

# TOW NEW TAXA OF AGROPYRON CRISTATUM (POACEAE), FOR THE FLORA OF IRAN

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*Agropyron cristatum* subsp. *pectinatum* var. *minor* & *Agropyron cristatum* subsp. *hamadanicum* are described as new taxa from West of Iran. The new variety, var. *minor* differs from var. *pectinatum* by having shorter height, fine spike and shorter glume and lemma. The new subspecies subsp. *hamadanicum* also differs from *Agropyron cristatum* subsp. *incanum* & *Agropyron cristatum* subsp. *pectinatum* by having shorter height, long fibrous roots, and longer spike, spikelete, glume and lemma.

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دو واحد جدید از گونه *Agropyron cristatum* (L.) Gaertner برای فلور ایران

در بازنگری جنس *Agropyron* Gaertner در ایران، که بر اساس مطالعه نمونه های هرباریومی و جمع آوریهای جدید و مشاهدات صحرائی صورت گرفت، یک واریته جدید (*Agropyron cristatum* subsp. *pectinatum* var. *minor*) و یک زیر گونه جدید (*Agropyron cristatum* subsp. *hamadanicum*) از غرب ایوان (همدان)، معرفی می شود. واریته جدید با داشتن ساقه های کوتاهتر، سنبله ظریف و گلوم و لمای کوتاهتر، از *Agropyron cristatum* subsp. *pectinatum* var. *pectinatum* متفاوت است. زیر گونه جدید نیز با داشتن ساقه های کوتاهتر، ریشه های بلند و نازک، سنبله و همچنین سنبلک، گلوم و لمای بلندتر از *Agropyron cristatum* subsp. *incanum* و *Agropyron cristatum* subsp. *pectinatum* متفاوت است.

## Introduction

The genus *Agropyron* Gaertner has been subject of studies by the author in Iran. The studies have been based on numerous herbarium specimens and field observations. In this paper, a new variety and a new subspecies are described for the flora of Iran.

## New Taxa

**A. cristatum** (L.) Gaertner subsp. **pectinatum** (M. Bieb.) Tzvelev var. **minor** Yousofi, var. **nov.** (Fig. 1).

Gramen perenne, caespitosum, sine rhizomatibus. Culmi graciles, usque ad 30-35 cm alti, erecti vel geniculato-ascendentes. Foliorum laminae usque ad 4-7 cm longae, 1-3 mm latae, lineari-acuminatae, ± involutae, supra pilosae, subtus leaves glabraeque. Spicae densae, oblongo-ovatae vel lineares, 2-3.5 cm longae, 5-10 mm latae; rhachidum internodia 0.5-0.75 mm longa. Spiculae 9-10 mm longae, 4-6 florae;

glumae inequales, 3-3.5 mm longae, carinatae, margine lati-membranaceae, glabrae, in aristam usque ad 2-2.3 mm longam productae; lemma 5-6 mm longum, glabrum, in aristam 2-3 mm longam attenuatum.

*Typus.* Hamadan, 5Km Asadabad, Rahdarkhaneh, Galehbor region, 2250 – 2300 m, 26.5.2001, Yousofi: (holotypus, TARI).

Differt a var. *pectinatum* culmio, spicae, glumis et lemmatibus omnino minutis.

Perennial, caespitose, non-rhizomatous or with short rhizomes, ca. 30-35 cm high. Culms thin, erect or geniculately ascending. Leaf blades 4-7 cm long, 1-3 mm broad, linear-acuminate, convolute or flat, puberulous above, glabrous beneath. Spike dense, oblong, ovate or linear, 2-3.5 cm long, 5-10 mm wide; rachis internodes short, 0.5-0.75 mm long. Spikelets 9-10 mm long, 4-6 flowered; glumes unequal, glabrous, ± broadly membranous at the margin, awned; awn up to

2-2.3 mm long; lemma 5-6 mm long, glabrous, awned; awn up to 2-3 mm long.

