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# Facilitating Effects of Helpers on Oviposition and Colony Development of Bumblebee Queen, *Bombus ignitus*

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It was investigated that such helpers as worker bee, bee-cocoon and egg-cup etc, have an effect or not on oviposition and colony foundation of the bumblebee queen, *Bombus ignitus*. Among the helpers tested, the callow workers of *B. ignitus* and *B. terrestris* showed the best effects on the oviposition rates to 83% and 93%, respectively. The live cocoon as a helper improved oviposition rate over 60%. A narcotized old worker, 10 days-aged after emergence showed similar effects to a callow worker on the colony development such as oviposition rate, colony foundation and progeny-queen production. On the other hand, dried cocoon, callow honeybee worker or egg-cup did not show a positive effect as a helper. In the number of workers recruited to a foundation queen, two workers showed better effect than one worker on the colony development, with no difference between two and more.