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Conference Abstract

Invasion dynamics and habitat preferences of *Euphorbia davidii* in Serbia

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Abstract

Euphorbia davidii Subils (toothed spurge) is an annual herbaceous plant species native to North America (USA and Mexico) that has become widely introduced across the EPPO region, Australia, and Argentina. In recent years, its phytosanitary importance within the EPPO region has increased significantly, reflected in its inclusion in the A2 List of pests recommended for regulation in 2025. In Serbia, *E. davidii* was first recorded in northern Serbia (Vojvodina Province) in 2007, occupying approximately 3 ha of arable land. By 2013, its distribution had expanded to around 7 ha, indicating an early phase of local spread. Our aim is to provide further insight into the invasion dynamics and habitat preferences of *E. davidii* in Serbia. Over the period of two consecutive years (2024-2025) area where *E. davidii* was initially recorded were observed. For each observed population of *E. davidii* phytosociological relevés were collected and habitat type was determined following the EUNIS classification. Field studies have shown that by 2024 the species had successfully established in semi-natural habitats adjacent to the original record site, particularly along field margins and country roads. Our findings show that the spread of *E. davidii* had intensified in recent years, with new populations detected at four additional field sites in 2025. The species demonstrated further expansion into semi-natural habitats, such as acacia-dominated thickets, nearby arable crops (corn and rapeseed), as well as grassland strips. Although populations in actively managed fields may be temporarily reduced by agricultural practices (e.g., plowing), its persistence and

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expansion in less disturbed habitats contribute to an overall increase in invaded area, currently reaching approximately 20 ha. Phytosociological relevés revealed variable population densities (2–50 individuals per 25 m² plot), with dense stands (>80% cover) occurring in open, dry, and sun-exposed environments. These findings confirm a clear shift from cultivated fields into surrounding habitats, including forest remnants and herbaceous vegetation strips. Three main vegetation types were identified:

1. narrow strips of acacia forests and coppices (EUNIS T1J),
2. arable crop fields (EUNIS V11), and
3. remnants of dry grassland vegetation on field edges (EUNIS R1).

Across these habitats, *E. davidii* frequently co-occurred with other invasive species, particularly *Sorghum halepense* (L.) Pers. and *Ambrosia artemisiifolia* L. Overall, the results highlight the species' ecological plasticity and its capacity to exploit both anthropogenic and semi-natural habitats, facilitating its continued spread in agricultural landscapes.

Keywords

Euphorbia davidii; toothed spurge; habitat affiliation; spread; Serbia

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Conflicts of interest

The authors have declared that no competing interests exist.