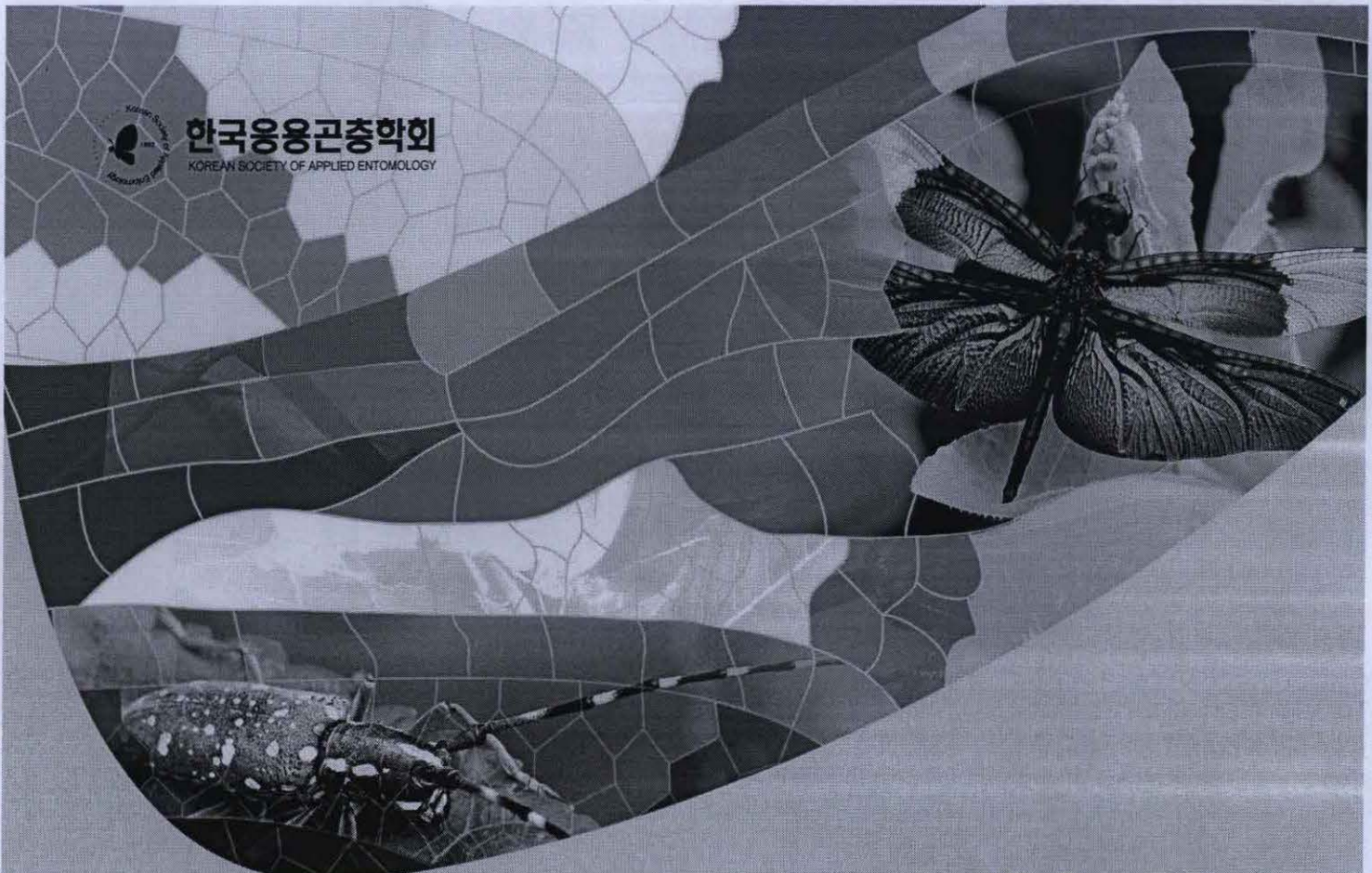




**한국응용곤충학회**  
KOREAN SOCIETY OF APPLIED ENTOMOLOGY



한국응용곤충학회

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**Cold hardiness of overwintering eggs of  
five *Lycorma delicatula* (White) populations in South Korea.**

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Cold hardiness is an important trait for insects, that enables them to survive during the winter and develop in the next season, and to extend their range. *Lycorma delicatula* (White), which became an important sporadic pest in grapevines and some other fruit trees, has spread rapidly to the most of regions in South Korea. This study was conducted to determine the cold hardiness of overwintered *L. delicatula* eggs according to geographical variation. We collected overwintering eggs in the five sites, Chuncheon, Suwon, Yeongdong, Gunsan, Daegu, on 22~25th Feb. in 2011. We treated eggs to combinations of different temperatures (-15°C, -20°C, -25°C) and exposure time (12hr, 24hr, 3days, 5days, 7days) after chilling them for 24~26 days at 5°C. And then, they were kept in the room temperature. We only analysed three sites of Suwon, Gunsan and Daegu, because of very low hatching rate at Chuncheon and Yeongdong. There were significant effects of time ( $F=36.97$  d.f.=4  $P<0.0001$ ), sites ( $F=17.28$  d.f.=2  $P<0.0001$ ), and the interaction of time and temperature ( $F=5.77$  d.f.=5  $P<0.0001$ ) at -15°C. At -20°C, eggs hatched only at 12hr and 24hr of exposure treatment. All eggs treated at -25°C failed to hatch. It appears that -25°C is around the critical temperature.

**Key words:** *Lycorma delicatula*, egg hatching, cold hardiness