Araya Chaidee 2015: Infection of *Bipolaris cactivora* (Petrak) Alcorn on Dragon Fruits (*Hylocereus undatus* (Haw.) Britton and Rose) and Postharvest Treatments to Control the Disease. Master of Science (Plant Pathology), Major Field: Plant Pathology, Department of Plant Pathology. Thesis Advisor: Associate Professor Somsiri Sangchote, Ph.D.
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Disease incidence of fruit rot, caused by *Bipolaris cactivora,* on dragon fruits obtained from Nakorn Ratchasima and Samut Sakorn provinces was at 4 and 14.7% respectively, whereas Loei province was not conducted. This pathogen was identified by its morphological characteristics and confirmed by molecular technique. It infected the fruit directly and through wounds. Conidia germinated and produced appressoria within 3 hours after inoculation under the moist condition at 25ºC. Infection mycelia penetrated through the cell junction and stomatal opening. After 3 days, hypha were extended both intracellular and intercellular, later, conidiophores and conidia were formed on infection area. Dipping conidia of *B. cactivora* in hot water at 55ºC for 5 minutes reduced conidial germination by 97.4 % and no significant difference between 51 and 53ºC. Increasing hot water temperature and dipping periods decreased conidial germination but heat injury started to develop.

Postharvest treatments by dipping in hot water at 51, 53, and 55ºC for 1 minute showed fruit rot at 53.5, 49.1, and 44.8%, respectively. *In vitro*, PDA amended with difenoconazole 37.5 ppm showed complete inhibition of mycelial growth of *B. cactivora*. Dipping the fruits in this chemical at the same concentration for 3 minutes at ambient temperature or hot difenoconazole at 53ºC for 1 minute showed complete control of fruit rot. The chemical residue in the fruits treated with difenoconazole 37.5 ppm for 3 minutes was 0.07 mg/kg after stored at 25 ºC for 5 days.

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