

Temperature and Humidity Favorable for Colony Development of the Indoor-Reared Bumblebee, *Bombus ignitus*

Hyung Joo Yoon*, Sam Eun Kim, and Young Soo Kim

Department of Sericulture & Entomology, The National Institute of Agricultural Science and Technology, RDA, Suwon 441-744, Korea

The optimum temperature and humidity for the indoor-rearing of *Bombus ignitus* were investigated. The experimental regimes of temperature and humidity were defined to 23C, 27C and 30C under the common humidity of 65% R.H., and 50%, 65% and 80% R.H. under the common temperature of 27C, respectively.

Among the temperature regimes, 27C-rearing showed the best results, i.e., the rates of colony initiation, colony foundation and progeny-queen production at the temperature were 83%, 63% and 46%, respectively, which corresponded to 2.2-5.5 times higher values than those at other temperature regimes. Comparing with the other temperature regimes, the number of progenies produced at 27C-rearing also amounted to 16433 workers, 553 174 males and 3348 queens, which corresponded to 21.8 and 1.5 times of those at 23C and 30C, respectively.

On the humidity regimes, 65% R.H. was favorable for a big colony formation. Under the same humidity, the rates of colony initiation, colony foundation and progeny-queen production were 85%, 70% and 50%, respectively, and the number of progenies reached 18030 workers, 578179 males and 3538 queens.

Therefore, 27C and 65% R.H. are the favorable environmental conditions for colony development of *B. ignitus* in indoor rearing.