

**ICE 2012** DAEGU  
KOREA

# XXIV International Congress of Entomology

'New Era in Entomology'

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**PROGRAM**





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## Lethal effects of four insecticides on different developmental stages of *Chrysoperla carnea* Stephens (Neuroptera: Chrysopidae) in laboratory conditions.

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The common green lacewing *Chrysoperla carnea* Stephens is a general biocontrol agent of several insect pests in greenhouses. The lethal effects of four compounds including imidacloprid, lufenuron, thiametoxam and thiodicarb on eggs, 1st instar larvae and adults of *C. carnea* were studied in laboratory conditions (25±2 °C, 60±10% RH and 10-h photo phase). Dipping bioassay tests were used for eggs and residual contact method for larvae and adults. Positive relationships were detected between the concentrations of insecticides and mortality rates of various stages. However, there were considerable variations in toxicity of insecticides. Thiodicarb had no effect on eggs, whereas thiametoxam with the LC50 value of 1.90 µg ai L-1 showed the highest ovicidal activity. On larvae, thiametoxam was the most toxicant (LC50= 0.55 µg ai L-1) and lufenuron proved to be the least (LC50 = 44.02 µg ai L-1). The results of adult experiments indicated that males were more susceptible than females to all insecticides except Lufenuron to which no lethal effect was observed. Thiametoxam proved to be the most potent toxicant against males (LC50= 8.83 µg ai L-1) and females (LC50= 73.05 µg ai L-1). The use of thiametoxam should be carefully evaluated if employed in combination with *C. carnea* in IPM programs. Imidacloprid and thiodicarb are moderately harmless and lufenuron considered being safe for *C. carnea*.

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**Keywords:** *Chrysoperla carnea*, imidacloprid, lufenuron, thiametoxam, thiodicarb

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