First Report of *Gliocephalotrichum bulbilium* and *G. simplex* Causing Fruit Rot of Rambutan in Puerto Rico

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Post-harvest disease losses of rambutan (*Nephelium lappaceum* L.) have been reported worldwide and several pathogens have been associated with fruit rot (3,4). In 2011, fruit rot of rambutan was observed on 11-year-old trees at the USDA-ARS Tropical Agriculture Research Station in Mayaguez, Puerto Rico. Infected fruit sections (1mm^2) were surface-sterilized, rinsed with sterile deionized-distilled water and transferred to acidified potato dextrose agar (APDA). *Gliocephalotrichum bulbilium* J.J. Ellis & Hesseltine (*Gb*) and *G. simplex* (J.A. Meyer) B. Wiley & E. Simmons (*Gs*), were identified using a taxonomic key (1). In Corn Meal Agar (CMA), five isolates of *Gb* were light yellow to light brown. Conidiophores had sterile stipe extensions ranging from 120 to 150 µm long and were produced contiguous to the erect conidiogenous penicilli. Conidia were unicellular, smooth, oblong to elliptical, and 5.5 to 7.5 µm long by 2.0 to 2.5 µm wide. Bulbilloid aggregates were observed and averaged 70 µm in length. In CMA, five isolates of *Gs* were light brown to chestnut-brown. Conidiophores had sterile stipe extensions 130 to 180 µm long were produced approximately 15-30 µm away from the conidiogenous penicilli. Conidia were unicellular, smooth, cylindrical to elliptical, and with slightly curved ends ranging from 6.5 to 8.5 µm long by 2.0 to 2.5 µm wide. Chlamydospores were unicellular, brown, smooth and thick-walled, averaging 35 µm in length. Pathogenicity tests were conducted on five detached fruits per isolate. Five isolates of each *Gliocephalotrichum* spp. were inoculated on fruits using 5-mm mycelial disks of 8-day-old pure cultures grown in APDA. Untreated controls were inoculated with APDA disks only. Inoculated fruit was kept in a humid chamber for eight days at 25˚C under 12 hours of fluorescent light. Test was repeated once. Five days after inoculation (DAI), white mycelial growth for *Gb* and golden mycelial growth for *Gs* were observed on rambutan fruits. Eight DAI, fruit rot and aril (flesh) rot symptoms were observed on fruits inoculated with isolates of *Gb* and *Gs*. Infected fruit changed in color from red to brown, and, on average, mycelia of *Gb* and *Gs* covered 50 and 60% of the fruit, respectively. Conidiophores were observed on spintems (hair-like appendages). Control fruit did not rot. Both species were reisolated from diseased plant tissue, thus fulfilling Koch's postulates. For molecular identification of these species of *Gliocephalotrichum*, the ITS1-5.8S-ITS2 region of the rDNA and a fragment of the β-tubulin gene were amplified by PCR and aligned with other *Gb* and *Gs* sequences in NCBI Genbank for comparisons. The sequences submitted to Genbank included *Gs* accession nos. JQ688045 and JQ688046 and *Gb* accession nos. JQ688044 and JQ68847 for the ITS sequences. For the β-tubulin gene, *Gs* accession nos. JQ688049 and JQ688050 and *Gb* accession nos. JQ688048 and JQ688051. Both DNA regions had 99.9 to

100% sequence identity to other isolates of *Gb* and *Gs* reported in GenBank (1). *Gliocephalotrichum* spp. have been associated with rambutan fruit rot in Hawaii, Sri Lanka and Thailand (2,4). To our knowledge, this is the first report of *G. bulbilium* and *G. simplex* causing fruit rot of rambutan in Puerto Rico.

References: (1) C. Decock et al. Mycologia 98: 488, 2006. (2) K. A. Nishijima and P. A. Follett. Plant Dis. 86:71, 2002. (3) L. M. Serrato et al. Phytopathology 100: S176, 2010. (4) D. Sivakumar et al. J. Natn. Sci. Coun. Sri Lanka 25: 225-229. 1997.