

Salvatore Brullo & Riccardo Guarino

***Festuca humifusa* (Gramineae), a new species from Sicily**

Abstract

Brullo S. & Guarino R.: *Festuca humifusa* (Gramineae), a new species from Sicily. – *Bocconea* 10: 409-412. 2001. – ISSN 1120-4060.

Festuca humifusa, a new species from Cape Tyndaris (NE-Sicily) is described and illustrated. Its ecology, distribution and relationships with the allied species are discussed.

Introduction

During field studies in Sicily, a very distinctive population of *Festuca*, occurring in the coastal Cape of Tyndaris (NE Sicily), was found. According to literature, (Markgraf-Dannenbergh 1980, 1982, Kerguelen & Plonka 1989, Foggi & Rossi 1996), the collected specimens show a close relation with *Festuca circummediterranea* Patzke, which has a widely Mediterranean distribution and occurs in the above-mentioned locality too.

The presence in the same site of two well-distinguished *Festuca* rose their taxonomical study. Indeed apart from the prostrate vegetative shoots with softish leaves, the specimens in question differ from *F. circummediterranea* also by morphological and anatomical characters, which let them to be treated as belonging to a new distinct species.

Materials and methods

All plants of the new species were collected at Cape Tyndaris, while those of *F. circummediterranea*, used for the comparison, come from the *locus classicus* Mt. Pizzuta, near Palermo. The observations were made on living material, cultivated in the Botanical Garden of Catania, and on herbarium specimens. For the karyological investigation, root tips were pre-treated with 0.3 % colchicine, fixed in Carnoy and stained according to the Feulgen technique. The leaf anatomy was studied on untreated material recorded under light microscope.

***Festuca humifusa* Brullo & Guarino, sp. nova.** - Typus: Sicily, Capo Tindari (ME) presso Marinello, su rupi calcaree, 16. Jul. 1997, *Brullo & Guarino s.n.* (Holotypus: CAT; isotypi: CAT, FI). - Fig. 1.

