

Schinus terebinthifolia (Anacardiaceae) and *Maireana brevifolia* (Amaranthaceae), confirmation of two invasive plants in Spain

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Abstract

SCHINUS TEREBINTHIFOLIA (ANACARDIACEAE) AND *MAIREANA BREVIFOLIA* (AMARANTHACEAE), CONFIRMATION OF TWO INVASIVE PLANTS IN SPAIN. — The presence of two invasive alien plants, *Schinus terebinthifolia* and *Maireana brevifolia* has been confirmed in Almería (Spain). It is recommended that these species be included in the Spanish Catalogue of Invasive Alien Species.

Key words: Australian bluebush; Brazilian peppertree; invasive alien species.

Resumen

SCHINUS TEREBINTHIFOLIA (ANACARDIACEAE) Y *MAIREANA BREVIFOLIA* (AMARANTHACEAE), CONFIRMACIÓN DE DOS PLANTAS INVASORAS EN ESPAÑA. — Se reporta la presencia en Almería (España) de dos plantas alóctonas invasoras, *Schinus terebinthifolia* y *Maireana brevifolia*. Se recomienda su inclusión en el Catálogo Español de Especies exóticas invasoras.

Palabras clave: especies exóticas invasoras (EEI); mato azul; pimentero de Brasil.

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During the botanical exploration of semiarid SE of Spain, populations of *Schinus terebinthifolia* Raddi (Anacardiaceae) and *Maireana brevifolia* (R. Br.) Paul G. Wilson (Amaranthaceae) have been located in the province of Almería.

Schinus terebinthifolia is a shrub or small tree native to South America (Barkley, 1957). It has become naturalized across all continents (EASIN, 2025; EPPO, 2025; GBIF, 2025; GISD, 2025; POWO, 2025), including the Canary Islands (Verloove, 2013; Otto & Verloove, 2016) and Mediterranean regions of N Africa and Israel (Greuter & Raus, 1989; Dobignard & Chatelain, 2011; El Mokni, 2019). This species is highly invasive, producing large quantities of seeds, outcompeting

native vegetation, reducing biodiversity, and causing significant economic losses (Cuda *et al.*, 2006; Diagne *et al.*, 2020). It ranks among the 100 most harmful invasive alien species in the world (Lowe *et al.*, 2000) and is listed on Spain's Invasive Alien Species (IAS) blacklist (Capdevila *et al.*, 2006).

Maireana brevifolia is a shrub native to Australia, where it is an early colonizer of disturbed land (Wilson, 1975). This species has been reported as naturalized in the Canary Islands, Middle East, South Africa, Chile (Marticorena, 1997; Reyes-Betancort *et al.*, 2002; Dobignard & Chatelain, 2011; Mucina & Snijman, 2011; EASIN, 2025; EPPO, 2025; GBIF, 2025; POWO, 2025) and more recently in Morocco (Giardi & Homrani, 2023). It has been included, for the Canary Islands, in the Spanish Catalogue of Invasive Alien Species (Government of Spain, 2013; MITECO, 2024).

Voucher specimens were deposited in the herbarium of the University of Murcia (MUB), University of Almería (HUAL), and Real Jardín Botánico (MA).

***Schinus terebinthifolia* Raddi**

Spain, Almería: Pulpí, San Juan de los Terreros, Salinas, 37° 21' 34.092" N, 1° 40' 12.216" W, 3 m, artificial canal, 22.IX.2020, *A. Lahora* (MUB-SURESTE 116502, MA-01-00967028). Pulpí, Mundo Aguilón, Rambla de Terreros, 37° 21' 23.256" N, 1° 42' 23.256" W, 57 m, rambla bank, 31.X.2021, *A. Lahora* (MUB-SURESTE 116501, HUAL 20702, MA-01-00967027).

