



## *Kali dodecanesicum* (Chenopodiaceae, Salsoloideae) a new species from Greece

CRISTIAN BRULLO<sup>1</sup>, SALVATORE BRULLO<sup>1\*</sup>, VINCENZO ILARDI<sup>2</sup> & GIANPIETRO GIUSSO DEL GALDO<sup>1</sup>

<sup>1</sup>Dipartimento di Scienze Biologiche, Geologiche e Ambientali, Università di Catania, via A. Longo 19, I 95125 Catania, Italy; [salvo.brullo@gmail.com](mailto:salvo.brullo@gmail.com)

<sup>2</sup>Dipartimento di Scienze della Terra e del Mare, Università di Palermo, via Archirafi 26, I 90123 Palermo, Italy

\* Corresponding author

### Abstract

*Kali dodecanesicum*, a new species from some islands (i.e. Rhodes, Kos and Nisyros) of the Dodecanese in the south-eastern Aegean (Greece), is described and illustrated. According to recent literature, *Kali* is treated as a distinct genus from the polyphyletic *Salsola* s.l., which includes several annual species. The new species is morphologically well separated from the other *Kali* taxa mainly for the shape of the fruiting perianth, showing closer relationships with *Kali ponticum*. Its ecological requirements, distribution, and conservation status are also examined, together with an analytic key of the *Kali* species occurring in the Mediterranean area.

**Key words:** Greece, Dodecanese, *Salsola*, taxonomy

### Introduction

The recent phylogenetic analyses concerning *Salsola* Linnaeus (1753: 222) s. lat. carried out by Pyankov *et al.* (2001), Kapralov *et al.* (2006), Gaskin *et al.* (2006), Akhani *et al.* (2007), Ayers *et al.* (2009), Wen *et al.* (2010), and Kadereit & Freitag (2011) clearly showed that it is a polyphyletic genus. Among the several segregated genera, *Kali* Miller (1754: without pagination) was restored by Akhani *et al.* (2007). According to several taxonomic treatments (Rilke 1999, Mosyakin 1996, 2003, Zhu *et al.* 2003, Akhani *et al.* 2007, 2014, Hrusa & Gaskin 2008, Wilson 2009, Wen *et al.* 2010, Gutermann 2011, Sukhorukov *et al.* 2011, Lomonosova 2012, Brullo *et al.* 2013, 2015), the genus *Kali* comprises annual or subshrubby (*K. griffithii*) species previously belonging to *Salsola* sect. *Kali* Dumortier (1827: 23), which are glabrous or sparsely pilose-hispid with stiff and small (one-celled) papillae, with stems rigid, not articulate, cortex green to greenish-red, with longitudinal chlorenchymatous striae, leaves without hypoderm, alternate, linear-cylindrical, broadened at base, provided with apical spine, bracts similar to the leaves, but smaller, perianth of 5 free segments, membranaceous, segments oblong, concave, stamens 5, exserted, filaments shortly connate in a basal annulus, with semicircular staminodes alternating, style single and stigma bifid, fruiting perianth usually winged, provide with unequal (sometimes rudimentary) abaxial appendices, fruits membranaceous, above flattened, seeds horizontal with embryo cochleate and perisperm lacking. Even the molecular data support the monophyly of the *Kali* clade, which forms a sister group to *Turania* Akhani & E.H. Roalson (2007: 946), and *Xylosalsola* Tzvelev (1993: 81). Currently, within this genus about 20 species are recognized (Brullo *et al.* 2015), which are chiefly distributed in Asia, Europe, Mediterranean, Australia, South Africa and North America, where they may behave as alien or weedy species. Actually, some *Kali* species are autochthonous of the sandy coasts of the Mediterranean and Atlantic European territories where they represent true psammophytes, such as *Kali turgidum* (Dumortier 1827: 23) Gutermann (2011: 98) (= *Salsola kali* Linnaeus 1753:222), *K. tragus* (Linnaeus 1756: 13) Scopoli (1772: 775), *K. ponticum* (Pallas 1803: 37) Sukhorukov *et al.* (2011: 106), while many other *Kali* are found in the Asiatic steppes and deserts, such as *K. collinum* (Pallas 1803: 34) Akhani & Roalson (in Akhani *et al.* 2007: 946), *K. jacquemontii* (Moquin in Candolle 1849: 188) Akhani & Roalson (in Akhani *et al.* 2007: 946), *K. monopterum* (Bunge 1879: 364) Lomonosova (2012: 101), *K. paulsenii* (Litvinov 1905: 28) Akhani & Roalson (in Akhani *et al.* 2007: 946), *K. praecox* (Litvinov 1902: 66) Sukhorukov *et al.* (2011: 107), etc. In addition, there are some species, such as *K. tragus* and *K. australe* (R. Brown 1810: 411) Akhani & Roalson (in Akhani *et al.* 2007: 946), which can be found in natural and ruderal habitats or