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First occurrence of *Puccinia stylosanthis* in state of Mato Grosso do Sul, Midwestern Brazil

Primeira ocorrência de *Puccinia stylosanthis* em Mato Grosso do Sul, Brasil

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Abstract

In experimental fields of the Embrapa Gado de Corte, in Campo Grande, Mato Grosso do Sul State, midwestern Brazil, plants of *Stylosanthes guianensis* with symptoms of rust caused by *Puccinia stylosanthis* were found. This is the first report of the disease in Mato Grosso do Sul.

Keywords: rust, forage legume

Resumo

Em campos experimentais da Embrapa Gado de Corte, em Campo Grande, MS, foram encontradas plantas de *Stylosanthes guianensis* com sintomas de ferrugem causada por *Puccinia stylosanthis.* Este é o primeiro relato da doença em Mato Grosso do Sul.

Palavras-chave: ferrugem, leguminosa forrageira

Introduction

Stylosanthes guianensis (Aubl.) Sw. is a widely distributed tropical and subtropical forage legume of the Fabaceae native to Brazil and many other countries of the neotropics. In Brazil, *S. guianensis* is popularly known as “manjericão do campo”, “alfalfa do nordeste”, “trifólio”, “capim-meladinho”, among others. Due to its low phosphorus requirement, it provides increased productivity in natural pastures, growing on poor soils, showing good palatability and being resistant to dry periods. Still, it has demonstrated great aptitude as a forage legume for animal feeding in consortium with grasses. Anthracnose, caused by *Colletrotrichum gloeosporioides* (Penz.) Penz. & Sacc., is the most limiting disease for the legume. On the other hand, rust has assumed increasing importance due to its high virulence and high dispersion capacity.

Matherial and methods

Samples of *S. guianensis* were collected in the experimental fields of Embrapa Gado de Corte belonging to a Brazilian agricultural research company in Campo Grande, Mato Grosso do Sul, Brazil. The abaxial side of the leaves exhibited irregular chlorosis lesions containing pustules with masses of spores of rust fungi.

The samples were slowly dried and accessioned in the Herbarium of the Instituto de Pesquisas Jardim Botânico do Rio de Janeiro (RB). Sori were observed using a Leica S6E stereomicroscope. The free-hand sections and scrapings were placed in lactophenol or chloral hydrate, examined using a Zeiss Axioskop 40 compound microscope, and images were taken using an AxioCam MRc camera (Carl Zeiss). Illustrations were made from images of these slides and from images made in the field. Dimensions were taken from at least twenty urediniospores and teliospores.

Results

The sample was identified as *Puccinia stylosanthis* Viégas. Viégas (1945) suggested the new combination *P. stylosanthis*, a teleomorphic name, having the basionym *Uredo stylosanthis* Henn., an anamorphic name. Viégas (1945), however, did not provide a new Latin diagnosis for the teleomorphic name. Nevertheless, the name *P. stylosanthis* has been used by various authors, such as Lenné (1990, 1994), CABI Bioscience (2012), and others. Although Gajaerum (1985) prefers the basionym *U. stylosanthis*, we understand that the adoption of *P. stylosanthis* Viégas is more widely used. The species has been recorded in several African countries (Lenné 1990), and in Brazil, where it has been recorded in the States of Santa Catarina (San Francisco) (Hennings 1899), São Paulo (Campinas) (Viégas 1945), Minas Gerais (Diamantina and Pirapora) (Lenné, 1994), and now, in Mato Grosso do Sul, a state in Midwestern Brazil.

Puccinia stylosanthis Viégas. *Bol. Soc. Bras. Agron.* 8: 164. BRAZIL: SÃO PAULO, Campinas, Jardim Guanabara,11 Oct 1938, on *Stylosanthis guianensis*, *O. Zagatto s/n* (IAC4827).

Uredo stylosanthis P. Henn. *Hedw (Beibl.)* 1899: 68. Type: BRAZIL: SANTA CATARINA: São Francisco, mai 1884, on *Stylosanthis viscosa*, *Ule 38*.

Figure 1. *Puccinia stylosanthis:* Symptoms on *Stylosanthes guianensis* (A-E). Urediniospores: F. Median focus. G. Surface focus. H. Teliospores, mediam focus

Spermogonia and aecia unknown. Uredinia 0.1 to 0.5 (–1.0) mm diam., scattered or in small groups, mostly on abaxial sides of leaves, breaking the epidermis, pulverulent, brown; peridia or paraphyses absent. Urediniospores cinnamon-brown, globoid, broadly ellipsoid or pyriform, 22–29 × 17–22 µm, walls 2.0 to 3.0 µm thick, finely equinulate, each spore with 2 germ pores, rarely 3, equatorial to subequatorial, pedicels deciduous (Fig. 1 F-G). Telia like uredinia, darker. Teliospores brown, oblong to oblong-ellipsoid, rounded above and below, two-celled, constricted at septum, 19–26 × 34–44 µm; walls 2.5 to 3.5 µm thick, slightly thicker at the apex, smooth; germ pores at the tip of the distal cell and near the septum at the proximal cell; pedicel hyaline, up to 30 µm long (Fig. 1 H).

Specimen examined: BRAZIL. Mato Grosso do Sul: Campo Grande, Embrapa Gado de Corte, on *Stylosanthes guianensis* (Aubl.) Sw., 12 Sept 2012, *J. R. Verzignassi s/n* (RB) (Fig. 1); BRAZIL. São Paulo: Campinas, Jardim Guanabara, *Stylosanthis guianensis*, 11 Oct 1938, *O. Zagatto s/n* (IAC4827).

So, we expanded the distribution of *Puccinia stylosanthes* Viégas to the State of Mato Grosso do Sul in Midwestern Brazil.

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