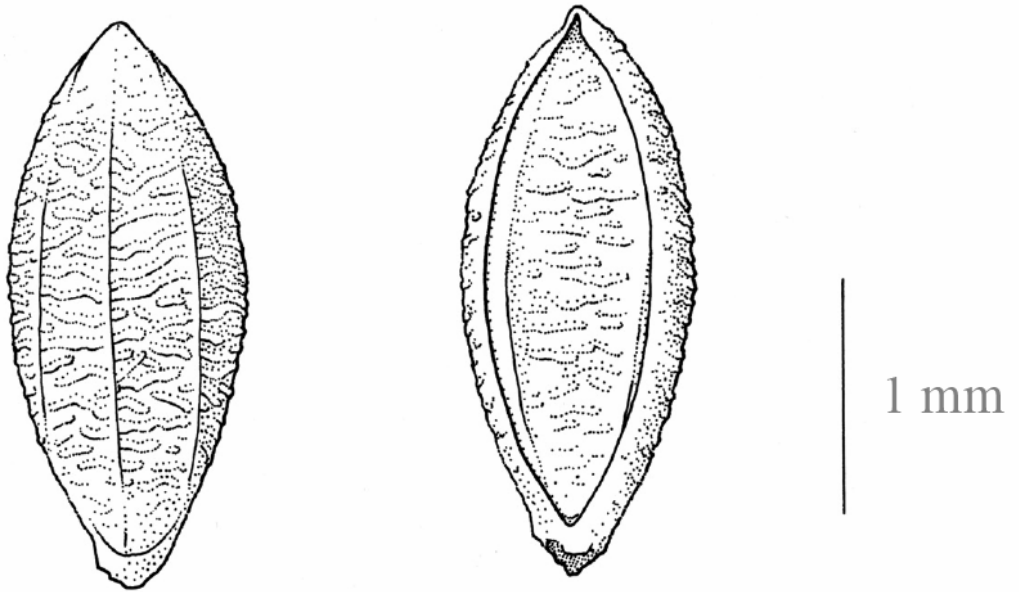
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[Figure 1. *Megathyrsus maximus* var. *pubiglumis* : 1. Habit, 2. Spikelet, 3. Upper lemma; drawn after *F. Verloove* 6127 by Sven Bellanger]







3 fertiele lemma