Dagustu N, Cooper RM (2006) Detection of cell wall degrading enzymes produced by P. violae in carrot', International Conference on: Information Systems in Sustainable Agriculture, Agroenvironment and Food Technology, 20-23 September, Volos, Greece, pp. 730-739.

Abstract

The pathogenicity determinants of *Pythium violae* (*P. violae*) are unknown, but cellulase, suberinase and pectin lyase are the major cell wall degrading enzymes, which may aid in penetration of the suberized endodermis that surrounds carrot taproots and may contribute to the necrotic watery lesions seen in the cavity spot disease. This investigation clearly shows that *P. violae* is capable of producing cell wall degrading enzymes in vitro and in vivo. The main enzyme found in this study was cellulase. Production of cellulase by this pathogen occurred on all carbon sources (pectin, cellulose, glucose, cell walls) used in vitro and was detected late in lesion formation *in vivo*. It was also shown that *P. violae* secretes pectin lyase (PL) and suberinase, which presumably facilitate penetration of unwounded periderm of carrot roots. Suberin production was found later stages of the pathogen growth. PL remained mostly to be bound to the mycelia.

Despite the direct evidence gained that *P. violae* does produce cell wall degrading enzymes, this study does not prove their role in pathogenesis. It is necessary to determine whether these enzymes are pathogenicity determinants or if they contribute to virulence.