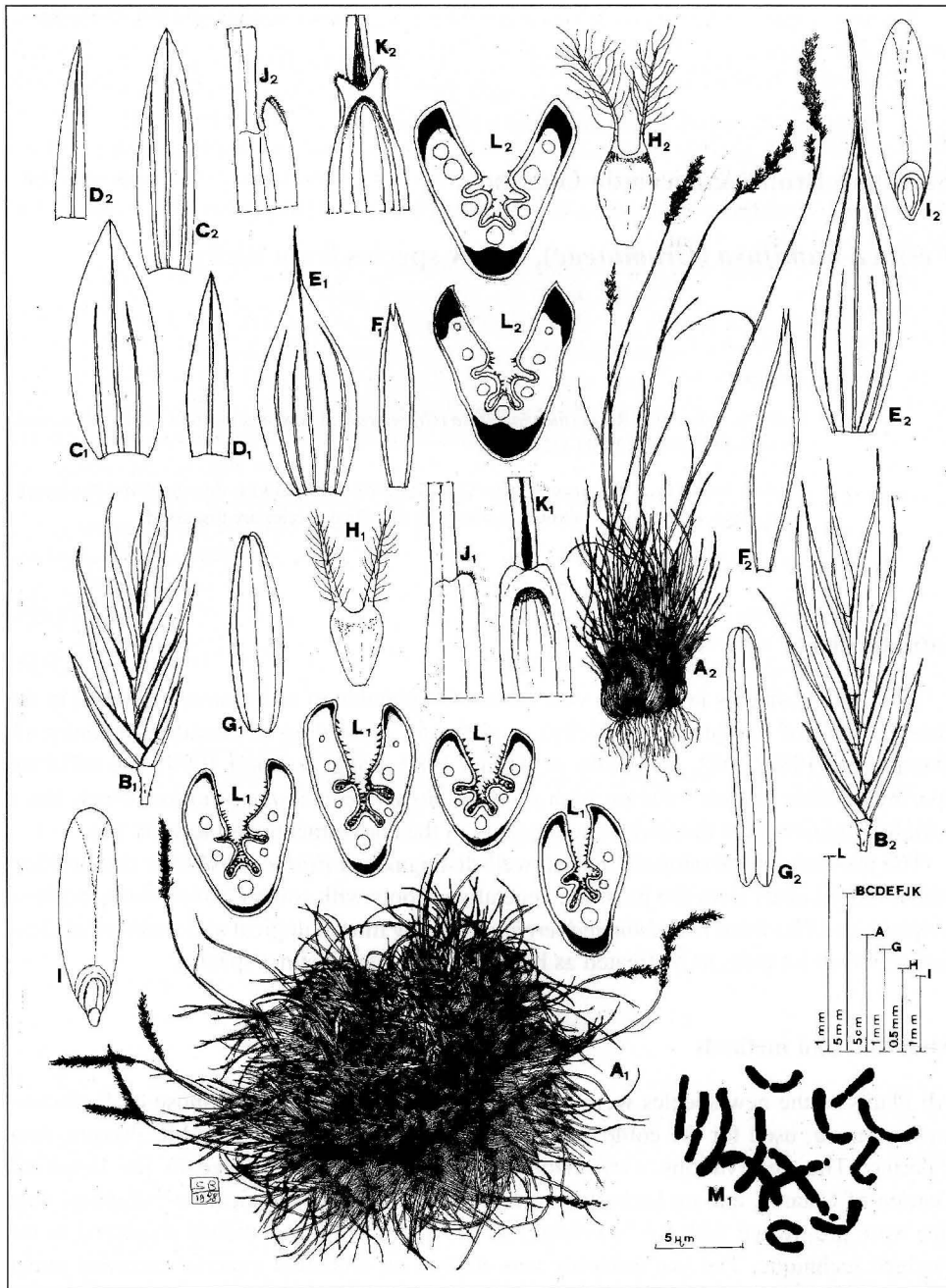


Fig. 1. *Festuca humifusa* (1) and *Festuca circummediterranea* (2). – A, habit; B, spikelet; C, lower glume; D, upper glume; E, lemma; F, palea; G, anther; H, pistil; I, caryopside; J, lateral view of the leaf sheath; K, frontal view of the leaf sheath; L, transversal section of the leaf blade; M, chromosome complement ($2n=14$).

Festuca circummediterranea affinis sed habitu decumbenti, scapis prostrato-ascendentibus, foliis glaucis, dense pilosis in pagina adaxiali, in sectione transversali brachio 0.6-0.8 mm longo, fascibus vascularibus 5-7, filis sclerenchymatis tenuioribus, vaginis coalitis per 1/2 longitudinis, truncato-rotundatis auriculis, panícula brevior compactioreque, gluma inferiore 0.75 mm lata, gluma superiore 1.5 mm lata, lemmate 3.5-4 mm longò, arista 0.8-1 mm longa, palea $3.3.2 \times 0.5-0.6$ mm longa, dentibus apicalibus 0.25 mm longis, anthera 1.8-2 mm longa, stigmatibus 0.6-0.7 mm longis, ciliorum breviorum praeditis, caryopside 3 mm longa.

Plant densely caespitose, with intravaginal decumbent tillers. Flowering stems prostrate-ascending, smooth, 8-20 (25) cm long. Leaf sheath glabrous, hyaline at the margin, fused for 1/2 of its length, with auricles truncate-rounded, minutely ciliated at the margin. Ligula inconspicuous. Leaf blade conduplicate, lank, glaucous, acute, more or less recurved, glabrous on the abaxial surface and densely hairy on the adaxial one, (5) 7-18 (24) cm long, in transversal section U-shaped with arms 0.6-0.8 mm long, 5-7 vascular bundles, 3 thin sclerenchyma strands. Panicle 2.5-6 cm long, compact, linear, sometimes interrupted below. Spikelets 6-7.5 mm long, with 5-6 florets and pedicels c. 1 mm long. Lower glume subulate-lanceolate, $3.3.2 \times 0.75$ mm, 1-veined. Upper glume ovate-lanceolate, 4×1.5 mm, 3-veined. Lemma ovate, $3.5-4 \times 1.5-1.7$ mm, 5-veined, the central vein reaching the tip, the lateral ones vanishing upwards, with awn 0.8-1 mm long. Palea linear-elliptical, $3.3.2 \times 0.5$ mm, bifid at the apex with teeth 0.25 mm long. Anther $1.8-2 \times 0.4$ mm. Ovary obovate, 0.5 mm long. Stigmas 0.6-0.7 mm long, with cilia 0.1-0.2 mm long. Caryopsis 3 mm long. Somatic chromosome number is $2n = 14$.

Specimina visa. - Sicily, Promontorio di Tindari (Me) presso il Santuario, su rupi calcaree, 28-Apr.-1997, Bacchetta, Brullo & Guarino (CAT); Capo Tindari (ME) presso Marinello, su rupi calcaree, 16. Jul.1997, Brullo & Guarino s.n. (CAT, FI).

Ecology and distribution. - *F. humifusa* grows on lithosoils derived from mesozoic marbles and calcium-silicate feldspars, in windy rocky ridges close to the sea, at an altitude of 5-270 m. Flowering occurs in the period between late April and early June. The plant is a member of a xerophyllous discontinuous grassland linked to semi-ruprestrian habitats. This vegetation, belonging to the class *Thero-Brachypodietea ramosi* Br.-Bl. ex A & O. Bolòs 1950 (= *Lygeo-Stipetea* Rivas-Martínez 1978), is physiognomically characterized by several hemicryptophytes and chamaephytes, such as *Hyparrhenia hirta*, *Andropogon distachyus*, *Ampelodesmos mauritanicus*, *Micromeria fruticulosa*, *Micromeria graeca*, *Phagnalon saxatile*, *Hyoseris radiata*, *Dactylis hispanica*, *Bituminaria bituminosa*, *Galium aetnium*, *Centaurea todari* f. *seguenzae*, etc.

