**Disease Note**

# FIRST REPORT OF POSTHARVEST ROT CAUSED BY *PHOMOPSIS LONGANAE* ON LYCHEE COMMERCIALIZED IN ITALY

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During 2012, several postharvest fruit rots were observed on three lots of lychees (*Litchi chinensis* Sonn.) cv. Bengali-Mauritius coming from South Africa and commercialized in Italy, with an average incidence of 17%. Fruit blotch resulted in brown discoloration of the rind at the stem-end, rapidly expanding to the whole fruit. Tissues were excised from surface-sterilized fruit, cultured on PDA at 24°C in the dark. Colonies appeared coarse, at first whitish then brown, and produced dark pycnidia (Ø: 0.5 mm), which exuded two types of conidia. α-conidia (2.9-6.7 × 1.6-2.6 µm) were hyaline, unicellular, ellipsoidal to fusiform, biguttulate. β-conidia (9.0-16.0 × 0.9-1.2 µm) were hyaline, unicellular, filiform, curvular. Conidiophores were branched, septate and hyaline. Conidiogenous cells were phialidic, sub-cylindrical, hyaline and enteroblastic. Sclerotia were not produced. α-conidia were significantly shorter than *P. litchi-chinensis* or *Diaporthe litchicola* (Tan *et al*., 2013). The morphology corresponded to the description of Chi (2000) for *Phomopsis longanae* Chi & Jiang. Fungal DNA was amplified using universal primers ITS1/ITS4 and the amplicon (Accession No. JX417145; 512 bp) showed 98% sequence similarity to *Phomopsis* sp. and only 90% similarity with *D. litchicola*. Pathogenicity tests were performed on three isolates of *P. longanae*, whose conidial suspensions ($10^5$ conidia/ml) were placed on artificial wounds of ripe lychee cv. Bengali-Mauritius. Ten days after inoculation, fruit rot was observed and *P. longanae* was reisolated. Previously, *P. longanae* was reported on lychee in southern China (Lin and Chi, 1992). To our knowledge, this is the first report of *P. longanae* causing a postharvest fruit rot of lychee in Italy. The pathogen should be carefully monitored to avoid its establishment on the recently established production of lychee in southern Italy.

Chi P., 2000. Records of Fungal Diseases of Fruits in Guangdong Province. China Agricultural Press, Beijng.

Lin S.M., Chi P.K., 1992. Some new species and new records of genus *Phomopsis* in China. *Journal of South China Agricultural University* **13**: 93-97.

Tan Y.P., Edwards J., Grice K.R.E., Shivas R.G., 2013. Molecular phylogenetic analysis reveals six new species of *Diaporthe* from Australia. *Fungal Diversity* **61**: 251-260.

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**Disease Note**

# FIRST REPORT OF *CLADOSPORIUM OXYSPORUM* CAUSING LEAF SPOT OF *ROSA INDICA* IN PAKISTAN

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In December 2014, necrotic leaf spots were observed on more than fifty rose (*Rosa indica*) plants in a private garden at Lahore, Pakistan, all showing the same symptoms The infected plants were 1-2 year old and on an average 90% of the leaves were covered with 2-5 mm circular black spots, with irregular margins without chlorosis around the margins. Initially, infected leaves remained attached to the plants but dropped when the spots coalesced and covered more than 80% leaf area. No symptoms were observed on flowers. For pathogen isolation, one spot per leaf from six symptomatic leaves of different plants were cut into pieces, surface sterilized, inoculated on 2% malt extract agar (MEA) and incubated at 25 ± 2°C. Morphological observations were made on 7-day-old pure cultures. Colonies were greenish black and attained the diameter of 4 mm. Conidiophores were macronematous, smooth walled, up to 500 µm long and 4-5 µm wide, with intercalary and terminal swellings. Conidia were pale brown arising from terminal swelling of conidiophores, in the form of simple or branched chains. Conidia were spherical, subspherical or limoniform, 3-6 µm in diameter; ramoconidia were 2-4×7-3 µm in size. A representative pure culture of the fungus was deposited to First Fungal Culture Bank of Pakistan under the accession No.FCBP1517. Based on morphology, the fungus was identified as *Cladosporium oxysporum* (Bensch *et al*., 2010). For sequencing of ITS region, a DNA fragment of *ca.* 600 bp was amplified using universal primer pair ITS1/ITS4 and total genomic DNA as template. BLASTn results indicated that ITS nucleotide sequence of this strain (KT283681) had 99% similarity with many other isolates of *C. oxysporum* in GenBank, including KT936546, LC040920, KJ475816 and JQ775499. Pathogenicity test was performed three times on young potted rose plants using two different isolates. Since the inoculum of this fungus persists in soil, conidia from pure cultures were suspended in sterilized water ($10^7$ spores/ml) and sprayed in the soil of three healthy plants; three control plants were treated similarly with sterilized water. All plants, covered with polythene bags, were kept in a growth chamber at 23 ± 2°C. Necrotic spots similar to those described above started appearing on leaves only on inoculated plants after 21 days of incubation. Re-isolation of same fungus fulfilled Koch's postulates. To our knowledge, this is the first report of *R. indica* leaf spot caused by *C. oxysporum* in Pakistan.

Bensch, K. Groenewald J.Z., Dijksterhuis J., Starink-Willemse M., Andersen B., Summerell B.A., Shin H.-D., Dugan F.M., Schroers H.-J., Braun U., Crous P.W., 2010. Species and ecological diversity within the *Cladosporium cladosporioides* complex (Davidiellaceae, Capnodiales). *Stud Mycol.* **67**: 1-94.

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