

Disease Caused by *Cylindrocladium* on Potato Tubers in Brazil

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ABSTRACT

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Disease caused by *Cylindrocladium* on potato tubers was noted in 1977-78 and again in 1979. Pathogenicity tests and reisolations from artificially inoculated tubers confirmed that *Cylindrocladium* was the incitant. This is believed to be the first report of the fungus attacking potato tubers.

A disease of potato tubers (*Solanum tuberosum*) caused by a *Cylindrocladium* species was noticed on newly harvested potato tubers of cultivars Bintje and Chata grown in the Federal District of Brazil in 1977-78 and again in 1979. Although *Cylindrocladium* attacks various plant species (1-4), this is believed to be the first report of a *Cylindrocladium* species causing disease of potatoes. The fungus was consistently isolated from diseased tubers February through June 1979. Pathogenicity tests under controlled conditions and subsequent reisolations from artificially inoculated tubers confirmed the hypothesis that *Cylindrocladium* was the incitant.

The disease was found on newly harvested potato tubers in moist conditions that apparently favor its development. Infections occur through wounds received during harvest or handling. Symptoms first appear as small, circular, brownish necrotic spots (Fig. 1A). The spots increase in size and rapidly become slightly sunken circular lesions with gray centers; the sizes vary from specks to areas 2.0 cm in diameter (Fig. 1B). The margin between healthy and diseased tissue is well defined. The affected tissues desiccate rapidly and have the appearance of a dry rot. In time, the necrotic lesions coalesce to form patches of rotted areas. The underlying tissue of an affected area develops a brown corky dry

rot not more than 2-3 mm in depth (Fig. 1C). Severely affected tubers may become soft because of secondary bacterial

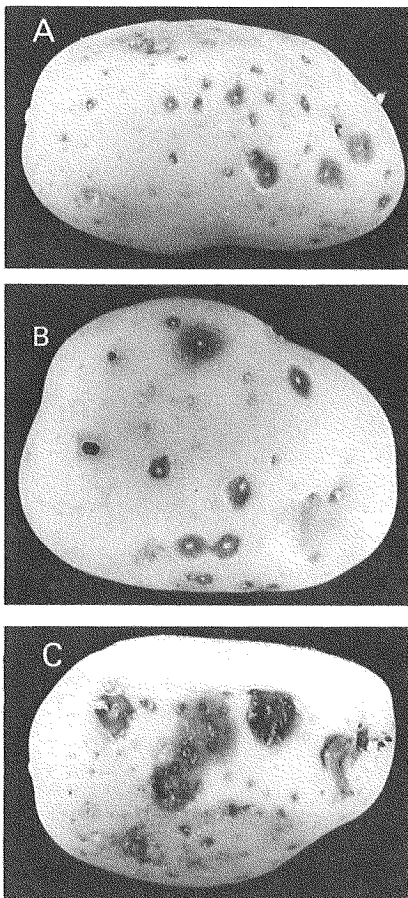


Fig. 1. Symptoms produced by *Cylindrocladium* on potato tubers of cultivar Bintje. (A) Early stage, 6 days after inoculation. (B) Advanced stage, 12 days after inoculation. (C) Underlying tissue of the affected area.

infections.

Healthy potato tubers of the cultivar Bintje were inoculated with *Cylindrocladium* species on three different occasions. The inoculum was an isolate of the fungus that was originally isolated from naturally infected tubers and grown on potato-dextrose agar for 10 days. Conidia were then washed, brushed off the agar surface with a transfer needle into 25 ml of sterile water, and filtered through double-layer cheesecloth. The resulting suspension was adjusted to a concentration of 2×10^5 spores per milliliter. Approximately 2 ml of this spore suspension was evenly sprayed on 10 unwounded tubers and 10 tubers previously wounded by puncturing the epidermal layer several times with a fine needle of a 1-ml disposable hypodermic syringe. All tubers were placed on moist filter paper and held at room temperature (22 ± 2 C) in covered plastic boxes measuring $22 \times 9 \times 32$ cm, which served as moist chambers.

Brownish necrotic lesions were observed on mechanically wounded tubers 72 hr later, and typical lesions developed 6 days after inoculation. No symptoms developed on unwounded tubers or on tubers sprayed only with sterile distilled water and held under similar conditions. The fungus was readily reisolated, and one of these reisolates was used successfully to inoculate other tubers.

Further work on the identification of the fungal species, distribution of the disease, and its control is in progress.

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