

# Drechslera Leaf Spots of *Pennisetum clandestinum* and *P. ciliare*

J. J. MUCHOVEJ, Assistant Professor, Departamento de Fitopatologia, Universidade Federal de Viçosa, Viçosa 36570 M.G., Brazil

## ABSTRACT

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A zonate leaf spot of *Pennisetum clandestinum* turf, found during the 1979 dry season in Brazil, was incited by *Drechslera bicolor*. Spots are dark purple and gray and reach a maximum size of 3 × 1 mm. A small fleck leaf spot of *P. ciliare* grown under pasture conditions in 1979 was caused by *D. maydis*. Flecks are reddish brown at first and later become so numerous that they coalesce, resulting in a leaf tip blight. Both pathogenic combinations appear to be new.

Little attention has been given to pathogenic fungal flora of pasture and turf grasses in Brazil. Viégas (5) cites many fungi from grasses but does not indicate their pathogenicity. Many reported fungi have not been identified to species.

This study reports two apparently new pathogenic relationships: one with the turf grass *Pennisetum clandestinum* Hochst. ex Chiov. (Kikuyu grass), the other with a pasture grass, *P. ciliare* (L.) Link. *P. clandestinum* is a low-growing, rhizomatous, stoloniferous perennial that is a good forage grass in the tropics and subtropics (4). In Minas Gerais, Brazil, it is often found in lawns. *P. clandestinum* turf is tufty when new and matted when well established. *P. ciliare*, a

bunch grass of medium height (up to 50 cm) (4), is being tested as a forage in Brazil.

## MATERIALS AND METHODS

Collections and isolations of the fungi were made from naturally occurring diseased leaves, culms, and thatch surface-disinfested for 1 min with each of 2.5% sodium hypochlorite and 70% ethanol. Tissues were then placed on either moist blotter paper or 1.5% water agar in sterile petri plates. Fungi were transferred to potato-dextrose agar in tubes.

Disease-free plants grown in greenhouse soil mix in 10-cm clay pots were inoculated. *P. clandestinum* was maintained at 5-cm cutting height. Each pot was sprayed with 1 ml of inoculum ( $10^3$  conidia/ml). Inoculated and noninoculated plants were placed in moist chambers at 21 C for 24 hr and then moved to the greenhouse. Reisolations were made from symptomatic plant parts, and fungi were compared with

those originally inoculated.

Species were determined with Ellis' key (3) for fungi and Hitchcock's key (4) for grasses.

## RESULTS AND DISCUSSION

During the dry season (April–October), Kikuyu grass turf is often blemished by a zonate leaf spot. Spots are dark purple in the center and are surrounded by one or two light gray concentric rings separated by a dark purple ring (Fig. 1B). Spots are translucent yellow at the edges, oval, and reach a maximum size of 3 × 1 mm. They are found on leaves of all ages but are more numerous on older leaves and often result in yellowing of the entire leaf.

Isolations from naturally occurring spots and thatch of *P. clandestinum* yielded pure cultures of the *Drechslera* state of *Cochliobolus bicolor* Paul & Parberry (*Drechslera bicolor* (Mitra.) Subram. & Jain) (syn. *Helminthosporium bicolor* Mitra.). Conidiophores were up to 350 μm long, 6–8 μm wide, and medium to dark brown. Conidia were 5–11 pseudoseptate, 35–90 × 13–16 μm, and medium to dark brown, with both end cells light in color. This appears to be the first report of *D. bicolor* on *P. clandestinum*. Zonate leaf spots appeared on plants within 3 days of inoculation.

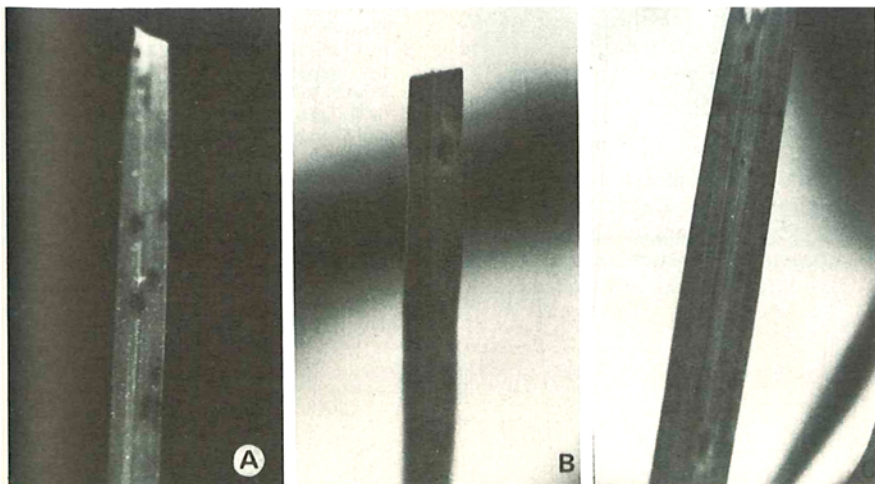


Fig. 1. *Drechslera bicolor* on *Pennisetum clandestinum*: (A) naturally infected leaf, (B) zonate nature of the leaf spot, (C) artificially infected leaf.

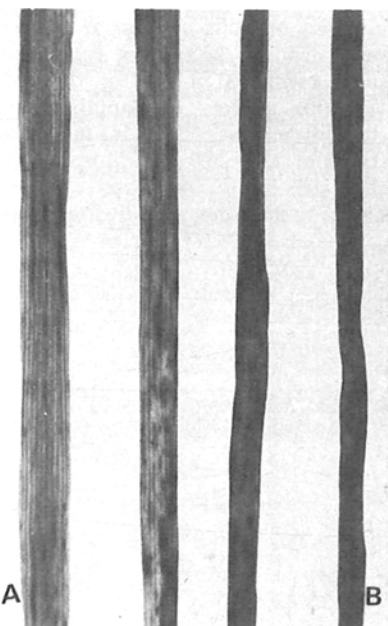


Fig. 2. *Drechslera maydis* on *Pennisetum ciliare*: (A) fleck spots on upper leaf surface, (B) lower surfaces and tip burn on older leaf.

Present address of author: Department of Plant Pathology and Physiology, Virginia Polytechnic Institute and State University, Blacksburg 24061.

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Reisolation yielded pure cultures of *D. bicolor*.

*D. bicolor* is a potentially destructive pathogen of *P. clandestinum*. Leaf spots are aesthetically displeasing and appear to reduce plant vigor.

*P. ciliare* is often affected by a small fleck spot that progresses into a leaf tip blight. Flecks are reddish brown to brown (Fig. 2), begin on the underside of the leaf, and then move to the upper side, becoming so numerous that they coalesce and result in a blight of the leaf tip.

Isolations made from surface-disinfested, naturally occurring spots yielded pure cultures of the *Drechslera*

state of *Cochliobolus heterostrophus* (*D. maydis* (Nisikado) Subram. & Jain) (syn. *Helminthosporium maydis* Nisikado). Conidiophores were grouped, up to 625  $\mu\text{m}$  long, and medium brown. Conidia were curved, 5–10 (mostly 8) pseudoseptate, 93–130  $\times$  15–18.5  $\mu\text{m}$ , and medium brown. Small fleck spots appeared within 4 days of inoculation. Reisolation yielded pure cultures of *D. maydis*.

Another fungus from *P. ciliare* is *D. gigantea* (Heald & Wolf) Ito (syn. *Helminthosporium giganteum* Heald & Wolf) (1,2), which is distinctly different from *D. maydis* (3). *D. gigantea* causes a

zonate eyespot rather than a small flecking.

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