Wanida Seehachai 2009: Seed Transmission of *Alternaria zinniae* Pape, Causing Leaf Spot in Zinnia. Master of Science (Agriculture), Major Field: Plant Pathology, Department of Plant Pathology. Thesis Advisor: Associate Professor Somsiri Sangchote, Ph.D. 64 pages.

The infection biology of *Alternaria zinniae* were examined for conidia germination, number of germ tubes per conidium and appressoria formation. Conidia of *A. zinniae* germinated within 3 hr after inoculation and reached to maximum (100%) at 15 hr with an average of 5 germ tubes per conidium. Appressoria formed both on stomata and epidermal cell, but mostly the latter.

Disease severity (%) on the leaves of the inoculated zinnia plant at the age of 1 to 8 weeks were 2.8%, 4.7%, 10.3%, 18.8%, 17.4%, 16.4%, 23.5% and 31.3%, respectively. The blossoms were inoculated by *A. zinniae* at concentrations of 2.5 x 10^5, 2.5 x 10^6 and 2.5 x 10^7 conidia per ml. Disease severity on these plants were 18.0%, 16.1%, and 17.3% and the level of infected seeds were 99.6%, 75.3% , and 75.9%, respectively.

The infection of *A. zinniae* in zinnia seed is mostly in the seed coat. Transmission study of *A. zinniae* infected seed at 52% using seedling symptom test and sand method showed that seedling was infected at 59.8% and 56.0%, respectively.

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