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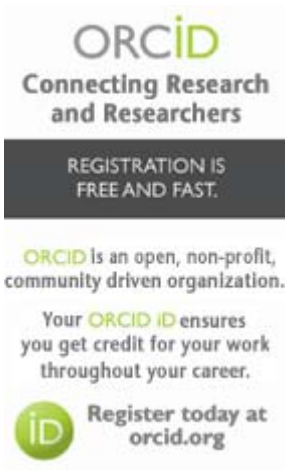

plant disease

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DISEASE NOTES

First Report of Slippery Skin Caused by *Burkholderia gladioli* in Stored Onion Bulbs in Mexico

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The main storage warehouse for fruits and vegetables in Los Mochis, Sinaloa, Mexico, receives 2,000 tons of onion bulbs during July and August every year. A severe outbreak of slippery skin on white onions occurred after 2 weeks of storage in August 2015. The shipments were received from seven commercial fields in the state of Zacatecas, Mexico, where precipitation varied from 60 to 90 mm during harvest; the incidence in storage ranged 2 to 5% in cvs. White Crown, Azteca, and Carta Blanca. Multiple scales in symptomatic bulbs were water-soaked and creamy yellow in color. To isolate, symptomatic scales were surface sterilized with 0.5% sodium hypochlorite, blotted dry on a sterile paper towel, and a piece of symptomatic tissue (1.0 cm^2) excised from the margin and macerated in 500 µl of sterile distilled water. A loopful of bacterial suspension from each sample was streaked onto nutrient agar (NA) and incubated at 28°C. Twelve isolates of an unknown bacterium were obtained. After 72 h of growth at 41°C on NA, bacterial colonies were round, creamy, non-mucoid, and produced a diffusible yellow pigment. All isolates were Gram negative bacilli, oxidase-positive; utilized arabinose, manitol, sorbitol, sucrose, glucose, lactose, benzoate, arginine, but not β-alanine and tartrate. All isolates hydrolyzed gelatin and Tween 80 but were negative for arginine dehydrolase, nitrate reduction, and starch hydrolysis. On yeast extract dextrose calcium carbonate agar (YDC), the colonies were brown and produced a diffusible brownish pigment and induced hypersensitivity reaction in tobacco cv. Xanthi. The isolates were identified as *Burkholderia gladioli* on the basis of morphological, physiological, and biochemical tests (Kowalska et al. 2015; Schaad et al. 2001). Genomic DNA PCR amplification of four isolates (Zacatecas 1-4) at the 16-23S rDNA intergenic spacer region using the species specific primers GLA-F and GLA-R (Furuya et al. 2002) followed by phylogenetic analysis grouped our specimens (GenBank KX890473-KX890476) with *B. gladioli*. Pathogenicity tests were conducted twice in whole white bulbs cv. Carta Blanca, which were disinfected by dipping in 1.0% sodium hypochlorite for 2 min. Three bulbs were injected with each of the 12 isolates with a 3.0-

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ml syringe at a depth of 1.0 cm with a bacterial suspension (10^8 CFU/ml) on two opposite sides of each bulb; control bulbs were infiltrated with distilled sterile water. After inoculation, bulbs were maintained in a moist chamber to ensure 100% relative humidity and incubated at 28°C for 7 days. All isolates caused soft rot which varied from 1.31 to 3.12 cm^2 around the inoculation point; symptoms were similar to those observed in naturally infected bulbs. No symptoms were observed in control bulbs. To fulfill Koch's postulates, the pathogen was reisolated from the symptomatic bulbs and identified applying the same methods as in original isolates. Although *B. gladioli* has been reported causing leaf stripe and stem rot of maize in Mexico (Gijón-Hernandez et al. 2008), this is the first report of the same pathogen causing slippery skin in onion in this country.

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