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## **The foraging activities of *Apis mellifera* L. and *Bombus terrestris* L. on pear trees in full blossom**

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This study was examined carefully the characteristics on the foraging activities of *Apis mellifera* and *Bombus terrestris* and compared them with the effect of artificial pollination in the pear orchards. In the results that we surveyed visiting insects for collecting pollen and nectar on the flower of pear trees, 3Orders 6Families 13Species visited on the flower of pear during blossoming period in spring, 2004. The visiting rates of foraging insects in pear blossoming season were 57% in Order Hymenoptera, 42% in Order Diptera and 1% in Order Lepidoptera. The foraging time of *A. mellifera* and *B. terrestris* in the net screen houses was not different with 4sec. and 5sec., respectively. The peak time of foraging by of *A. mellifera* was recorded at 13:00-14:00, and *B. terrestris* was recorded at 11:00. As the pattern of foraging activity, 47% of *A. mellifera* collected pollen and nectar at the same time, but *B. terrestris* collected pollen only. Fruit setting rate according to the fruit setting methods was not different among 41~51%, but the rate of fruit set at no pollination had never 1%. When the quality of pear products was surveyed, the weight of a fruit, product amount per 10a and amount of market fruit per 10a according to the fruit setting methods were not nearly different. However the income of *A. mellifera* and *B. terrestris* were 9~18% higher than artificial pollination when compared with the pear fruits harvested, according to the fruit set methods in the net screen houses of 10a. Also the effect of labour reduction according to the foraging activities of *A. mellifera* and *B. terrestris* against labour of artificial pollination took remarkable profit with 94%.

**Key words** : bumblebee, *Bombus terrestris*, honeybee, *Apis mellifera*, pear, foraging activity