

Research Note

CHOANEPHORA CUCURBITARUM, FOLIAR BLIGHT OF DRY BEANS (PHASEOLUS VULGARIS)¹

In the summer of 1988 at the Isabela Experiment Substation, University of Puerto Rico, foliar blight was found on red beans (*Phaseolus vulgaris*) similar to that of web blight (*Thanatephorus cucumeris*). Symptoms were water soaked spots of indefinite size and shape on the upper leaves. The spots spread to the lower leaves of infected plants. Infected foliage turned dry and necrotic with age (fig. 1). Symptoms occurred during periods of excessive rainfall and high temperatures.

Choanephora cucurbitarum was isolated from naturally infected bean leaves on acidified potato-dextrose-agar (PDA), grown at room temperature, and under supplemental lighting. Both sporangia and conidia were present in pure cultures. Mycelium was white, coenocytic, extensive, and grew rapidly. Sporangium was globose with many spores, and borne terminally on a simple enlarged sporangiophore (fig. 2). Sporangiospores were brown and ellipsoid

(fig. 3). Conidiophores were erect, hypha terminating in a vesicle from which short branches emerged and short sterigmata bearing conidia. Conidia resembled the sporangiospores in shape but were non-ciliate and with a hyaline appendage at the base. Koch's postulates were satisfied by greenhouse artificial inoculations.

Choanephora cucurbitarum (Berkeley & Ravenae) Thaxter is weakly parasitic on senescent flowers, leaves, and fruits of many plants.² It has been reported on common bean^{3,4} and pole bean.⁵ The fungus is also an active pathogen on cucumber, squash, pumpkin, pepper, peas, cowpeas, and okra^{4,6}. However, *C. cucurbitarum* of dry beans may not be of major economic importance in Puerto Rico.

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²Fitzpatrick, H. M., 1930. The Lower fungi. McGraw-Hill Book Company.

³García, J. M., W. Lara, R. Benítez and A. Hernández, 1987. *Choanephora cucurbitarum* agente causal de una nueva enfermedad en frijol común (*Phaseolus vulgaris*). XXVII Annual Meeting of APS-Caribbean Div. Guatemala City, Guatemala. (Abst.).

⁴Holliday, P., 1980. Fungus Diseases of Tropical Crops. Cambridge University Press.

⁵McMillan, Jr., 1972. *Choanephora* wet-rot of pole beans. *Plant Dis. Rep.* 56 (11): 967-68.

⁶Chupp, C. and A. F. Sherf, 1960. Vegetable Diseases and their Control. Ronald Press, New York.



FIG. 1.—Severe symptoms of *Choanephora cucurbitarum* foliar blight on dry beans planted at the Isabela Experiment Substation. Note necrotic and dry foliage of infected plants.



FIG. 2.—Micrograph of sporangiophore and sporangium with sporangiospores of *Choanephora cucurbitarum* (400X).

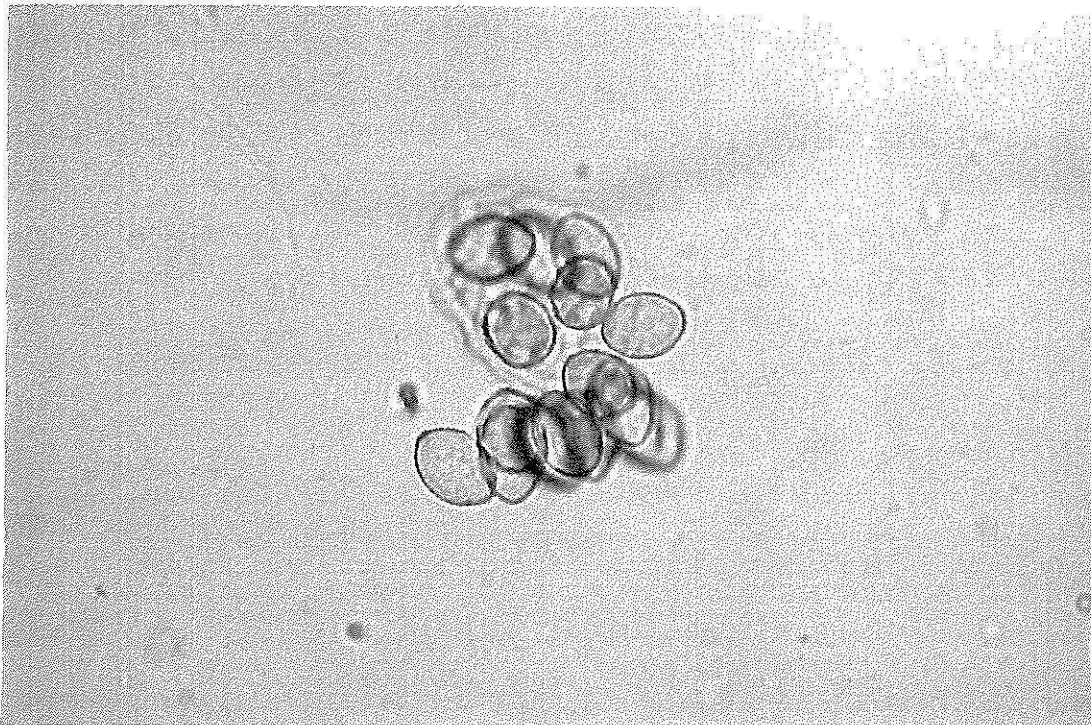


FIG. 3.—Brown and ellipsoid sporangiospores of *Choanephora cucurbitarum* (400X).