New Disease Reports

Cryptococcus uzbekistanensis causing canker on stone fruit trees

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Received: *16 Feb 2015.* ***Published:*** *30 Mar 2015.* ***Keywords:*** *Yeast-like, 26S rRNA gene, pathogenicity*

In May 2012, dark brown to black sunken lesions were observed on twigs and branches of stone fruit trees in several production regions in central provinces of Iran, appearing as typical stem cankers upon expansion. Following streaking of water suspensions of the canker tissues on sucrose nutrient agar (SNA) and potato dextrose agar (PDA), yeast-like round, whitish, mucoid colonies were predominant among colony types recovered. To confirm Koch's postulates, *Prunus persica* was inoculated with suspensions containing 10^5 to 10^6 yeast cells per ml followed by pricking with needles. Canker symptoms were observed on the stems within five to ten days after inoculation (Fig. 1). No symptoms were produced on control plants inoculated as above with sterile water. Yeast isolates with characteristics identical to the original isolate were re-isolated from stem segments showing symptoms. Yeast-like cells, some in the process of budding, were observed on microscopic examination of the colonies grown on SNA. Genomic DNA was extracted from the cells growing on SNA (Ausuble *et al*., 1992; Mirhendi *et al*., 2001). The 26S rRNA gene (Scorzetti *et al*., 2002) was amplified with PCR and sequenced. The sequences for isolates A7 and U1 (GenBank Accession Nos. KJ395118 and KM518308 respectively) were compared with those previously deposited in GenBank. The nucleotide sequence analysis and resulting phylogenetic tree created by MEGA5 software showed that the sequences of 26S rRNA gene of the isolates from peach show high homology with sequences from *Cryptococcus uzbekistanensis* (Fig. 2). The conclusion from the molecular analysis is that the agent causing canker on stone fruit trees closely resembles *C. uzbekistanensis*. *Cryptococcus* species are dimorphic fungi, but they mainly occur in the yeast form in both the host and in the environment and usually reproduce by budding. *Cryptococcus uzbekistanensis* has previously isolated from soil in a desert near Buchara in Uzbekistan (Fonseca *et al*., 2011). To our knowledge, this is the first report on the pathogenicity of this species on stone fruit trees. *Cryptococcus adeliensis* has previously been reported to cause cankers on stone fruit trees (Borhani *et al*., 2013).

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Figure 1

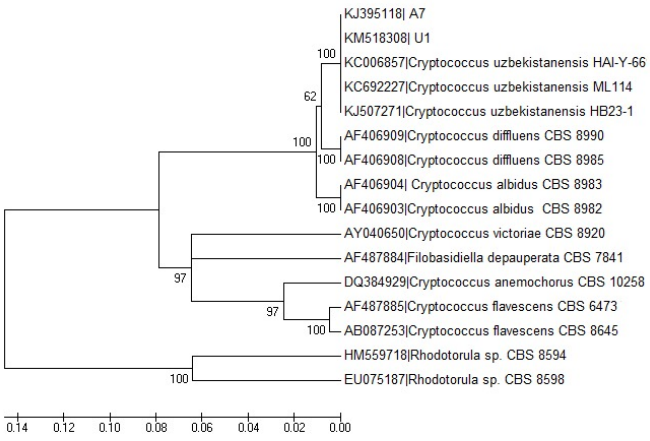

Figure 2

To cite this report: Dehghan-Niri M, Rahimian H, Babaeizad V, 2015. *Cryptococcus uzbekistanensis* causing canker on stone fruit trees. *New Disease Reports* **31**, 13. http://dx.doi.org/10.5197/j.2044-0588.2015.031.013

This report was published on-line at www.ndrs.org.uk where high quality versions of the figures can be found.