It has been planted as an ornamental in urbanizations of San Juan de los Terreros (Pulpí, Almería) from where it has escaped colonizing natural ravines and wet canals in salt marshes (Figs. 1 and 2). Large specimens (1.6–2.3 m) have been found fruiting with other native and alien plants such as *Nerium oleander* L., *Phragmites australis* (Cav.) Trin. ex Steud., *Tamarix gallica* L., *Lantana strigocamara* R. W. Sanders, and *Washingtonia filifera* (T. Moore & Mast.) H. Wendl. ex de Bary.



Figure 1. Location map of casual (red circles) and planted (blue) specimens of *Schinus terebinthifolia* in San Juan de los Terreros (Spain).

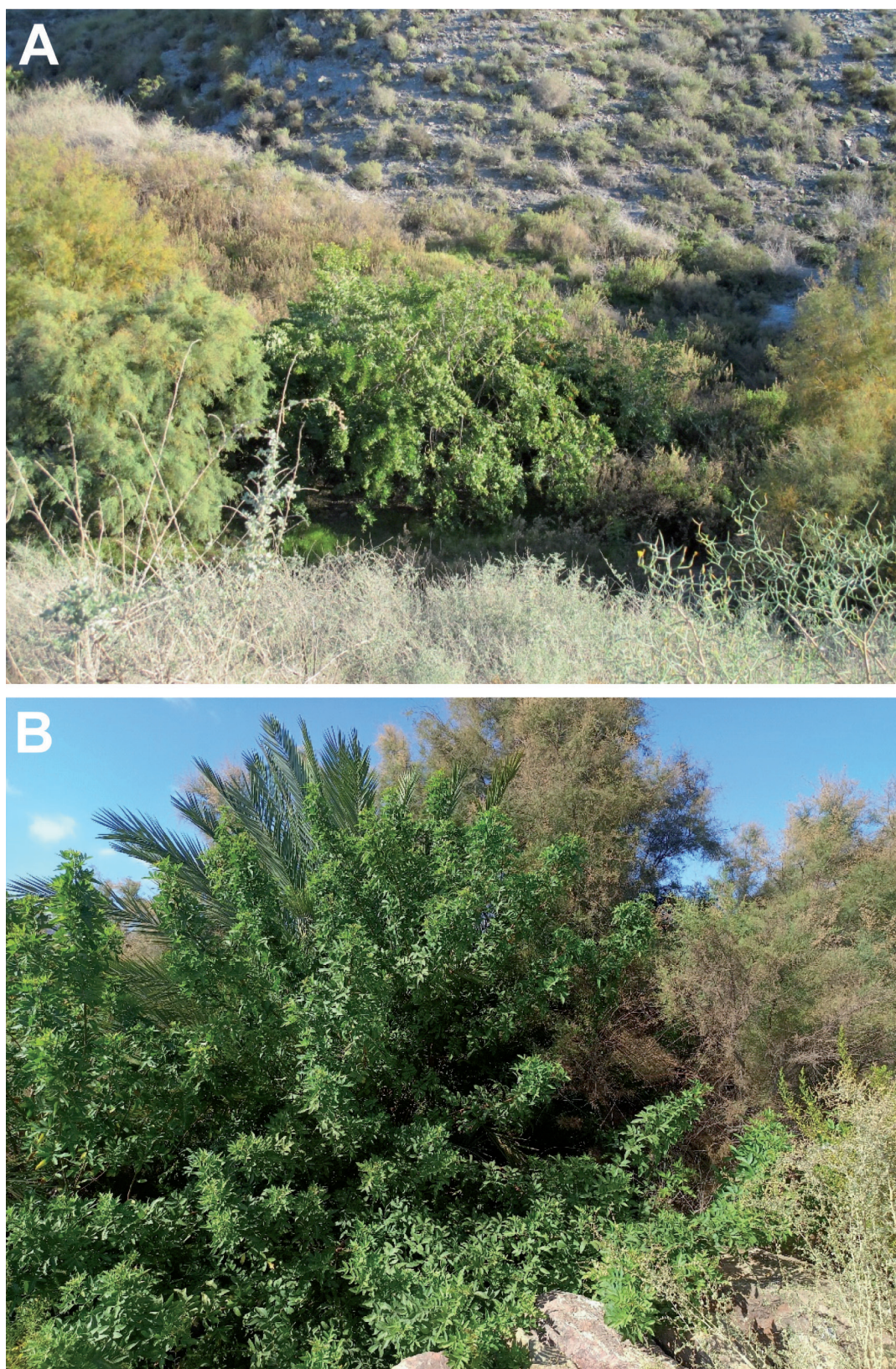


Figure 2. *Schinus terebinthifolia*: (A), colonizing natural ravines; (B), wet canals in salt marshes. San Juan de los Terreros, Pulpí (Spain).

Schinus terebinthifolia was known to occur in Spain as a cultivar in gardens throughout the Mediterranean coast including the Balearic Islands (Leal & Guardia, 1987; Sagredo, 1987; Kunkel & Kunkel, 1996; López & Sánchez de Lorenzo-Cáceres, 1999; Argimon de Vilardaga, 2007) and as a diaphyte (Dana *et al.*, 2001; Sanz-Elorza *et al.*, 2004; Roselló *et al.*, 2022). There are references as locally naturalized in Spain and Portugal (Tutin, 1968; Rojas-Sandoval & Acevedo-Rodríguez, 2014; Gómez-Bellver, 2023; GBIF, 2025), but this could not be fully confirmed for over 10 years (Pyšek *et al.*, 2004; Güemes & Sánchez-Gómez, 2015). Despite its known invasion risk, it continues to be planted in urban parks throughout Spain (Bayón *et al.*, 2022).

