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Authors: Martini, Fabrizio, and Scholz, Hildemar

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FABRIZIO MARTINI & HILDEMAR SCHOLZ

Eragrostis virescens J. Presl *(Poaceae),* a new alien species for the Italian flora

Abstract

Martini, F. & Scholz, H.: *Eragrostis virescens* J. Presl *(Poaceae),* a new alien species for the Italian flora. – Willdenowia 28: 59-63. 1998. – ISSN 0511-9618.

Eragrostis virescens is reported as new for the hemerophytic flora of N Italy (Friuli-Venezia Giulia, Alto Adige/Südtirol and Lombardia). An analytical key to the species of *Eragrostis* known to occur in Italy is given.

Introduction

The genus *Eragrostis* contains approximately 350 species chiefly distributed in tropical and subtropical areas (Conert 1983, Clayton & Renvoize 1986). Nevertheless, human activities have determinated the occurrence and sometimes the naturalization of many species in temperate regions. In the British Isles for instance, there are 48 species of *Eragrostis*, primarily of African and Australian origin. These introductions are usually ephemeral and related to the trade of wool and other natural products (Ryves & al. 1996).

In contrast the unintentional introductions, in the United States some S African species such as *E. curvula* (Schrad.) Nees, *E. lehmanniana* Nees and *E. chloromelas* Steud. (according to P. M. Peterson (pers. comm., 7.1998) the last name is synonymous to *E. curvula*) have been used for the consolidation of eroded surfaces and so far the two former species are naturalized (Hitchcock 1951).

In Italy *E. tef* (Zucc.) Trotter, originating from E Africa, has been imported as forage and cultivated in Umbria, Toscana, Lombardia and Campania (Fiori 1923, Brilli Cattarini 1976). However, it has never been reported as being naturalized (Ricceri 1982).

If we compare reports of *Eragrostis* by different Italian authors (Fiori 1896, 1923, Belosersky 1914, Brilli Cattarini 1976), they show little variation before the 1980s, but after 1980 many new ephemeral species are reported from N Italy. Pignatti (1982) reports *E. capillaris* (L.) Nees from the Po valley and Lattanzi (1983) *E. curvula* (Schrad.) Nees from Lazio, where it is used as seed in commercial mixtures for meadows. *E. frankii* Steud. was reported for the first time by Melzer (1988) from Sterpo (province of Udine, Friuli-Venezia Giulia, NE Italy). Melzer & Bregant (1989, 1991) and Poldini (1991) added further locations. *E. pectinacea* (Michx.) Nees was first reported from Italy by Pignatti (1982), Ricceri (1982) and Banfi (1983), who already listed numerous localities. Further records of *E. pectinacea* are given by Melzer (1996).

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Eragrostis virescens J. Presl
≡ *E. mexicana* subsp. *virescens* (J. Presl) S. D. Koch & Sánchez Vega (1985)

A caespitose therophyte with rising-erect, 50-70 cm long, slender culms. Leaf blades 3-6 mm wide, on lower surface sometimes with pitted glands. Panicle open, reaching 1/3 of the culm length, with glabrous branches at the axils, the inferior branches solitary. Spikelets 4-5 mm long and about 1 mm wide, with 7-9 flowers; lemma up to 1.5 mm long; keels of the palea scabrous. Caryopsis (Fig. 1) 0.5-0.7 mm long, dark brown, strongly reticulate, with wide, shallow ventral pit.

Diagnostic features

The pit of the ventral grain face (Fig. 1B) distinguishes *E. virescens* from other species of a complex that includes *E. pilosa* (L.) P. Beauv., *E. barrelieri* Duveau, *E. tef* (Zucc.) Trotter, *E. pectinacea* (Michx.) Nees and *E. multicaulis* Steud. When compared with *E. pilosa* and *E. tef*, *E. virescens* has a panicle with solitary (versus verticillate) inferior branches and lower glumes about half as long as the upper glume (versus subequal glumes). From *E. barrelieri* it can be distinguished by the absence of both glandular tissue below the culm nodes and glands on the pedicels, from *E. pectinacea* by its taller culms (50-70 cm versus 10-25 cm) and by its wider spikelets (1.5 mm versus of 1 mm). *E. multicaulis* lacks tufts of long hairs at the throat of the leaf sheaths, which, in contrast, are clearly present in *E. virescens*.

Distribution and status

Eragrostis virescens originates from South America (Argentina, Chile) and has been observed in Europe since 1927, where it was first recorded from Ürdingen, then also from other localities in Germany, Switzerland, Austria and Poland (Conert 1983), France (Lambinon 1997) and Great Britain (Ryves & al. 1996). The species occurs also as a human introduction in North and Central America, S Africa and Australia (Koch & Sánchez Vega 1985, Lazarides 1997, Smook 1990).

In the Italian flora *Eragrostis virescens* has appeared since 1975, when it was sampled in Friuli near Cordenons (province of Pordenone), but wrongly ascribed by Martini to *E. pilosa*. In the 1990s it was found several times in Trieste and surroundings, where it is frequently encountered in uncultivated lands and on edges of roads in coenoses mostly referable to Artemisietea (Dauco-Melilotion), but it occurs also in root crop cultures (Chenopodietea). In summer 1997 *E. virescens* was found also in Camonica Valley (E Lombardia) and near Merano (Alto Adige/Südtirol).

