

A Rapid Method of Identifying *Helminthosporium maydis* Race T from Spore Samplers

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ABSTRACT

A rapid method of determining the identity and viability of *Helminthosporium maydis* race T spores caught by an air sampler was developed. Cellulose tape bearing trapped spores was placed on corn seedling leaves, which were put into a moist chamber for 18 h. Typical blight symptoms appeared 3-5 days after incubation.

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Air sampling for spores of *Helminthosporium maydis* Nisikado & Miyake race T, the southern corn leaf blight

fungus, began during the summer of 1971 after a serious blight epidemic in 1970. A rotorod sampler was used to trap spores because in our experiments with two types of air samplers it yielded the highest daily spore counts.

Race identification of collected spores was impossible without host response data. This situation stimulated a study for a time-efficient means for identifying the race of collected spores.

The collecting surface of the sampler rods was a double-stick cellulose tape, 3.81 cm long and 1.27 cm wide, attached to the U-shaped arms. After exposure, the strips were removed from the rods and placed onto microscope slides, from which spore counts were made.

Several times during the summer, pathogenicity of collected spores was assayed by inoculating corn seedlings with the trapped spores. Spore-containing strips from the Rotorods were wrapped, spore side down, around greenhouse grown seedling leaves. Subsequently, corn seedlings were placed in a moist chamber for 18 h at 21 C. After removal from the moist chamber the seedlings were placed on a greenhouse bench at 22-24 C and natural light. Lesions developed on the inoculated leaves within 3-5 days.

Lesions characteristic of race T developed on Tms corn.

Lesions were removed from leaves and placed in a petri dish in a moist chamber incubated at room temp. about 22 C. After 24 h incubation, abundant sporulation was associated with isolates from lesions showing characteristics of race T.