

A NEW RECORD AND A NEW SPECIES OF THE GENUS *POA* L. (POACEAE) FROM IRAN

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Poa damavandica Assadi & Kavousi is described as a new species from Iran based on a specimen has been collected from high altitudes of Damavand Mountain. It belongs to the section *Stenopoa* subsection *Stenopoa*. The new species is compared with *Poa araratica*, *P. sterilis*, *P. stepposa* and *P. rangkulensis* as close affinities. Moreover, *Poa glauca* is reported as a new record from Iran collected from Mazandaran province.

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یک گزارش و یک گونه جدید از جنس *Poa* L. (*Poaceae*) برای فلور ایران

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گونه *Poa damavandica* به عنوان گونه‌ای جدید از *Stenopoa* subsect. *Stenopoa* معرفی می‌شود. این گونه که از ارتفاعات دماوند جمع‌آوری شده است، دارای ویژگی‌های منحصر به فردی است که آن را از گونه‌هایی مثل *P. araratica* و *P. sterilis* که در ایران موجودند و همچنین *P. stepposa* و *P. rangkulensis* جدا می‌کند. نزدیکترین گونه‌ها به این تاکسون، *P. stepposa* از اروپا، آسیای مرکزی، سیبری، مغولستان و *P. rangkulensis* از شرق پامیر و بخش غربی هیمالیا می‌باشد. در این مقاله، صفات این دو و گونه جدید مورد مقایسه قرار می‌گیرد. لازم به ذکر است، فلورا ایرانیکا گونه *P. sterilis* را از ایران گزارش داده که این مطلب در فلورهای بعدی مورد تردید قرار گرفته است. علیرغم این موضوع، نمونه‌های بسیار خوبی از تاکسون مذکور در بین نمونه‌های جمع‌آوری شده و هرباریومی وجود دارد. همچنین، گونه *P. glauca* که از استان مازندران جمع‌آوری شده است، برای اولین بار از ایران گزارش می‌شود.

Introduction

In a taxonomic study of the genus *Poa* L. in Iran, about 300 specimens of non-bulbous group, in Research Institute of Forests and Rangelands Herbarium (TARI) were considered and identified. Moreover, excursions were made to Azerbaijan, Gilan and Tehran provinces to study and collect plant materials. According to Flora Iranica (Bor 1970) 13 species of the genus *Poa* occur in Iran. In Flora of neighboring countries number of Iranian records varies, for example, Flora of Turkey 11 (Edmondson 1985), Flora of Iraq 6 (Townsend 1980), Flora of the USSR 5 (Rozhevits 1934) and Grasses of the Soviet Union 15 (Tzvelev 1976). In this paper a new species is described from Iran. Also, *Poa glauca* formerly not known from Iran is reported as a new record for Iran.

Results and discussions

New species

Poa damavandica Assadi & Kavousi, sp. nov.

Planta perennis, dense caespitosa, radicibus brevibus fibrosis. Surculi steriles numerosi, dense scabri, foliis distichis velati. Caules 25 cm alti, foliorum veterum vestigiis purpurascensibus ad basin praediti, numerosi, saepe geniculate ascendentes, pro parte majore glabri sed infra paniculam sparsim scabri, glauci, a basi per duos longitudinis trientes foliorum caulinarum vaginis clausi; nodi e vaginis non exserti. Folia plicata vel involuta, ad apicem obtusum cucullatum gradatim attenuata, per longitudinem scabra, manifeste porcata; folia basalia 2.1–3.5 cm longa, 1.1–2 mm lata, ligulam 0.8 mm longam, rotundatam, secus vaginae margines

breviter decurrentem, glabram ferentia; folia caulina summa 4.8–7.2 cm longum, 0.5–0.8 mm latum, 6.6–7.7 cm longa, 1–1.3 mm lata, vagina tereti; folium



Fig. 1. *Poa damavandica* ($\times 0.7$); spikelets and ligule ($\times 8$); flowers ($\times 14$) and glumes ($\times 7$).Table 1. Comparison of *Poa damavandica* with *P. araratica* and *P. sterilis*.

