The Relationship Between Molting, Number of Conidia, Developmental Stage, Susceptibility of Cotton Aphid to *Verticillium lecanii*

Jeong Jun Kim, Dae Joon Im, Kyu Chin Kim[1] and Dong Ro Choi

Division of Entomology, NIAST, RDA

[1]Dept. of Agrobiology, Chonnam National University, Republic of Korea

Aphids are some of the most serious pests of greenhouse vegetables in the world. Verticillium lecanii has high virulence to aphids and whiteflies and is under consideration as a microbial control agent. V. lecanii isolate CS625 isolated from Korea is being considered for development asa mycopesticide to control cotton aphid in Korean greenhouses. A study was conducted to understand the influence of molting on mortality of aphids at various developmental stages. Mortality of cotton aphid inoculated with V. lecanii CS625 varied with the developmental stage of the host. LT50 in the 3rd instar nymphs and adults was shorter than in the 1st instar nymph. The number of attached spores on the surface of 1st instar nymphs of cotton aphid was approximately half of that on 3rd instar nymphs and adults. Rate of spore germination on 1st instar nymph surfaces was also lower than on the surface of other stages of the aphid. This result suggests that the difference of spore germination on the different developmental stages is caused by the difference of cuticle composition, especially lipid, each stage (No data). Molting removed the conidia from the host body. After molting, the number of the attached conidia on the insect body and exuviae, respectively, were significantly different. The results suggest that early nymphal stages of aphids may escape fungal disease because they molt quickly and the ecdysis removes conidia from the body before they can penetrate the host. In conclusion, low mortality in the 1st instar nymphs was considered to be due to low number of attached conidia, its lower germination rate and several ecdyses.