

## *Puccinia stylosanthis* on *Stylosanthes* spp. in Brazil

JILLIAN M. LENNÉ, Tropical Pastures Program, Centro Internacional de Agricultura Tropical (CIAT), Apartado Aéreo 6713, Cali, Colombia, and NUNO MARIA DE SOUSA COSTA, Empresa de Pesquisa Agropecuária de Minas Gerais, EPAMIG, Santa Rita, Minas Gerais, Brazil

### ABSTRACT

Lenné, J. M., and Sousa Costa, N. M. de. 1985. *Puccinia stylosanthis* on *Stylosanthes* spp. in Brazil. *Plant Disease* 69:355.

Rust caused by *Puccinia stylosanthis* is reported for the first time on native populations of *Stylosanthes aurea* and *S. guianensis* var. *pauciflora* in the vicinity of Diamantina, Minas Gerais, Brazil. Although not common in May 1983, rust severely affected 50% of *S. aurea* and moderately affected most *S. guianensis* var. *pauciflora* plants in May 1984. Because the latter species is a promising tropical forage legume in the savannas of Brazil and Colombia, the need to evaluate existing germ plasm collections for rust resistance is stressed.

*Stylosanthes* is well known as the most widespread and successful genus of tropical forage legumes (3). Although few diseases had been found before 1970, 11 genera of fungi, one bacterium, one mycoplasma, two viruses, and four genera of nematodes were described on *Stylosanthes* spp. in a recent review (4). The disease described in this paper, however, was not included in that review.

*Uredo stylosanthis* P. Henn. was first described in 1899 from Sao Francisco, Santa Catarina, Brazil, as producing red-brown pustules on leaves of *Stylosanthes viscosa* Sw. (2). Both the distribution and description were amplified in 1938 with its finding in Campinas, Sao Paulo, Brazil, on *S. guianensis* (Aubl.) Sw. (7). In 1945, Viegas (7) described the telia and teliospores for the first time. On the basis of the morphology of the teleomorph, he renamed this rust *Puccinia stylosanthis* (P. Henn.) Viegas. In neither of these reports was any information given on the abundance or importance of this rust on *Stylosanthes* spp.

In May 1983 during periodic surveys of native *Stylosanthes* populations throughout northern Minas Gerais, a large region well known for the abundance and diversity of *Stylosanthes* spp. (5), rust was found on *S. aurea* M. B. Ferr. & Sousa Costa for the first time within a population covering about 10 ha, 50 km south of Diamantina. Only a few plants of *S. aurea* were moderately to severely rusted, whereas associated plants of *S.*

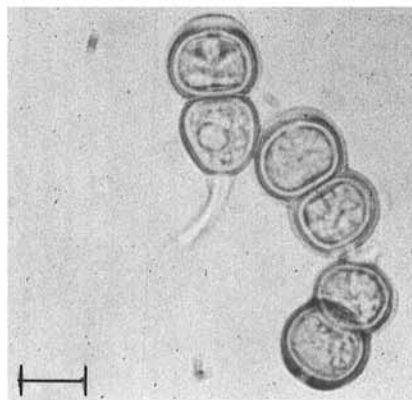


Fig. 1. Teliospores of *Puccinia stylosanthis*. Bar = 10  $\mu$ m.

*guianensis* var. *pauciflora* were not affected. Red-brown discrete rust sori 0.1–1.0 mm long were common on the abaxial surfaces of mature leaflets, distributed over the whole leaflet abaxial surface between the prominent veins (Fig. 1). They were not seen on adaxial leaflet surfaces. Uredospores were yellow-brown, globose to broadly ellipsoid, 20–30  $\times$  18–25  $\mu$ m with two, rarely three, equatorial to subequatorial pores, and very finely echinulate. Teliospores were two-celled, oblong to ellipsoid, 30–45  $\times$  20–25  $\mu$ m with walls 2–4  $\mu$ m thick, being slightly thicker at the apex, and with hyaline pedicels up to 30  $\mu$ m long (Fig. 1). Teliospores varied in abundance from very common to rare among sori and among rusted leaflets. The identity of the rust was confirmed as *P. stylosanthis* by both J. E. M. Mordue of the Commonwealth Mycological Institute, England, and by George B. Cummins of Tucson, AZ.

By May 1984, the incidence of rust at the same site had increased considerably. About 50% of *S. aurea* plants were severely rusted, whereas most *S.*

*guianensis* var. *pauciflora* plants were moderately affected. Rusted *S. aurea* plants were also found at two other sites about 60 and 80 km south of Diamantina.

Although the increased incidence and severity of rust on *S. aurea* is noteworthy, the finding of *P. stylosanthis* on *S. guianensis* var. *pauciflora* is of utmost importance. Agronomic evaluation of various *Stylosanthes* spp. during the past 4 yr has led to selection of *S. guianensis* var. *pauciflora* accessions as highly promising tropical forage legumes in the savannas of both Brazil (6) and Colombia (1) not only because of their excellent adaptation and high productivity in both regions but also because of their resistance to anthracnose (*Colletotrichum gloeosporioides* (Penz.) Sacc.), the most damaging and widespread disease of *Stylosanthes* spp. (4). One accession of *S. guianensis* var. *pauciflora* was recently released as cultivar Bandeirante, one of the first tropical forage legumes specifically selected for the Brazilian savannas (6). Clearly, germ plasm of this promising cultivar of *S. guianensis* and of other *Stylosanthes* spp. should be screened for rust resistance as soon as possible prior to further selection and advancement of promising, possibly rust-susceptible germ plasm.

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