

The Effect of Antiseptic and Sugar Solution on Colony
Development of the Bumblebees, *Bombus ignitus* and *B.*
terrestris

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We investigated possible effect of different concentration of sugar solution and addition of antiseptic in the solution on oviposition and colony development of *Bombus ignitus* and *B. terrestris*. The rates of oviposition, colony foundation and progeny-queen production of *B. ignitus* were 1.2-3.0 fold higher in the 40% sugar solution than those of the 50% sugar solution. The rates of oviposition, colony foundation and progeny-queen production were 1.1-2.6 fold higher in the 40% sugar solution added in 0.3% sorbic acid as antiseptic than those of the 40% sugar solution. Further, the death rate within one month was 1.7 fold lower in the 40% sugar solution added in 0.3% sorbic acid than that of 40% sugar solution alone. In the comparison of the colony development tested using imported sugar solution, the Beehappy®, the 40% sugar solution added to antiseptic and the 40% sugar solution without antiseptic, the 40% sugar solution added to antiseptic was about equal to the Beehappy® in colony development of *B. terrestris*. Further, the number of adults produced was 1.2-3.0 fold higher in the 40% sugar solution added to antiseptic than that of the Beehappy®. Therefore the 40% sugar solution was more effective than the 50% sugar solution, and the 40% sugar solution added to antiseptic was the most effective in colony development and mass rearing of bumblebee.