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DISEASE NOTE

First report of powdery mildew caused by *Podosphaera xanthii* on *Cucurbita maxima* in Korea

In-Young Choi[1] · Young-Joon Choi[2] · Hyeon-Dong Shin[3]

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Cucurbita maxima Duchesne, commonly called winter squash, is an annual vining-type plant in the family Cucurbitaceae, that originates in South America. It is cultivated for edible fruits or ornamental colourful fruits in many countries. During August 2013, *C. maxima* plants showing powdery mildew symptoms were observed in Korea. Circular to irregular colonies formed white patches on both sides of the leaves, petioles and young stems. As the disease progressed, white mycelium covered the entire leaves, causing leaf distortion and necrosis. No symptoms were found on fruits and inflorescence. Hyphae were flexuous to straight, branched, septate, and 5 to 7 μm wide. Appressoria on the mycelium were nipple-shaped or nearly absent. Conidiophores were straight, 120 to 220 × 11 to 13 μm, producing 2 to 5 immature conidia in chains with a crenate outline. Conidiophore foot-cells were cylindric with slightly swollen base and 40 to 75 μm long. Conidia were ellipsoid-ovoid to barrel-shaped, 30 to 40 × 18 to 22 μm in size, with a length/width ratio of 1.4 to 2.0, and contained distinct fibrosin bodies. Conidia produced simple to forked germ tubes laterally. No chasmothecia were found during the growing seasons. The morphological characteristics were consistent with those of *Podosphaera xanthii* (Castagne) U. Braun & Shishkoff (Braun and Cook 2012). To help morphological identification, the internal transcribed spacer (ITS) region of isolate KUS-F27525 was amplified using primers ITS5/P3, and sequenced directly. A 590 bp fragment was obtained and the sequence was deposited in GenBank (accession No. KX061106). A GenBank BLAST search of the Korean isolate showed >99% similarity (589/590) with the sequence of different *P. xanthii* isolates (AB462800, KJ472787, KP120970, KP120971, KP120972, etc.). Powdery mildew of *C. maxima* caused by *Podosphaera* species has been recorded globally but not in Korea (Farr and Rossman 2019). Previously, *C. moschata* and *C. pepo* var. *oleifera* were reported to be infected with *P. xanthii* in Korea, therefore, this is the first report of powdery mildew caused by *P. xanthii* on *C. maxima* in Korea. Three voucher specimens have been deposited in the Korea University Herbarium (Accession Nos. KUS-F27525, F27901, F28672).

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✉ Hyeon-Dong Shin
hdshin@korea.ac.kr

[1] Department of Agricultural Biology, Chonbuk National University, Jeonju 54896, South Korea

[2] Department of Biology, Kunsan National University, Gunsan 54150, South Korea

[3] Division of Environmental Science and Ecological Engineering, Korea University, Seoul 02841, South Korea