



A new species of *Bothriochloa* (Poaceae, Andropogoneae) endemic to montane grasslands of Santa Catarina, Brazil

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Abstract

Bothriochloa catharinensis, a new species of Andropogoneae (Poaceae: Panicoideae, Andropogoneae) endemic to montane grasslands associated with araucaria forest in the state of Santa Catarina, Southern Brazil, is described and illustrated. Morphological similarities between the new taxon and other species of *Bothriochloa* are discussed. Comments on habitat, morphology, distribution and conservation status are provided.

Key words: araucaria forest, grasses, Panicoideae, SEM, taxonomy

Resumo

Bothriochloa catharinensis, uma nova espécie de Poaceae considerada endêmica de campos de altitude associados à Floresta Ombrófila Mista (floresta com araucária) do Estado de Santa Catarina, Sul do Brasil, é aqui descrita e ilustrada. Similaridades morfológicas entre a nova espécie e outros táxons de *Bothriochloa* são discutidas. São fornecidos dados sobre hábitat, morfologia, distribuição e estado de conservação.

Palavras chave: Floresta Ombrófila Mista, gramíneas, MEV, Panicoideae, taxonomia

Introduction

Bothriochloa Kuntze (1891: 762) comprises about 40 species distributed largely in warm-temperate areas of the world (Scrivanti *et al.* 2009). In the Americas, the genus is represented by about 27 species widely distributed in tropical, temperate and subtropical regions; four of these have been cultivated and naturalized (Vega 2000, Vega & Scrivanti 2012). In Brazil, Marchi & Longhi-Wagner (1998) reported 12 species and two varieties; one of these, *Bothriochloa laguroides* var. *torreyana* (Steudel 1840: 93) Marchi & Longhi-Wagner (1998: 52), treated as a subspecies by Allred & Gould (1983) and Vega (2000), was recently elevated to species level based on morphological and biochemical characters (Anton & Scrivanti 2011). *Bothriochloa* belongs to Andropogoneae, a monophyletic tribe (Sanchez-Ken & Clark 2010) characterized especially by a fragile rachis, with a pair of heterogamous or homogamous spikelets on each node, one sessile or subsessile and another pedicellate. In addition, the glumes are of the same length as the spikelet and are firmer in texture than the antheridium. The dispersal unit is usually one pair of spikelets accompanied by a rachis internode. *Bothriochloa* differs from the other genera in the tribe by its rachis internodes and pedicels of pedicellate spikelets with a membranous and hyaline longitudinal groove in the central region between the thickened margins. The dispersal unit consists of a pair of heterogamous spikelets that include the sessile spikelet, the pedicellate spikelet, the rachis internode and the pedicel. The dispersal unit is specialized for wind dispersal by the presence to a greater or lesser degree of trichomes on the rachis internode and pedicel. In the genus, the inflorescence is usually white plumose and showy in the field, consisting of a panicle with the main axis longer than the branches or (1–)2–6 digitate or subdigitate racemes (Vega 2000). The sessile spikelet comprises two glumes, an upper antheridium with a lemma and palea usually present, containing a bisexual flower, and a sterile lower antheridium usually reduced to the lemma. The

TABLE 1. Morphological characters comparing *Bothriochloa catharinensis* and related species.

Character	<i>B. catharinensis</i>	<i>B. laguroides</i>	<i>B. longipaniculata</i>	<i>B. torreyana</i>
plant height	60–70 cm	26–100 cm	(60–)80–175 cm	40–100 cm
panicle length	5–9.5 cm	4–14.5 cm	(9–)13.5–20 cm	6–16 cm
panicle morphology	rhombic to ovate, open, with branches divergent from the rachis	oblong-lanceolate, contracted, with branches appressed the rachis	oblong-lanceolate, contracted, with branches appressed the rachis	oblong-lanceolate, contracted, with branches appressed the rachis
ligule length	1–1.3(–1.5) mm	2–6.2 mm	2–7 mm	(1.1–)1.5–3.2
trichomes in the axils of the branches of the panicle	present	absent	absent	absent
color of groove of the internodes rachis and pedicels	markedly dark purplish to black	brown	light brown	light brown
anther length	0.5–0.8 mm	0.5–0.8 mm	0.4–0.8 mm	0.8–1.2(–1.4) mm

Distribution, habit, phenology:—*Bothriochloa catharinensis* is known so far only from two sites occurring in PARNA SJ in the southern plateau of the state of Santa Catarina, which is in the Atlantic Forest Biome IBGE (2004). The PARNA SJ is located in a large area developed on the continental crust filled with sedimentary and volcanic rocks between 350 and 1822 m elevation (Souza 2004). The specimens are located at 1282–1288 m elevation, characterized by a mosaic of Floresta Ombrófila Mista, known as araucaria forest, due to the presence of Brazilian pine *Araucaria angustifolia* (Bertoloni 1819: 411) (Kuntze 1898: 375) associated with extensions of montane grasslands and nebular forest. The two sites were found in Bom Jardim da Serra, on road margins and also advancing into the road that cuts through the park connecting this municipality to the municipality of Urubici near the Pelotas River, one of the sites situated about 25 m from the river bank. The plants occur on dry soil. Both populations were found in flower and fruit only in March, and the first one, found in 2012, had disappeared the following year, probably due to being in an unprotected place, subject to trampling.

Conservation:—*Bothriochloa catharinensis* is known from only two sites occurring in a limited area of PARNA SJ. Although the populations are located in a government protected area, its habitat, on the roadside, is very vulnerable since there is regular movement of vehicles and road maintenance crews. According to IUCN (2013) criteria the species is classified as Critically Endangered (CR), based on the criteria B2b(i,ii,iii)+D.

Additional material examined (paratype):—BRAZIL. **Santa Catarina:** Bom Jardim da Serra, Parque Nacional de São Joaquim, estrada dentro do Parque Bom Jardim da Serra-Urubici, 1288 m, 28°13'45.7"S, 49°36'05.8"W, 23 March 2013, *E. Dalmolim & A. Zanin 208* (FLOR!, RB!).

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