Maireana brevifolia (R. Br.) Paul G. Wilson

Spain, Almería: Huércal Overa, Las Labores, 37° 26' 41.064" N, 1° 53' 10.068" W, 362 m, roadside, 13-XI-2021, A. Lahora (MUB-SURESTE 116496). Huércal Overa, Las Labores, 37° 27' 41.724" N, 1° 53' 9.744" W, 417 m, roadside, 14.I.2024, A. Lahora (MUB-SURESTE 116497, HUAL 30703, MA-01-00967034).

It has been located in Huércal Overa (Figs. 3 and 4), where it forms dense linear populations along roads and adjacent crop fields. It is accompanied by *Artemisia valentina* Lam., *Atriplex halimus* L., *Cynodon dactylon* (L.) Pers., *Oloptum miliaceum* (L.) Röser & Hamasha, *Sida oppositifolia* (Desf.) Akhani, and *Zygo-phylum fabago* L. It was intentionally introduced in Murcia as a forage plant (Sánchez-Gómez *et al.*, 2018, Observation.org, 2025). In the nearby town of Almendricos (Murcia) experimental plantations were carried out (Sánchez-Gómez, pers. comm.). This is the second evidence in continental Europe (Uotila, 2011).

Sanz-Elorza *et al.* (2004: 263; 2005) advised against the use of *S. terebinthifolia* in gardens and warned about of this invasive species. Regarding *M. brevifolia*, Sánchez-Gómez *et al.* (2018) point out that its naturalization in Murcia would be the result of plantations as a fodder plant. The discovery of these two species flowering, fruiting, and propagate in disturbed and semi-natural environments confirms these predictions.



Figure 3. Location map of *Maireana brevifolia* (red circles) in Huércal Overa (Spain).