Taxonomic relationships. - *Festuca humifusa* is closely allied to *F. circummediterranea* Patzke and *F. jeanpertia* (St-Yves) Markgraf subsp. *campana* (N. Terrac.) Markgr.-Dannenb. in having vegetative tillers intravaginal, ligula inconspicuous and leaf sheaths ending with 2 lateral auricles, leaf-blades smooth, normally flabby, conduplicate, 3 sclerenchyma strands in correspondence with the midrib and the leaf edge, 3 adaxial hairy ribs, linear panicle. In particular *F. humifusa* differs from the former by having decumbent tillers, prostrate-ascending flowering stems, leaf sheath fused up to 1/2 of its length with truncate-rounded auricles, leaf blade glaucous, densely hairy on the adaxial surface, in transversal section with arms 0.6-0.8 mm long, 5-7 vascular bundles, 3 thin sclerenchyma

strands, panicles 2.5-6 cm long, lower glume subulate-lanceolate, 0.75 mm wide, upper glume ovate-lanceolate, 1.5-1.7 mm wide, lemma ovate, 3.5-4 mm long, the middle vein reaching the tip, the lateral ones vanishing upwards, with awn 0.8-1 mm long, palea linear-elliptical, $3-3.2 \times 0.5-0.6$ mm, with apical teeth 0.25 mm long, anther 1.8-2 mm long, ovary obovate, stigmas 0.6-0.7 mm long, with cilia 0.1-0.2 mm long, caryopsis 3 mm long, while *F. circummediterranea* shows erect or erect-ascending tillers, erect flowering stems, leaf sheath fused up to 1/2-2/3 of its length with conspicuously sagittate-auriculate auricles, leaf blade pruinose green, sparsely hairy on the adaxial surface, in transversal section with arms 0.9-1.2 mm long, 7 (9) vascular bundles, 3 very stout sclerenchyma strands, panicles up to 9 cm long, lower glume subulate, 0.5 mm wide, upper glume linear-lanceolate, 1-1.2 mm wide, lemma lanceolate, 4-5.8 mm long, the middle and the 2 lateral exterior veins reaching the tip, the 2 lateral interior ones vanishing upwards, with awn 1 (1.5)-3 mm long, palea linear-lanceolate, $3.5-5 \times 0.7-0.9$ mm, with apical teeth 0.4 mm long, anther 2-2.8 mm long, ovary elliptical stigmas 0.8 mm long, with cilia 0.2-0.35 mm long, caryopsis 2.3-2.5 mm long.

As concerns *F. jeanpertii* ssp. *campana*, it has in common with *F. humifusa* other additional morphological characters, such as the leaf sheaths fused up to 1/2 of their length and lemma with awn shorter than 1 mm, but clearly differs by having erect flowering stems 30-60 cm long, leaf blade with 7 vascular bundles and 3 very stout sclerenchyma strands, panicle 7-13 cm long, spikelets with 5-8 florets, upper glume 0.9-1.3 mm wide, lemma 3.9-4.6 mm long with awn 0.2-0.9 mm long.

Acknowledgements

Our thanks to Prof. Vicente de la Fuente García of the Autonomous University of Madrid for taxonomic useful suggestions and to Dr. Cristina Salmeri of the Botanical Department of Catania for the karyological investigation. Financial support by M.U.R.S.T. is gratefully acknowledged.

References

- Foggi, B. & Rossi, G. 1996: A survey of the genus *Festuca* L. (*Poaceae*) in Italy. I. The species of the summit flora in the Tuscan-Emilian Apennines and Apuan Alps. — *Willdenowia* **26**: 183-215.
- Kerguelen, M. & Plonka, F. 1989: Les *Festuca* de la flore de France (Corse comprise). — *Bull. Soc. Bot. Centre-Ouest*, n.s., num. special. **10**.
- Markgraf-Dannenberg, I. 1980: *Festuca* L. — Pp. 125-153 in: Tutin, T.G., Heywood, V. H., Burges, N. A., Moore, D. M., Valentine, D. H., Walters, S. M. & Webb, D. A. (ed.), *Flora Europaea*, **5**. — Cambridge.
- 1982: *Festuca* L. — Pp. 478-501 in: Pignatti, S. (ed.), *Flora d'Italia*, **3**. — Bologna.

Address of the authors:

Salvatore Brullo & Riccardo Guarino, Dipartimento di Botanica, Università di Catania, via A. Longo 19, I-95125 Catania, Italy.