The new variety differs from *Agropyron cristatum* var. *pectinatum* in height, form of culms, length of rachis internodes and fine spikes. In the new variety, rachis internode is 0.5-0.75 mm long, and spike is 2-3.5 cm long and 5-10 mm wide. The height of plant is also up to 35 cm, while in *Agropyron cristatum* var. *pectinatum*, the height of plant reaches up to 75 cm. This variety differs from *Agropyron cristatum* var. *imbricatum* (Roemer & Schultes) G. Beck in glabrous glumes and lemma. In *Agropyron cristatum* var. *imbricatum* spikelets are sparsely pilose.

**Agropyron cristatum** (L.) Gaertner subsp. **hamadanicum** Yousofi **subsp. nov.** (Fig. 2).

Gramen perenne, caespitosum, rhachidibus multifibrosis. Culmi graciles, usque ad 30 cm alti, basi  $\pm$ incrassati,  $\pm$ puberuli. Foliorum laminae usque ad 8-10 cm longae, 1.5-2 mm latae, lineari-acuminatae, leviter involutae, utrinque  $\pm$ brevissime pilosae. Spicae  $\pm$ densae, ambito oblongae vel ovatae, 2.5-4.5 cm longae, 15-20 mm latae; internodia 1.2-1.5 mm longa. Spiculae 12-14 mm longae, 4-5 floriae; glumae inequales, 3-4 mm longae, dorso glabrae leavesque, in aristam usque ad 8-10 mm longam attenuatae; lemma 6-8 mm longum, in aristam 5-7 mm longam productum.

*Typus.* Tehran, Tafresh, top of the mountain Noghreh-Kamar, on the road to Ashtian (UV2), 2200-2400m, 16.6.1984, V. Mozaffarian & A. A. Maassoumi 48148 (holotypus TARI). -*Paratypus.* Hamadan, 100 Km N. Aq- Bolaq- Aq- Daque village, Aq-Daque mountain, 2050-2350 m, 23.6.1993, Safikhani, Kalvandi, and Farmarzi, 2818; 100Km N. above Orteh-Gomish village, right side, Bughati high lands, 2200-2490 m, 14.7.1997, Safikhani, Kalvandi and Rhazaghi, 3041; Kabudar Ahang, Dagh-Daghabad, Gholiabad, Kuhe-Gholiabad, 1800-2100 m, 4.6.1988, V. Mozaffarian, 64501.

Perennial, caespitose, with numerous fibrous roots, ca. 30 cm high. Culms thin, thickened at the base,  $\pm$ puberulous. Leaf blades narrow, 8-10 cm long, 1.5-2 mm broad, linear-acuminate, convolute or flat, hairy on both sides. Spike  $\pm$ dense, oblong or ovate, 4-5 cm long, 15-20 mm wide; rachis internodes 1.2-1.5 mm long. Spikeletes 12-14 mm long, 4-5 flowered; glumes unequal, 3-4 mm long, glabrous, awned; awn up to 8-10 mm long; lemma 6-8 mm long, awned; awn up to 5-7 mm long.

The new subspecies is characterized by having numerous fibrous roots, and relatively, large awn on glumes and lemmas. Internode of rachis in the new subspecies is 1.2-1.5 mm long, awn of glume is 8-10 mm long and awn of lemma 5-7 mm long. *Agropyron cristatum* subsp. *hamadanicum* differs from *Agropyron cristatum* subsp. *incanum* (Nab.) Melderis and *Agropyron cristatum* subsp. *puberulum* (Boiss. ex Steud.) Tzvelev, by having glabrous spikeletes, and differs from *Agropyron cristatum* subsp. *pectinatum* by having large spike and spikelete, and longer awns on the glumes and lemma.

The new subspecies is restricted to Hamadan and Markazi provinces, that is distinct from the distributin area of the other subspecies of *Agropyron cristatum* in Iran. (Assadi 1995; Bor 1970; Dewey & Asay 1975).

## References

- Assadi, M. 1995: Meiotic configuration and chromosome number in some Iranian species of *Elymus* L. and *Agropyron* Gaertner (Poaceae). *Botanical Journal of Linnean Society*. 117 (2): 159-168.
- Bor, N. L., 1970: Gramineae, in Rechinger, K. H. (ed.) *Flora Iranica*, no. 70. -Akademische Druck-u, Verlagsanstalt, Graz, Austria.
- Dewey, D. R., and Asay, K. H., 1975: The crested wheatgrasses of Iran. -*Crop Science*, 15: 844-849.

