CHENOPODIUM BADACHSCHANICUM
(AMARANTHACEAE), A NEW RECORD FOR IRAN

MARYAM KESHAVARZI 1*, SAMANEH MOSAFERI 1,2**, HABIBOLLAH IJBARI 3*, FARZANEH EBRAMI 1***, MOJDEH KHAJEH 1**

Abstract. Chenopodium badachschanicum Tzvelev is recorded for the first time for the flora of Iran. The species has been collected from Hamoon lake basin in South East of Iran. Characteristics, exact localities, habitat and geographical distribution are explained.

Key words: Amaranthaceae, Chenopodium badachschanicum, new record, Iran

1 Plant Science Department, Faculty of Biological Sciences, Alzahra University, North Sheikh Bahae str., Vanak, 1993893973 Tehran, Iran; * neshat112000@yahoo.com; ** samanehmosaferi@yahoo.com; *** fa_ebrahi87@yahoo.com; 6 mojdehkhajeh1370@gmail.com
2 Plant Science Department, Faculty of Biological Sciences, Shahid Beheshti University, Daneshjoo blr., Evin, 1983969411 Tehran, Iran
3 Department of Biology, Faculty of Science, University of Zabol, Bonjar ave., 7383198616 Zabol, Iran; ** h.ijbari@yahoo.com

Introduction

Chenopodium L. comprises about 150 annuals and perennials in the world (Fuentes-Bazan et al. 2012), out of which at least 15 species occur in Iran (Uotila 1997; Assadi 2001). Due to phenotypic plasticity, polyploidy and hybridization, taxonomy of Chenopodium always was a problematic task (Cole 1961; Rahiminejad & Gornall 2004; Kurashige & Agrawal 2005; Zhou et al. 2005). Among this genus, two controversial taxa, i.e. C. album L. aggregate and C. hybridum L. aggregate, comprise different species, subspecies, varieties and forms (Jüttersonke & Ablt 1989; Dvořák 1990, 1992; Zhu et al. 2003).

C. hybridum agg. is described in Flora of China as two species or subspecies (Zhu et al. 2003). Although C. badachschanicum Tzvelev was reported for Central Asia by Tzvelev (1960), in Eastern Asia it was not known before this time (Zhu et al. 2003). Several new species of genus Chenopodium have been recorded in recent years from Iran (Rahiminejad et al. 2004; Rahiminejad & Ghaemmaghami 2005), confirming that this genus here is represented by more species than it was suggested before (Uotila 1997). During field investigation in Sistan and Baluchestan provinces at Hamoon Lake district (south east of Iran), an interesting Chenopodium specimen was collected. Identification of the specimen was done in the herbarium of Alzahra University (ALUH), and as a result C. badachschanicum is reported for the first time for the flora of Iran.

Results

Chenopodium badachschanicum

**Description.** Sparsely farinose to sub-glabrous annual, stem to 30 cm, yellowish-green, erect, angular, branched, lower branches sub-opposite. Petiole usually c. 1/3 of the length of leaf blade, blade thin, 3-8(-15) cm, lanceolate, with outward-projecting acute basal lobes and 0-2 lobe-like acute teeth on both sides, otherwise entire, apex acute to acuminate, base sub-truncate to slightly cordate, bracts narrowly triangular, hastate, entire, uppermost lanceolate. Inflorescence narrow, lax, mostly leafless, terminal and axillary, cymose -dichasial, branches divaricate, solitary or several loosely together. Perianth segments S, connate to below the middle, partly spreading in fruit, with a strong midrib visible especially inside, back apically keeled. Stamens S. Stigmas 2-3. Part of fruits falling with perianth. Pericarp persisting. Seeds horizontal, black, (1.2-)1.4-1.6(-2.0) mm in diameter, round in outline, margin somewhat acute, testa with large, irregular but mostly radially elongated pits, radial furrows and other rugosities, sometimes almost smooth (Figs 1-3).

**Flowering and fruiting.** June – September.

**Studied population.** IRAN: Sistan & Baluchestan, 7 km south of Hirmand, Barahoii village (ALH – ha105).

**General distribution.** C Asia, NE Afghanistan, N Pakistan, N India, China, Nepal.

**Notes.** *C. badachschanicum* is an element of the *C. hybridum* aggregate. This is a tiny annual species. Type specimen was not available; there
Fig. 2. General view of collected *Chenopodium badachschanicum*. 
was only description of the species from the Flora of Pakistan (Perveen & Qaiser 2012). Details of its description were compared with available references (Freitag et al. 2001). According to the descriptions given in Flora of Pakistan, the specimen was identified as C. badachschanicum. To be sure about the species identification, micro-morphology of the pollen grains was studied (Fig. 4).

This species is sympatric with C. murale L. which shows great morphological variability in different localities of Iran, so their pollen grains were compared. In particular, exine thickness in studied C. badachschanicum (2.52 µm) was in concordant with Perveen & Qaiser (2012) measurements for Pakistan.

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References


Fig. 4. Pollen grains of Chenopodium murale (A, C) and C. badachschanicum (B, D).


