

Change in Foraging Behavior of *Bombus terrestris*: Effect of Brood Size and Environmental Factors

Yong Jung Kwon and Shafqat Saeed

Dept. of Agricultural Biology, Kyungpook National University, Taegu, Korea

Activity of *Bombus terrestris* in tomato, pepper and cotton crops with relation to different number of larvae and adults in the hive and temperature variation in the hot house (polyhouse) was observed. The colony traffic and workers activity were enhanced with the number of larvae in the colony both in polyhouse and in control conditions maintained at 25°C and 50% humidity. In the same way, pollen consumption was also increased corresponding to the increase in number of brood in colony. *Bombus terrestris* foraging activity and colony traffic were decreased 65.40 and 49.46%, respectively, in hothouse with the increase in temperature from 25.05 to 32.68°C (morning to noon) in pepper field. Even though high numbers of larvae (Number of larvae= 66.67/colony) were present in the colony of the same field. In case of tomato plants there was insignificant difference in the colony traffic (19–22.57 bees/hour) from morning to evening with the same level of temperature (27.43–30.71°C), but workers activity was decreased extensively from morning to noon (58.8–24.5bees/hour). Contrary to tomato and pepper field, in cotton field colony traffic was enhanced from morning to noon (25.5–35.5bees/hour), even though temperature increased from 26.0–34.25°C. The colony traffic in hot house was counted 17.5 bees/hr. in cotton field at 43.5°C with 75 workers and 42 larvae in the colony. An increased activity at high temperature could be assumed due to the availability of sufficient amount of nectar and pollen in cotton plants for colony requirements.