The temporal and territorial occurrence should allow to register *E. virescens* as a naturalized adventitious species sensu Viegi & al. (1974). At the same time it further underlines the role played in the last 30 years by alien species from the Americas in the hemerophytic flora of NE Italy, as was shown by Martini & Poldini (1995).

Specimens of *Eragrostis virescens* seen from Italy

FRIULI: Province of Pordenone, Cordenons, springs of Vinchiaruzzo, Croce di Vinchiaruzzo, 25 m, 6.9.1979, *F. Martini,* det. H. Scholz (UDM); VENEZIA GIULIA: Karst of Trieste, "Strada napoleonica", 2.11.1992, *L. Poldini,* det. H. Scholz (TSB); TRIESTE: new port, in the area of "ex Gaslini", 2 m, 14.9.1993, *F. Martini,* det. H. Scholz (UDM); M. S. Pantaleone, 50 m, 18.8.1994, *F. Martini,* det. H. Scholz (UDM); Scala dell'Erica, 130 m, 29.7.1997, *F. Martini,* det. H. Scholz (UDM); via Usodimare, 30.9.1997, *F. Martini*, det. H. Scholz (B, UDM); via Rio Primario, 9.10.1997, *M. Barbo*, det. H. Scholz (UDM); Servola, via dei Vigneti, 50 m, 16.10.1997, *M. Barbo,* det. F. Martini (UDM).
LOMBARDIA: Province of Brescia, Camonica Valley, railway station of Darfo, 220 m, 15.8.1997, *F. Martini,* det. H. Scholz (UDM).
ALTO ADIGE/SÜDTIROL: Province of Bolzano/Bozen, new highway Bolzano to Merano at junction Merano-Lagundo/Algund, 10.1997, *Th. Wilhalm,* det. H. Scholz (B, herb. Wilhalm).

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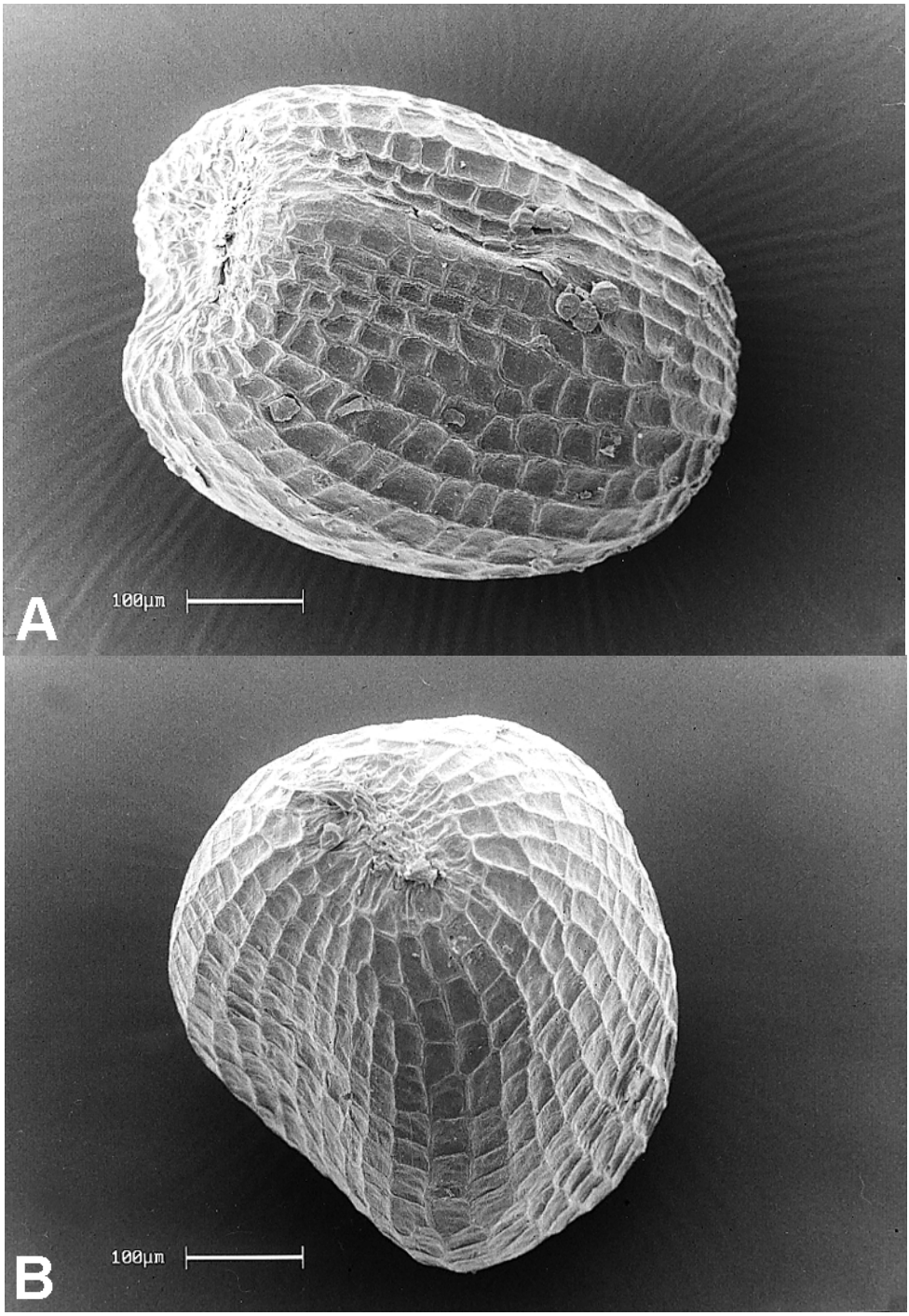


