

FIRST REPORT OF *VERTICILLIUM* EARLY DYING IN POTATO FIELDS IN CUBA

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More than 9 000 ha of potato (*Solanum tuberosum* L.) are annually planted in Cuba under irrigation. Symptoms of wilting and dying of plants were observed in January 2007, in a 39 days old potato field starting to flowering of the varieties Spunta and Ajiba (Netherland seeds), in the locality of Perico in Matanzas province. Symptoms consist in flaccidity, yellowing and wilting of the upper and lateral leaves, accompanied by necrotic patches around the nerviations and leaves edges, growth retention, wilting and dying of plants (Fig. 1A and B). Orange-reddish to salmon coloured vessels were present internally, in the stems as well as in the roots and tubers (Fig. 2A and B). The yield of those affected surviving plants were 10-11% lower at harvest than the healthy ones.

Verticillated conidiophores were developed on the tissues kept in humid chambers, with a spiral growth habit (2-3 by nude), with erect phialide (2-4; 15-35 x 2.5 μ m) and elliptical to elipsoid, single cell, hyaline conidia (2.5-8.75 x 2.5-3.5 μ m) produced in sequence in the extremes of the conidiogenic cells to develop humid

balls (Fig. 4A and B). An abundant formation of microsclerotia was observed in the internal tissues.

Colonies growing in PDA were white at first and light brown later in the underside, with a moderate aerial growth and dark sectors due in some cultures to the presence of abundant microsclerotia and to melanized hyphal tips in others (Fig. 3A and B).

The symptoms and fungal structures closely agreed with the description of the species *Verticillium dahliae* and *V. albo-atrum*, causal agents of the potato early dying [Turkeenteen, 2006; Hawksworth and Talboys, 1970a,b].

The dispersal of both pathogens in different localities of the country have been assessed by surveys carried out afterwards, in this way they have been detected in potato fields (varieties Red Scarlett, Ajiba, Calwhite, La Rouge and Spunta) in Güira de Melena and Alquízar in Havana, Perico in Matanzas and Baragua in Ciego de Avila provinces as well as in tomatoes in Jagüey Grande (tomato hybrid Gicelia). This paper is the first report of *V. dahliae* and *V. albo-atrum* in Cuban fields.



Figure 1. Symptoms in the field: A) Wilting and necrotic leaflets in the branches of a plant. B) Plants with symptoms of wilt.

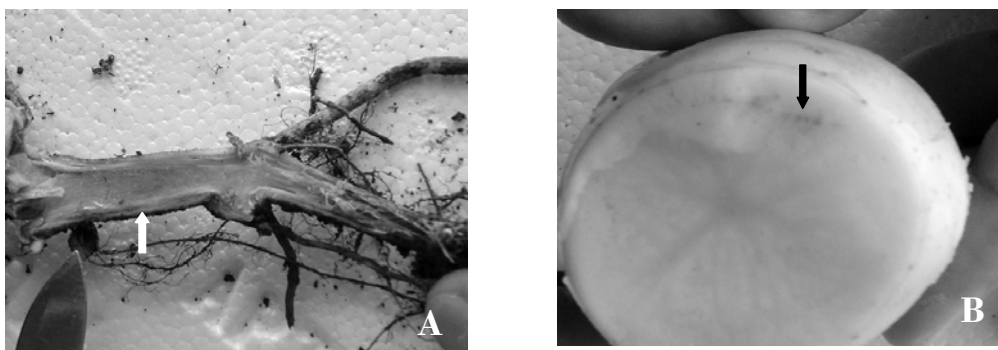


Figure 2. Discolored vessels in: (A) the base of the stalks and B) the tubers.

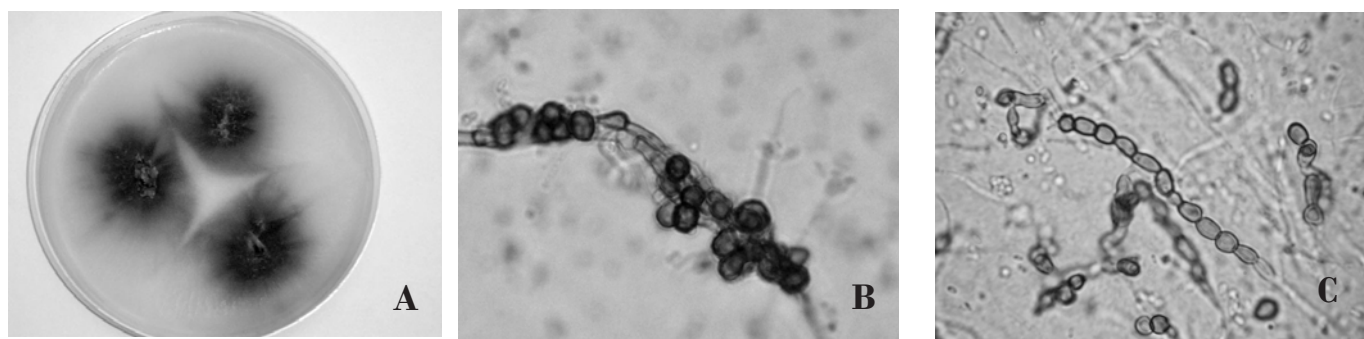


Figure 3. Cultures of *V. dahliae* and *V. albo-atrum*: A) Morphology of the colonies (underside); B) Microsclerotia of *V. dahliae* produced in culture (640 x magnification); C) Melanized hyphal cells of resting micelia of *V. albo-atrum* produced in cultures (640 x magnification).

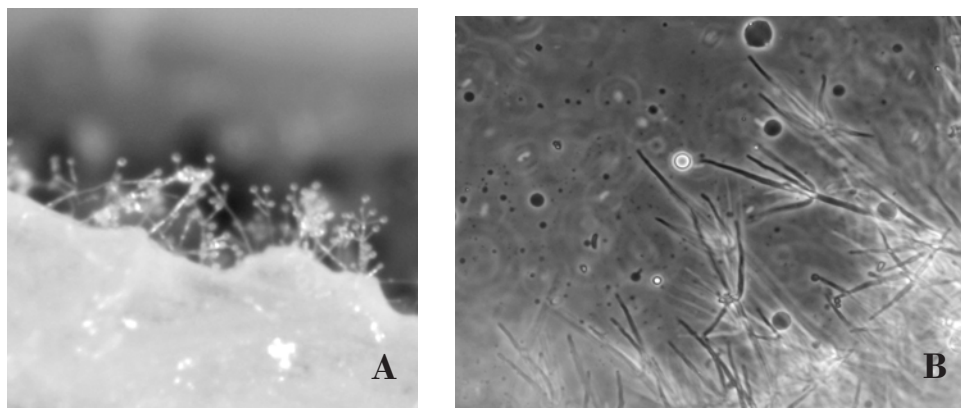


Figure 4. Verticillated conidiophore with erect phialide and spore balls. A) conidiophore and spore balls at the surface of the stems in humid chamber (80 x magnification); B) verticillated conidiophore with phialide and spores (640 x magnification).

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