

Thesis Title	Effect of pollen types on growth development of honeybee workers in <i>Apis cerana</i>
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### Abstract

Pollen is the main source of protein for honeybees. The objective of this study was to study the effect of pollen types on honeybee workers in *Apis cerana*. The study comprised three types of pollen: waxy corn pollen, sunflower pollen and mixed pollen from waxy corn and sunflower. The study consisted of three experiments; 1) The effect of pollen types on development time of workers. It was found that when worker bees had been feeding on waxy corn showed the fastest egg to adult time, which was  $20.25 \pm 0.43$  days. The second was those which were feeding on mix pollens,  $20.41 \pm 0.44$  days. And the third, on sunflower pollen, was  $20.60 \pm 0.46$  days, respectively; and those times was significantly different. When comparing protein content in each pollen type on the development time of workers, the result found that protein content in waxy corn was averagely 34% which is more than in sunflower pollen which was averagely 22%. The weight of single waxy corn pollen loads recovered from honeybee foragers was averagely  $5.57 \pm 0.39$  mg per load; it was higher than a sunflower pollen loads, averagely was  $4.77 \pm 0.49$  mg per load. And the weight of all sunflower pollen bee breads in whole storage cells of was averagely  $84.87 \pm 18.78$  mg per cells, was higher than that of waxy corn pollen bee bread, which was averagely  $63.99 \pm 10.72$  mg per cells. 2) Effect of population growth of worker bees when were feeding on mixed pollen, sunflower pollen and waxy corn pollen; the study showed that the workers population growth increased about  $33 \pm 10.64\%$ ,  $29.61 \pm 14.07\%$  and  $28.98 \pm 9.02\%$ , respectively. 3) The effect of the foraging behavior on pollen types. It was found that the worker bees foraging behavior in the morning was higher than mid-day and afternoon period. The study can be concluded that types of pollen affected on development time of *Apis cerana* workers.

Keywords : Pollen types / Protein content / *Apis cerana* / Foraging behavior