

Characterisation of *Pectobacterium carotovorum* causing soft rot on *Kalanchoe gastonis-bonnierii* in Malaysia

Abstract

Soft rot disease can be found worldwide on fleshy storage tissues of fruits, vegetables and ornamentals. The soft rot *Pectobacterium carotovorum* subsp. *carotovorum* (Pcc) is an important pathogen of *Kalanchoe* spp. and other ornamental plants. The disease occurs on crops in the field, greenhouses and during transit, resulting great economic damages. The economic importance of crop loss by soft rot bacteria varies by severity of the disease and value of the crop. A destructive disease on *Kalanchoe gastonis-bonnierii* was observed in commercial ornamental plant greenhouses in Cameron highland and Melaka, Malaysia in 2011. Samples suspected to be infested with *Pectobacterium* spp. were brought to the laboratory. In pathogenicity test, a suspension of 10⁶ CFU/ml of strains was able to cause soft rot on leaves and stems. A 434 bp banding pattern on 1% agarose gel was produced in polymerase chain reaction (PCR) amplification of pectate lyase encoding gene (Pel gene). PCR amplification of the intergenic transcribed spacer (ITS) (16S–23S rRNA) ITS region with G1 and L1 primers produced two main bands at about 540 and 570 bp. The ITS-PCR products were digested with *Rsa*I restriction enzyme. For discrimination of the *P. carotovorum* subsp. *carotovorum* (Pcc) from *P. carotovorum* subsp. *odoriferum* (Pco), all isolates subjected to α -methyl glucoside test. All isolates were identified as Pcc based on phenotypic and molecular methods. This is the first report of soft rot disease caused by *P. carotovorum* subsp. *carotovorum* on *K. gastonis-bonnierii*, in Malaysia.

Keyword: Detection; Identification; Ornamental plant; *Kalanchoe*; Soft rot.