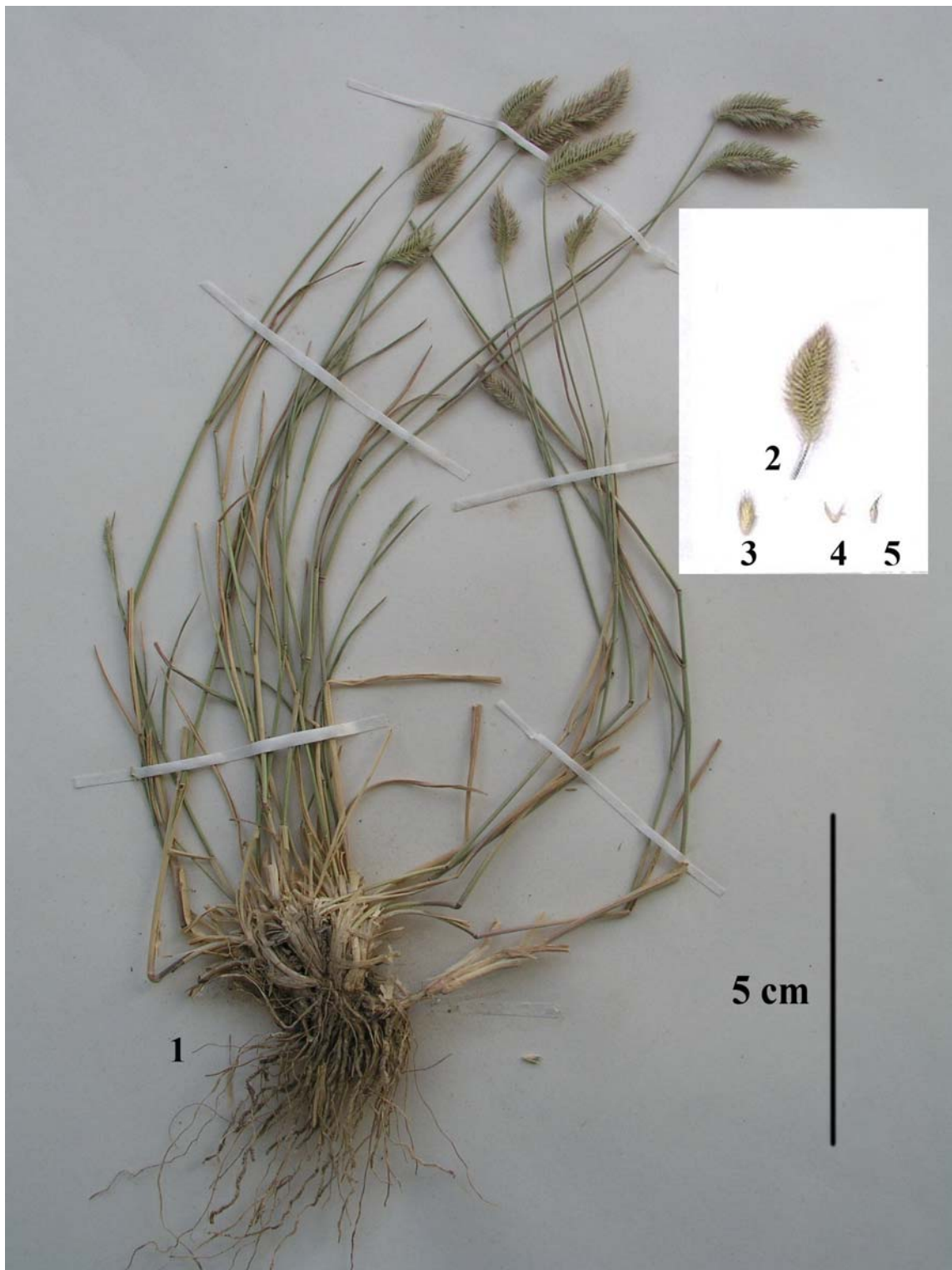


Fig.1: *A. cristatum* subsp. *pectinatum* var. *minor*; 1.habit, 2.inflorescence, 3.spikelete, 4.glumes, 5.lemma.

