

NEW DISEASE REPORT

First report of bacterial blight caused by *Acidovorax avenae* ssp. *avenae* associated with finger millet seeds from Uganda

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Finger millet (*Eleusine coracana*) is an important food crop for Uganda. Information on bacterial diseases of this crop in Uganda is limited. Adipala (1980) reported bacterial blight caused by *Xanthomonas axonopodis* pv. *coracanae*. Seedlings of finger millet grown in soil under controlled conditions (30°C, 12 h light/dark cycles) showed severe blight and necrotic stripe symptoms similar to those incited by *Acidovorax avenae* ssp. *avenae*. Seeds were further tested for this bacterium by a seedling symptom test (Shakya & Chung, 1983). Nine out of 10 seed samples collected from eastern, central, and western regions of Uganda showed 25–35% of seeds to be infected. Bacterial ooze was observed with a compound microscope from sections of leaves showing blight and stripe symptoms. A bacterium was isolated when leaf macerate was streaked on to nutrient agar or King's medium B agar plates and incubated at 28 ± 2°C. Translucent, whitish-grey bacterial colonies measuring 2–3 mm and having fringed margins appeared after 24 h. The strains were identified by ELISA using antiserum raised against rice strain (DGISP 183 Nepal). Bacterial suspensions (10⁸ CFU mL⁻¹) of 17 different strains in sterile phosphate buffered saline from 24-h-old-cultures infiltrated into leaves of 2-month-old tobacco

plants induced hypersensitive reaction after 24 h. Inoculated finger millet plants (21-day-old) showed blight and stripe symptoms after four to seven days. *Acidovorax avenae* ssp. *avenae* was re-isolated from such affected plants. The strains were Gram-negative, nonfluorescent on King's medium B, arginine dihydrolase negative, nitrate-positive and starch-negative. Metabolic profiling of the strains using the Biolog GN MicroPlates and the associated MicroLog profiling matching software (Biolog Inc., Hayward, CA, USA) identified strains as *Acidovorax avenae* ssp. *avenae* (similarity 0.760–0.836). Strains are deposited at the DGISP culture collection, Copenhagen, Denmark. This is the first report of *Acidovorax avenae* ssp. *avenae* in finger millet from Uganda.

References

- Adipala E, 1980. *Diseases of Finger Millet (Eleusine coracana L. Gaertn.) in Uganda*. Kampala, Uganda: Makerere University, MSc Thesis.
- Shakya DD, Chung HS, 1983. Detection of *Pseudomonas avenae* in rice seed. *Seed Science and Technology* 11, 1139–43.

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