Occurrence of Potato Powdery Scab Caused by Spongospora subterranea f. sp. subterranea in Costa Rica

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Powdery scab of potatoes, caused by *Spongospora subterranea* (Wallr.) Lagerheim f. sp. *subterranea* Tomlinson, is important worldwide due to its effect on tuber quality and transmission of *Potato mop-top virus*. Although powdery scab-like lesions have been observed on potato in Costa Rica (1), the presence of the pathogen has not been confirmed. During a survey in 2001, powdery scab-on was observed from a field and a greenhouse in the high elevation zone of the main potato-producing area of Costa Rica. Commercial potatoes with scab-like lesions were also obtained at a farmers' market. Scraping the lesions, and observing spore balls or cystosori with a honey-comb-like structure under light microscopy confirmed the identity of *S. subterranea*. The identity of the pathogen was also confirmed by enzyme-linked immunosorbent assay using monoclonal antibodies specific for *S. subterranea* (BioReba Ag, Reinach, Switzerland). Pathogenicity of *S. subterranea* was confirmed by a bioassay on tomato plants grown in nutrient solution culture (2). Tomato cv. Supermarmande plants were grown from seed in pots filled with quartz and watered with nutrient solution. Three weeks after planting, the roots were trimmed to 60 mm, and the plants were transferred to the nutrient solution for additional growth. After growing for 1 week in the nutrient solution, tomato seedlings were inoculated by replacing the nutrient solution with nutrient solution containing cystosori (20 mg/liter, wt/vol) that were scraped from the scab lesions. Zoosporangia of *S. subterranea* were observed in root hairs and epidermal cells of the seedlings 2 weeks after inoculation. To our knowledge, this is the first report that confirms the presence of *S. subterranea* on potato in Costa Rica.

References: (1) R. Amador. Invest. Agri. Costa Rica. 1(1):16, 1987. (2) U. Merz. Bull. OEPP 19:585, 1989.

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