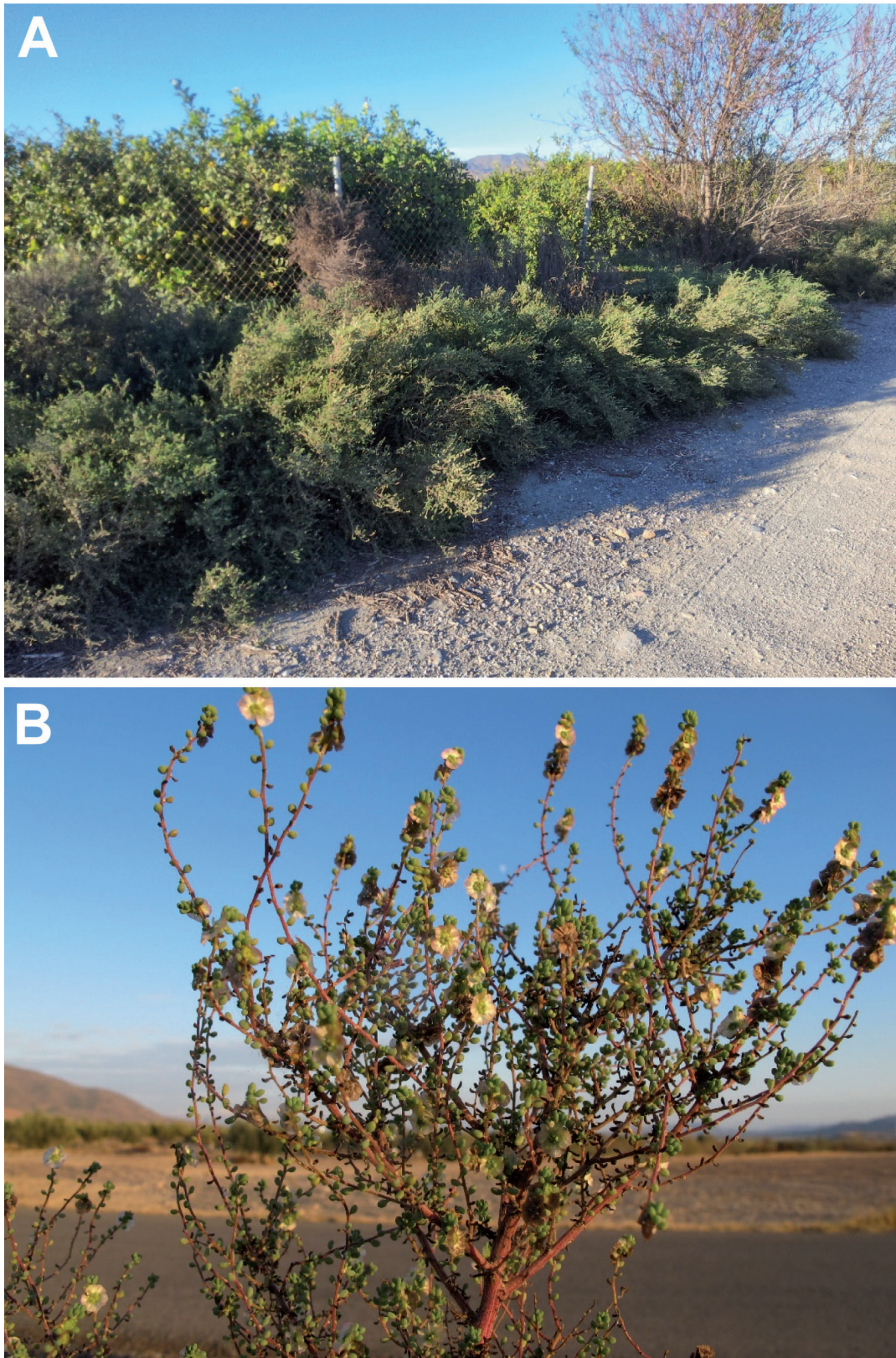


Figure 4. *Maireana brevifolia*: (A) dense linear population along road and adjacent crop field; (B), fruiting plant. Huércal Overa (Spain).

Both species are invasive plants and its inclusion in the Spanish Catalogue of Invasive Alien Species is recommended for the entirety of Spain.

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DECLARATION OF COMPETING INTEREST

The author of this article declares that he has no financial, professional or personal conflicts of interest that could have inappropriately influenced this work.

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