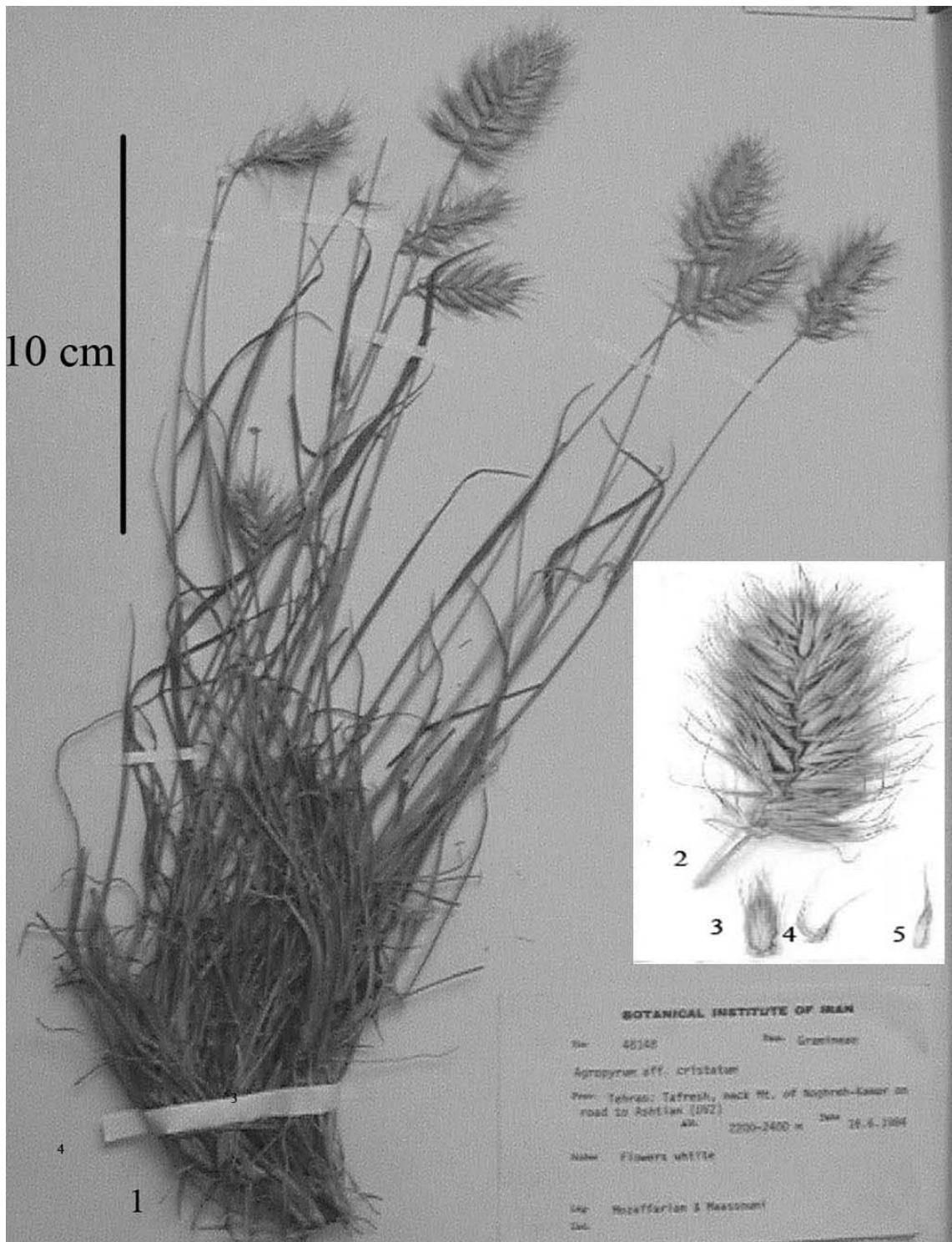


Fig.2. *Agropyron cristatum* subsp. *hamadanicum*; 1.habit, 2. inflorescence, 3. spikelete, 4.glumes, 5. lemma.