	Rhizome	Leaf apex	Basal, stem and flag leaf (L×W) mm	Non-flowering shoots	Ligule in uppermost leaf	Uppermost node	Rachilla
<i>P. damavandica</i>	none	blunt	20.5-35×1.1-2 66-77×1-1.3 48-72×0.5-0.8	+	2.8 mm, elongated with rounded tip	Not evident and under the leaf sheath	smooth
<i>P. sterilis</i>	thin	acute	18-67×1-2 19-92×0.8-2 21-93×0.8-2	-	Up to 2 mm, truncate	Usually in the middle $\frac{1}{3}$	Papilose to very pilose
<i>P. araratica</i>	thick	acute	5-53×0.6-2 31-107×0.8-1.8 26-88×0.5-1.6	-	Up to 2 mm, truncate, acute or obtuse	In basal $\frac{1}{3}$	Papilose to pilose

ligulam 2–2.8 mm longam, ad apicem rotundatum elongatam, ferens. Panicula 5–9.1 cm longa, 0.6–1.1 mm lata, anguste oblonga, contracta, nodis distinctis, spiculas 15–55 praebens; rami inferiores 2–3, 1.9–3.9 cm longi; ramus summus singularis, circa 3 mm longus. Spiculae circa 6 mm longae, ovatae vel cuneatae, floribus 4 laxis; gluma inferior circa 3 mm longa, elliptica, margine lato membranaceo, acuta, 3-nervata; gluma superior circa 3.5 mm longa, late ovata, margine lato membranaceo, acuta, 3-nervata; lemma infima 3.2–3.5 mm longa, elliptica, colore flavo purpureoque variegata, obtusa, obscure nervata, in carinae dimidio inferiore et in nervorum marginalium parte tertia infima sparsim ciliata, inter nervos inque nervis lateralibus glabra; rachilla glabra, ad basin sparse lanata; palea circa 2.7 mm longa, carinis in tertia parte infima glabris, supra hanc ciliatis, ad apicem scabris. Antherae 1.1 mm longae, flavae, ad apicem purpureosuffusae.

Tehran: South slope of Kuh-e Damavand (XV1), 3700-4350 m, 22.07.2003, M. Assadi & S. M. M. Hamdi 85739 (holotypus TARI).

Densely tufted perennial, with short fibrous roots. Non-flowering shoots numerous, densely scabrid distichously leafy. Stems 25 cm high, with purplish remnants of old leaves at the base, numerous, often geniculately ascending, mainly glabrous but sparsely scabrid below the panicle, glaucous, for $\frac{2}{3}$ of their length from the base enclosed by the leaf-sheaths of the cauline leaves; nodes not exerted from leaf-sheaths. Leaves folded or involute, gradually tapering to a blunt hooded tip, scabrid throughout their length, distinctly ridged; basal leaves 2.1–3.5 cm long, 1.1–2 mm wide, with ligule 0.8 mm long, rounded, shortly decurrent along the sheath margins, glabrous; stem leaves 6.6–7.7 cm long, 1–1.3 mm wide, leaf-sheaths terete;

uppermost leaf 4.8–7.2 cm long, 0.5–0.8 mm wide; ligule 2–2.8 mm long, elongated with a rounded tip. Panicle 5–9.1 cm long, 0.6–1.1 mm wide, narrowly oblong, contracted, with distinct nodes, with 15–55 spikelets; lower branches 2–3 in number, 1.9–3.9 cm long; uppermost branch single, c. 3 mm long. Spikelets ca. 6 mm long, ovate or wedge-shape, with 4 uncontracted flowers; lower glume c. 3 mm long, elliptic, with a wide hyaline margin, acute, 3-veined; upper glume ca. 3.5 mm long, broadly ovate, with a wide hyaline margin, acute, 3-veined; lowest lemma 3.2–3.5 mm long, elliptic, variegated with yellow and purple, with a blunt tip, obscurely nerved, sparsely ciliate on the lower half of the keel and lowest third of the marginal nerves, glabrous between the internerves and on the lateral nerves; rachilla glabrous, sparsely woolly at the base. Palea c. 2.7 mm long, with keels glabrous in the lowest third, ciliate above this and scabrous towards the apex. Anthers 1.1 mm long, yellow tinged with purple at the tips.