Fig. 1. Seed of *Eragrostis virescens* – A: lateral face with strongly reticulate seed coat; B: ventral face pit. – SEM-photographs by A. Fenili.

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Key to the species of *Eragrostis* in Italy

It seems helpful to provide a new analytical key for the genus *Eragrostis* in Italy. The key is based on Ryves & al. (1996), Hitchcock (1951), Steyermark (1963) and our own studies of the specimens in B and TSB. We prefer to include *E. tef,* in spite of the observations by Ricceri (1982), since it has long been indicated in countries of Central Europe (Ladewig 1976, Scholz 1988).

1. Leaf blades with elevated warty glands on the margin 2
– Leaf blades without glands on the margin 3
2. Leaf sheaths and blades with 1-2 mm long hairs; spikelets up to 2 mm wide; lemma 1.5-2 mm long, apex obtuse . . . . . *E. minor* Host
– Leaf sheaths and blades glabrous; spikelets 2-3.5 mm wide; lemma 2-2.6 mm long, apex acute . . . . . *E. cilianensis* (All.) Vignolo ex Janch.
3. Culms with a ring of glandular tissue below the nodes; pedicels with glands . . . . . *E. barrelieri* Daveau
– Culms without glandular tissue below the nodes; pedicels without glands 4
4. Spikelets up to 5 mm long, 3-5-flowered 5
– Spikelets more than 5 mm long, 5-20-flowered (some with more than 5 flowers) 6
5. Panicle large, diffuse, two-thirds or more of the entire length of the culm; pedicels more than 5 mm long; leaf sheaths hairy at least on the margin; blades hairy near the base of the upper side . . . . . *E. capillaris* (L.) Nees
– Panicle scarcely diffuse, less than half of the entire length of the culm; pedicels generally less than 5 mm long; leaf sheaths glabrous (except the throat), blades glabrous throughout . . . . . *E. frankii* C. A. Mey. ex Steud.
6. Perennial; panicle condensed, with appressed branches and long hairs in their axils; leaf blades arcuate, involute, attenuate to a fine, long and flexuous tip . . . . . *E. curvula* (Schrad.) Nees
– Annual; panicle more or less diffuse at anthesis, with spreading branches; leaf blades with a different combination of characters 7
7. Throat of the leaf sheaths without a tuft of hairs; branch axils glabrous . . *E. multicaulis* Steud.
– Throat of the leaf sheaths with a tuft of hairs almost when young; axils glabrous or hairy . 8
8. Lower branches of the panicle in whorls of (2-)3-6, conspicuously hairy in their axils; immature spikelets with unequal glumes, the lower 1/2-3/4 as long as the upper 9
– Lower branches mostly solitary, with glabrous axils (or nearly so); immature spikelets with subequal glumes 10
9. Panicle up to 15 cm long; spikelets 1-1.5 mm wide, mostly purplish-grey; pedicels up to 2 mm long, shorter than the spikelets; glumes very unequal, the lower (0.2-0.8 mm) 1/2 as long as the upper; seed up to 0.8 mm long . . . . . *E. pilosa* (L.) P. Beauv.
– Panicle 10-30 cm long; spikelets 2-2.5 mm wide, greenish; pedicels up to 5 mm long, subequal or longer than the spikelets; lower glume 2-3 mm long, 1/2-3/4 as long as the upper; seed 1-1.5 mm . . . . . *E. tef* (Zucc.) Trotter
10. Culms 20-70 cm long; spikelets up to 1.5 mm wide; lemma with inconspicuous lateral veins; seed with a shallow depression on the ventral side . . . . . *E. virescens* J. Presl
– Culms up to 25 cm long; spikelets up to 1 mm wide; lemma with conspicuous lateral veins; grain without depression on the ventral side . . . . . *E. pectinacea* (Michx.) Nees

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Addresses of the authors:
Dr F. Martini, Dipartimento di Biologia, Università di Trieste, via L. Giorgieri 10, I-34127 Trieste, Italy; fax: +39 40 568855.
Prof. Dr H. Scholz, Botanischer Garten und Botanisches Museum Berlin-Dahlem, Freie Universität Berlin, Königin-Luise-Straße 6-8, D-14191 Berlin; fax +49 30 83006186.

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