

# A NEW SPECIES OF HELICHRYSUM (ASTERACEAE, GNAPHALIEAE) FROM IRAN

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Received 2015. 12. 08; accepted for publication 2016. 04. 28

Rajaei, P. & Mozaffarian, V. 2016. 06. 30: A new species of *Helichrysum* (Asteraceae, Gnaphalieae) from Iran.- *Iran. J. Bot.*22(1): 08-10. Tehran.

A new species of *Helichrysum* (Gnaphalieae) is described and illustrated. Characteristic features of new species have been described as a unique species (typically unicephalous) and is compared with closely related species of *Helichrysum* in the world and Iran.

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**Key words:** New species; *Helichrysum*; Gnaphalieae; Kerman; Iran

یک گونه جدید از جنس *Helichrysum* قبیله **Gnaphalieae**، تیره **Asteraceae** از ایران

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یک گونه جدید از جنس *Helichrysum* قبیله **Gnaphalieae** تیره **Asteraceae** با نام *Helichrysum kermanicum* برای ایران و جهان گیاهشناسی شرح داده شده، تصویر آن ارائه گردیده است. صفات تاکزونومیک گونه مذکور به عنوان گونه ای منحصر در میان دیگر گونه های این جنس (با داشتن فقط یک کپه) در ایران شرح داده شده است.

## INTRODUCTION

The genus *Helichrysum* Mill. (Asteraceae /Gnaphalieae) is distributed throughout the African continent, Madagascar, the Mediterranean basin, Macaronesia, western and central Asia and India and comprises ca. 500-600 species, making it one of the largest genera in the Asteraceae. It includes a great diversity of life forms, from annual plants to trees, although most of the species are subshrubs or shrubs (Azizi et al. 2014a and 2014b). *Helichrysum* is a large and taxonomically difficult genus, and its circumscription has undergone notable changes, because in the Mediterranean region and western and central Asia, 41 taxa of *Helichrysum*, including subspecies, are found (Galbany Casals et al. 2009). The most recent treatments of this group recognize three sections that do not overlap and have no correspondence with the African informal groups: sect. *Stoechadina* (DC.) Gren. & Godr., sect. *Helichrysum*, and sect. *Virginea* (DC.) Gren. & Godr. Species of sect. *Stoechadina* generally have a western-central

Mediterranean distribution and consist of shrubs or subshrubs, they never have conspicuous overwintering buds, stolons, or rhizomes (Galbany Casals et al. 2009). Species of sect. *Helichrysum* and sect. *Virginea* are suffruticose and generally have leaf rosettes that often bear conspicuous overwintering buds. The morphological differences between sect. *Helichrysum* and sect. *Virginea* are as follows: species in sect. *Helichrysum* have capitula with yellow, rarely white, non radiating phyllaries that nearly equal florets in length, and the innermost phyllaries are longer than the middle ones. In contrast, species in sect. *Virginea* are distributed in the central and eastern Mediterranean regions, whereas sect. *Helichrysum* includes taxa with eastern Mediterranean and western and central Asiatic distribution (Galbany Casals et al. 2009). *Helichrysum* in Iran includes 19 perennial species of which 6 are endemic (Georgiadou & Rechinger 1980). Recently a new species reported for Iran and the number of *Helichrysum* increased to 20 (Ghahremaninejad & Noori, 2005). *Helichrysum* are distributed throughout

Iran, except in south. & north. coastal plains and more or less in the central deserts. The *Helichrysum* species mostly grow on the mountainous area with clay soil, calcareous rocks, dry slopes and steppe areas. Iranian non endemic species also grow in Europe (Balkan peninsula), Anatolia, Iraq, Transcaucasia, Caucasia, Talysh, Syria and Lebanon.

Mostly perennial, woody-caespitose herbs or suffruticose many – stemmed, with overwintering buds or not, more or less densely leafy, tomentose and glandulose. Leaves alternate, entire; capitulum in corymbose many-headed synflorescence, rarely solitary, many- flowered, homogamous, rarely heterogamous, globose to obpyramidal or cylindrical. Phyllaries pluri-seriate, imbricate, yellow, white or rarely red; receptacle flat, naked, foveolate or areolate, sometimes dentate or fimbriate. All flowers tubular, often hermaphrodite, 5-lobed, glandulose, with few female marginal ones, thin, 3-lobed. Anthers caudate. Style bifid, truncate. Cypselae cylindrical or terete. Pappus uniseriate, scabrous, acute or clavicate at tip. The most important characters of *Helichrysum* which separates it from other genera in the tribe *Gnaphalieae* are: presence or absence of resting buds; tubular glandular 5-lobed flower; naked, flat, receptacle; female marginal flowers; uniseriate pappus and caudiculate anthers.

## MATERIAL AND METHOD

During the study of plant species in Kerman province the authors have come to conclusion that the following taxon is clearly distinct from any species of *Helichrysum*, reported from Iran (Davis, 1975; Rechinger 1980; Kirpinikov, 1990; Azizi et al. 2014a and 2014b) by having single capitulum and green phyllaries. The specimens of this taxon are preserved in TARI herbarium

*Helichrysum kermanicum* Mozaff. & Rajaei sp. nov. (fig.1).

Plant perennial, suffruticose, caespitose, pale green-grayish, glandular dotted, shortly tomentose, flowering stems erect, rarely branching above, 10-40 cm high, arising from a woody erect branching rootstock. Overwintering buds present, small, basal, sessile. Basal and lower cauline leaves linear-lanceolate 15-30 mm long 2-4 mm wide; cauline leaves and below the capitulum more or less squamose; capitulum globose to obconical- hemispheric, 6-10 mm long, 6-14 mm broad, single or very rarely 1-2 on long squamulose peduncle. Phyllaries obtuse, loosely imbricate, white, narrowly green at the base 4-6 series, outer ones small oblong, inners oblong- lanceolate, to 7mm long, with broadly hyaline margins. Flowers all hermaphrodite,

tubular, 65-75; corolla yellow, 4-6 mm long, glandular at tip; pappus up to 28, more or less equal with corolla tube, scabrous at the base, connected to each other, in one series, at the base thin, at the tip more or less clavate.

The new species by having capitula with yellow, rarely white, non-radiating phyllaries that are nearly equal with the florets in length, and the innermost phyllaries which are longer than the middle ones, is close with species including in Sect. *Helichrysum* but not in Sect. *Virginea* with having capitula with radiating phyllaries that extend beyond the florets, and the middle phyllaries are longer than the innermost ones; by having white phyllaries, it is more or less close to *H. makranicum* (Rech.f. & Esfand.) Rech.f. but differ from it by having overwintering buds (non absence of overwintering buds) and with having more or less obconical capitulum with white, greenish at base phyllaries similar to *H. artemisioides* Boiss. & Hausskn. and *H. davisianum* Rech.f. but differ with them by having unicephalous inflorescence (non subcornybose to capitate-subumbellate). The new species also in terms of habit and morphological characters, is more or less a distinct species and separate from all species previously introduced in Flora Iranica, Flora of Turkey and Flora of the USSR.

Typus: Kerman, E. slope of Kuhe Palvar from Jushan Village. 3450m, a.s.l., 7.8.2013. P. Rajaei, 101990, TARI.

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Fig. 1. *Helichrysum kermanicum* Mozaff. & Rajaei; A. Habit; B. Achene, papus and corolla.