ABSTRACT


*Lecanicillium lecanii* (Zimm.) (Viegas) Zare & Gams is one of the most entopathogenic fungi that can be used to control pod sucking bug *Riptortus linearis* F. (Hemiptera: Alydidae) egg. The effectiveness of fungi were affected by intraspecies virulence, conidia density, host developmental stage, and environmental factors. The purposes of this research are: (1) to study the physiological character of various *L. lecanii* isolates and their virulence to pod sucking bug *R. linearis* egg, (2) to obtain the maximal conidia density of *L. lecanii* to control different ages of *R. linearis* eggs, and (3) to study the effect of several vegetable oils as adjuvant to increase the effectiveness of fungi. Among 37 isolates tested, isolates L1-JTM11, L1-JTM12, L1-JTM15, and L1-TB2 were judged as the most virulent. The fungi that were virulent were isolated from insect cadaver killed by fungi in the field, while fungi isolated from the soil in general did not show high infectivity. The virulent isolates showed higher growth rate, formed wholly colony, produced more conidia than avirulent isolates, had large conidial size up to 6.5 x 2.5 µm. More than 95% germ tubes of virulent isolates were formed after 12 hours incubation in the water. The conidia density of $10^8$/ml was found as an effective preparation against newly laid and less than one day old insect eggs. During *in vitro* experiment, peanut, soybean, and coconut oil increased the growth and development of the fungi. The persistence of fungal conidia on the soybean leaf surface could be maintained until seven days after application. Mixing the vegetable oil at concentration 10 ml/l fungal suspension, increased infectivity of the fungi and decreased hatchability of the egg until 20%. Therefore, damage intensity as indicated by sum of spots, empty pods, and weight of grains were reduced. Adding vegetable oil to the fungal preparation, yielded 40% more grain weight as compared to control. Among three vegetable oils tested, the effect of peanut oil was more pronounced than soybean and coconut oil.

Key words: conidia, vegetable oils, persistent, soybean pod, virulence.