F. moniliforme, it was possible to consistently re-isolate these two pathogens. All the species of fungi tested are either producers of toxins, or are closely related to other species known to produce phytotoxins. For instance, Cochliobolus myabaenus, the causal agent of brown leaf spot on rice (Oryza sativa), produces a mycotoxin that retards seedling growth and causes root necrosis (Ou 1985). Production of mycotoxins by species of Fusarium has been well documented (Vesonder and Hesseltine 1981). Curvularia lunata also produces a phytotoxin (Stoessl 1981). The observed yellow discoloration of the leaves and stunting of the seedlings are indicative of toxin involvement.

References


A Strain of Colletotrichum gloeosporioides Causing Anthracnose on Yellow Sorghum

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Anthracnose, Colletotrichum sublineolum (Henn., Kabat et. Bub.) (=C. graminicola(Ces.) Wils.), can cause considerable yield losses in sorghum (Harris and Fisher 1974, Mishra and Siradhana 1979, Thakur 1995). The authors observed a new pathogen causing anthracnose in yellow sorghum in India.

Anthracnose-infected leaves of a local landrace of yellow sorghum were collected from a field at Pudur, Kovai District, Coimbatore, Tamil Nadu, in India. The leaf samples showed two types of lesions: 1. small, elliptical, red spots, 3-5 x 1.0 mm, with a straw-colored center, and 2. large, elliptical, brown-red spots, 5 x 1.5 mm, with a straw-colored center (Fig. 1). The brown-red spots were different in size from those caused by C. sublineolum.

References


Figure 1. Anthracnose lesions on leaves of yellow sorghum. Left-lesions caused by Colletotrichum gloeosporioides, right-mixed symptoms by C. gloeosporioides (larger lesions) and C. sublineolum (smaller lesions).
On isolation on oatmeal agar medium (OMA) at 25°C under continuous fluorescent light, the small lesions yielded cultures with profuse, grayish-white mycelial growth and setose acervuli bearing falcate, hyaline, aseptate conidia measuring 19-26 µm, typical of C. sublineolum.

The fungal culture from larger lesions had sparse, grayish-white, submerged mycelial growth and abundant sporulation in the form of setose acervuli bearing salmon-pink masses of conidia. The conidia were hyaline, aseptate, straight, obtuse at the apex (Fig. 2), measuring 11.2-14.9 x 3.7-4.8 µm. The culture also formed round, black perithecia, bearing asci and ascospores. The asci were 8-spored, sessile, unitunicate, thin walled, broadly cylindrical to slightly clavate, with rounded apex, and measured 34.7-47.1 x 5-12.4 urn. Ascospores were one-celled, pale brown, biseriate in ascus (Fig. 3), ellipsoidal, slightly curved and inaequilateral. Koch’s postulates were proved by testing the pathogenicity of conidia and ascospores on yellow sorghum plants. The culture (IMI 377977) was identified as Colletotrichum gloeosporioides (Penz.) Sacc, and its perfect stage as Glomerella cingulata (Stonem.) Spauld. and Schrenk. Subsequently, another culture was recovered from yellow sorghum grains collected from Maharashtra, India. Further studies are in progress.

References