This species belongs to sect. *Stenopoa* Dum. subsect. *Stenopoa*. It seems that the closest species to the new species is *P. stepposa* (Kryl.) Roshev. The differences between the two species are as follows:

a- The absence of compact vegetative shoots in *P. stepposa* and the presence of very numerous shoots in *P. damavandica*.

b- Nodes are exerted from leaf-sheaths in the former and not exerted in the latter.

c- Stems below the nodes with directly upward hairs in the first one and there is no nodes along the stem in the second one.

d- Stems rather strongly pubescent in the former and they are in the leaf-sheaths in the latter.

e- Stems are almost completely leafless in the upper part in the former and leafy in the latter.

f- All leaves 0.5–1.25 mm wide in the first one and basal leaves 1.1–2 mm wide in the second one.

P. rangkulensis Ovcz. & Czuk. another relative is quite different from *P. damavandica* by having lemma densely short-pilose in lower part in between the veins. Among the Iranian species *P. sterilis* M. B. and *P. araratica* Trautv. are similar to the new species, therefore they are compared in table 1.

New record

Poa glauca Vahl.

Mazandaran: south of Ramsar, between Bagh e-dasht and Lapasar, 2900 m, 12.08.1973, Runemark & Maassoumi 21748. -Teheran: Karaj valley, Dizin, 3300 m, 15.08.1974, Wendelbo & Cobham 14030 (TARI).

Tufted perennial, with remnants of old sheath-leaves. Stems about 30 cm high, erect, numerous, smooth, glabrous below the panicle, about 1/2 of their length from the base closed by leaf-sheaths of stem leaves, in upper part leafless, glaucous; nodes not exerted from leaf-sheaths. Leaves flat, gradually tapering to a blunt apex, glabrous, with scabrous main vein at the apex, auriculate; basal leaves 2.5- 3.7 cm long, 1- 1.2 mm wide; ligule 0.4 mm long, truncate with a dentate margin; stem leaves 5.9- 6.5 cm long, 1- 1.5 mm wide; uppermost leaf 3.9-8.6 cm long, 0.9-1.5 mm wide; ligule 2.1 mm long, truncate with a dentate margin. Panicle 3.4-4.9 cm long, 6-14 mm wide, oblong elliptic, somewhat open, contracted, with about 30 spikelets; lower branches 3 in number, 8- 17 mm long; uppermost branch single, 13- 14.5 mm long. Spikelets ca. 4.2 mm long, wedge-shaped, with 2 or 3 contracted-flowers; lower glume ca. 3 mm long, lanceolate, with a wide yellow margin, acute, nearly smooth, 3-veined; upper glume ca. 3.2 mm long, ovate, with a wide yellow margin, acute, nearly smooth, 3-veined. The lowest lemma ca. 3.5 mm long, ovate, with a narrow margin, with a blunt tip, obscurely 5-nerved, on the lower 3/4 of the keel and 1/3 of the marginal nerves ciliate, smooth on the internerves and middle nerves; rachilla long, with 2 or 3 long hairs, drooped on

rachilla, with sparse wool on the base. Palea ca. 3.2 mm long; keels glabrous at 1/2 of the lower base, scabrid above the lower base; pilose between two keels; anthers 1.5 mm long, seeds ca. 2.3 mm long, wide ellipsoid.

According to Tzvelev (1976 & 2000) in Flora of Russica and Edmondson (1980) in Flora Europaea, this taxon is distributed in Caucasus, Western Siberia, Eastern Siberia, Far East; Scandinavia; Atlantic Europe; North America. Caucasus is the nearest locality to Iran.

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