

Chitchanok Kasee 2015: Infection Process of *Colletotrichum capsici* (Syd.) E.J. Butler & Bisby, Causal Pathogen of Anthracnose on Pitaya Fruit (*Hylocereus undatus* (Haw.) Brit. & Rose.), and Its Control. Master of Science (Plant Pathology), Major Field: Plant Pathology, Department of Plant Pathology. Thesis Advisor: Associate Professor Somsiri Sangchote, Ph.D. 88 pages.

Anthracnose disease of pitaya fruit in Samut Sakhon, Nakhonratsima, Chanthaburi and Loei provinces were conducted. Losses were estimated except fruit from Loei province, Samut Sakhon was the highest at 75.0 %. Identification of *Colletotrichum* spp. by their morphological characteristics and molecular analysis was performed. The results showed that *Colletotrichum capsici* and *Colletotrichum gloeosporioides* were causal organisms of anthracnose. Infection of *Colletotrichum* spp. in the field starting from bud stage to mature stage (8 weeks) was investigated. The highest fruit infection were showed at 8 weeks of its development at 10.0% whereas *C. capsici* was at 7 weeks at 1.5 %. Conidia of *C. capsici* produced germ tube and formed appressoria at 3 hrs. after inoculation on harvest fruits. After 24 hrs., conidial germination was the highest at 89.4% and disease incidence at 80.0% was shown. *C. capsici* infected into epidermal cell of fruit at 2 days after inoculation, starting to produce acervuli in the infected area and symptom start to develop at 4 days. Titratable acidity (TA), total soluble solid (TSS) and ascorbic acid of infected fruit were not significantly different with non-infected fruits.

Prochloraz was sprayed at 10 days before harvest could not control anthracnose disease on the harvested fruits. Postharvest treatment by dipping the fruits in prochloraz at concentration 500 ppm for 3 min, reduced disease incidence to 80% on inoculated fruits. Fruits naturally infection were dipped in hot water at 53°C for 1 min, reduced disease incidence to 36.6% whereas dipped prochloraz concentration at 250 ppm for 1 min decreased disease incidence to 59.8%

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Thesis Advisor's signature

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