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A revision of *Festuca* (Loliinae, Pooideae, Poaceae) in Chile

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Abstract

The new combination and new variety *Festuca acanthophylla.* A taxonomic revision of the genus *Festuca* in Chile is presented based on morphological and anatomical data. We recognize 19 species and two varieties in Chile. We propose eight new synonyms. Lectotypes are designated for the names *Diplachne brevifolia*, *F. gracillima* fo. *scabra*, *F. gracillima* var. *ramosa*, *F. orthophylla* var. *boliviana*, *F. ovina* subvar. *pubiscula*, *F. ovina* var. *wilczekii*, *F. purpurascens* fo. *aristata*, *F. purpurascens* var. *submutica*, *F. rubra* subsp. *corcovadensis*, and *F. saltana*. Second-step lectotypes are designated for the names *F. berteroniana*, *F. davillae*, *F. desvauxii*, *F. dumetorum*, *F. erecta*, *F. hypsophila*, *F. insularis*, *F. lechleriana*, *F. monticola*, *F. orthophylla* var. *meyenii*, *F. pascua*, *F. platyphylla*, *F. robusta*, *F. subandina*, *F. thermarum*, and *F. tunicate*. Specimens erroneously indicated as "typus" (holotype) in the literature are corrected to lectotype for the names *Diplachne rigescens*, *F. acuta*, *F. asperata*, *F. cavillieri*, *F. commersonii*, *F. glaucophylla*, *F. gracillima*, *F. gracillima* var. *patagonica*, *F. kurtziana*, *F. magellanica*, *F. neuquenensis* var. *parodiana*, *F. ovina* subsp. *hystricola*, *F. ovina* var. *antarctica*, *F. purpurascens*, *F. serranoi*, *F. steudelii*, and *Poa argentina*. A key to all Chilean species, distribution data, illustrations, and leaf blade anatomical and micromorphological descriptions are also provided. The new combination and new variety *Festuca acanthophylla* var. *scabriuscula* is proposed.

Key words: Taxonomy, Nomenclature, species description, South America, Chile

Resumen

Se propone la nueva combinación y variedad *Festuca acanthophylla.* Se presenta una revisión del género *Festuca* en Chile, sobre la base de datos morfológicos y anatómicos. Reconocemos 19 especies y dos variedades que crecen en Chile. Proponemos ocho nuevos sinónimos. Designamos lectotipos para: *Diplachne brevifolia*, *Festuca gracillima* fo. *scabra*, *F. gracillima* var. *ramosa*, *F. orthophylla* var. *boliviana*, *F. ovina* subvar. *pubiscula*, *F. ovina* var. *wilczekii*, *F. purpurascens* fo. *aristata*, *F. purpurascens* var. *submutica*, *F. rubra* subsp. *corcovadensis* y *F. saltana*. Lectotipos de segundo paso se designan para: *F. berteroniana*, *F. davillae*, *F. desvauxii*, *F. dumetorum*, *F. erecta*, *F. hypsophila*, *F. insularis*, *F. lechleriana*, *F. monticola*, *F. orthophylla* var. *meyenii*, *F. pascua*, *F. platyphylla*, *F. robusta*, *F. subandina*, *F. thermarum* y *F. tunicate*. Especímenes indicados erróneamente como "typus" (holotipos) en la literatura son corregidos a lectotipos, como en *Diplachne rigescens*, *Festuca acuta*, *F. asperata*, *F. cavillieri*, *F. commersonii*, *F. glaucophylla*, *F. gracillima*, *F. gracillima* var. *patagonica*, *F. kurtziana*, *F. magellanica*, *F. neuquenensis* var. *parodiana*, *F. ovina* subsp. *hystricola*, *F. ovina* var. *antarctica*, *F. purpurascens*, *F. serranoi*, *F. steudelii* y *Poa argentina*. Incluimos una clave para todas las especies chilenas, datos de distribución, ilustraciones y descripciones de anatomía y micromorfología de la lámina foliar. Se propone la nueva combinación y variedad *Festuca acanthophylla* var. *scabriuscula.*

Palabras Clave: Taxonomía, Nomenclatura, descripción de especies, América del Sur, Chile

Introduction

The genus *Festuca* Linnaeus (1753: 73) is one of the largest in the grass subtribe Loliinae (tribe Poeae, subfamily Pooideae, family Poaceae), containing 450 to more than 500 species (Clayton & Renvoize 1986, Catalán *et al*. 2004). The genus has a cosmopolitan distribution, but the diversity of *Festuca* is centered in the Holarctic zone of Eurasia and North America (Darbyshire *et al*. 2003). It is an important component of grass ecosystems of the temperate and cold-temperate zones, as well as the mountain grasslands of the tropical zone. In South America, about 80 species of *Festuca* occur in a variety of different habitats, from wetlands to xeric ecosystems, and the genus is especially well adapted to extreme conditions in the high Andes and the subantarctic region (Inda *et al*. 2008). Many native species provide good forage in cold and temperate climates of the northern hemisphere (Catalán 2006). In South America native species [*Festuca chrysophylla* Philippi (1891: 88), *F. hieronymi* Hackel (1903: 33), *F. gracillima* Hooker (1847: 383), *F. pallescens* (Saint-Yves 1927: 296) Parodi (1953: 206), *F. rigescens* (Presl 1830: 260) Kunth (1833: 401)] and introduced species [*F. arundinacea* Schreber (1771: 57), *F. rubra* Linnaeus (1753: 74)] provide good forage. The extensive worldwide ecological range covered by *Festuca* taxa, and their abundance in some habitats, have been used to characterize several grassland ecosystems (Catalán 2006).

Phylogenetic studies have revealed that the festucoids (subtribe Loliinae) are monophyletic and that *Festuca*, as traditionally circumscribed, is not a natural genus but a large paraphyletic assemblage of related lineages, with *Lolium* Linneaus (1753: 83), *Vulpia* Gmelin (1805: 8), and several other small genera included within it (Catalán 2006, Catalán *et al*. 2004, 2007). Torrecilla *et al*. (2004) and Catalán *et al*. (2004) found that the subtribe Loliinae comprises two major lineages: 1) the poorly supported "broad-leaved" fescues, comprising several lineages of unclear