

their corresponding hosts. They also showed pathogenicity to the cultivated vegetables such as lettuce, cabbage and broccoli. The seven weeds have not been recorded as hosts of *S. sclerotiorum* in Korea and in many other countries were *Mazus pumilus*, *Rumex crispus*, *Chenopodium ficifolium*, *Stellaria aquatica*, *Galinsoga parviflora*, *Stellaria media*, and *Erigeron annuus*. Among the weeds, *Mazus pumilus* and *Rumex crispus* were similarly susceptible to the pathogen as cultivated vegetables in pathogenicity tests. In the fields, sclerotinia rot on the two weeds occurred often earlier than the cultivated vegetables and other weeds. Consequently, it is considered that the two susceptible weeds play an important role in multiplication and dispersion of the pathogen in the organic farming system. Detailed roles of the weeds in multiplication and dispersion of the inoculum to the vegetables are under investigation.

**A-08 Red-pinkish *Colletotrichum acutatum* isolates associate copper-dependent enzyme activities, laccase and tyrosinase.** Jae Sung Park<sup>1</sup>, Myung Yong Shim<sup>1</sup>, Chang Won Choi<sup>1, 2</sup> and Seong Hwan Kim<sup>3</sup>. <sup>1</sup>Department of Biology & Medicinal Science, Pai Chai University, Daejeon 302-735, Korea, <sup>2</sup>Biomed RRC, Pai Chai University, Daejeon 302-735, Korea, and <sup>3</sup>Department of Microbiology, Dan Kook University, Cheonan, Korea.

Eight isolates of *Colletotrichum acutatum* showing red, pink, brown and black pigmentation were investigated for their possible association with copper-dependent oxidase such as laccase and tyrosinase activities. Both enzymes are known to be involved in melanin synthesis. The pigmentation depends on the composition of the growth medium. Three isolates grown in malt agar show pink color, on the other hand six isolates grown in PDA produce strong red color. Those isolates in PDA medium produce initially pink color that turns into reddish color after prolonged incubation. In addition, the intensity of both laccase and tyrosinase activities was higher in PDB than in malt. The localization of tyrosinase activity was also found in the hyphae of *C. acutatum* incubated with L-DOPA (3,4-dihydroxy phenylalanine), showing strongly positive reaction by histochemical analysis. Inhibitors of melanin synthesis such as hydroquinone, arbutin and kojic acid effectively inhibit the tyrosinase activity. DOPA staining after native PAGE identified one band with significant tyrosinase. This is the first report of red-pink pigmentation produced by *Colletotrichum* sp., associated with enzyme activities of fungal laccase and tyrosinase.