

Title Internal fruit rot of netted melon caused by *Pantoea ananatis* (= *Erwinia ananas*) in Japan
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Abstract

An internal fruit rot with a malodor was found in netted melons (*Cucumis melo* L.) in commercial greenhouses in Kochi Prefecture, Japan, in 1998, despite their healthy appearance and lack of water-soaking or brown spots on the surface. A yellow bacterium was consistently isolated from the affected fruits. To confirm the pathogenicity of eight representative isolates of the yellow bacterium, we sub-inoculated ovaries (immature-fruits) 5–7 days after artificial pollination, with a pin smeared with bacteria. After the melon fruits had grown for 60 more days, an internal fruit rot resembling the natural infection appeared, and the inoculated bacterium was reisolated. The melon isolates had properties identical with *Pantoea ananatis*, such as gram-negative staining, facultative anaerobic growth, indole production, phenylalanine deaminase absence, and acid production from melibiose, sorbitol, glycerol, and inositol. Phylogenetic analysis based on 16S rDNA sequences showed that the melon bacterium positioned closely with known *P. ananatis* strains. The melon bacterium had indole acetic acid (IAA) biosynthesis genes (*iaaM* and *iaaH*) and a cytokinin biosynthesis gene (*etz*). The bacterium could be distinguished from the other '*Pantoea*' group strains by rep-PCR genomic fingerprinting. From these results, the causal agent of internal fruit rot was identified as a strain of *P. ananatis* [Serrano in (Philipp J Sci 36:271–305, 1928); Mergaert et al. in (Int J Syst Bacteriol 43:162–173, 1993)].

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