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Comparison of colony development in the bumblebees, *Bombus ignitus* and *B. terrestris*

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Survival rate depending on chilling temperatures and colony development was firstly investigated in the bumblebees, *Bombus ignitus* native to Korea and imported *B. terrestris*. Among four chilling temperature treatment of -2.5℃, 0℃, 2.5℃ and 5℃, the survival rate after artificial hibernation was best at 2.5℃ in both species. The survival rate after chilling was somewhat higher in *B. ignitus* until three months of cold treatment, but it was higher in *B. terrestris* at four months of cold treatment. In the comparison of colony development by queen bumblebees treated with CO_2, oviposition rate and preoviposition period were 72. 5% and 17.4 days in *B. ignitus* and the valued were 6.1% higher and 7.4 days shorter than those of *B. terrestris*. The period up to colony foundation and the first adult emergence were 62.8 days, 66.4 days, and 63.0 days, respectively, in the males and queens of *B. ignitus* and these were 2.1-29.5 days shorter than those of *B. terrestris*. However, the duration up to first worker emergence did not differ between *B. ignitus* and *B. terrestris*. The case of colony foundation and progeny-queen production, the estimates of which are the important indication in evaluating the quality of colony were 14.2% and 13.5%, respectively in *B. terrestris*, these values are 3.8 to 5.7 fold higher than those of *B. ignitus*. The numbers of progeny produced of *B. terrestris*, was 104.2±24.7 in workers, 317.9±144.5 in males and 27.1±27.2 in queen and these are also 1.1-1.8 fold higher than those of *B. ignitus*, suggesting that colony development of *B. terrestris* superior to that of *B. ignitus*.