Factors Affecting on the Population Levels of Cigarette Beetle *(Lasioderma serricorne)*

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Ceylon tea as a beverage has been enjoyed by people all over the world for generations. It still has the value and interest as a beverage with many health benefits. Over a significant period of time, Sri Lankan tea industry has made progress in expanding the value added tea products. At present, Sri Lanka's value added tea exports include instant tea, tea bags, iced tea, flavored tea, green tea, herbal tea, ready to drink tea and organic tea. Herbal tea has become a major segment of value addition sector. Herbal teas draw higher market prices not only for tea's beneficial values but also the medicinal value of the herbs. These herbs are highly vulnerable to the attacks by different insect pests at storage conditions. Cigarette beetle is being identified as the most prominent storage pest in herbs warehouses. This experiment was therefore designed to identify the optimum storing condition that depress the population level of the cigarette beetle. Temperature, moisture and light wavelength were tested in this investigation. Three experiments were conducted separately to determine the effect of moisture (5%, 7%, 9%, 11%), temperature (21℃, 24℃, 27°C, 30°C) and light condition (Blue, Red, Pure white, Day light). Pheromone traps were used as the monitoring traps for to measure the population level. Sex ratio was determined by visual observation of chemically treated beetles through the stereomicroscope for their sex. The temperature level of 21°C and the moisture level of 5% helped to reduce the population level of the cigarette beetle. Red light condition recorded a significant reduction of population level than that of other tested wavelengths. Male to female sex ratio was identified as 1 to 4. Reduction of male insect population can lead to drastic reduction of whole insect population as females in the next generation would not have adequate males for mating. Longevity of the captured beetle was recorded up to 4 weeks. Thirty five percent of beetles were able to live up to 21 days while 25% survived up to 14 days.

Keywords: Cigarette beetle, Herbal tea, Storage conditions