



*RESEARCH PAPER*

# Hygienic behavioural response of honey bees (*Apis mellifera* and *Apis cerana*) against pin-killed brood as trait evaluation in Kashmir

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**Abstract :** In *Apis mellifera* and *Apis cerana* hygienic behavior involves recognition and removal of sick, damaged or dead brood from capped cells. We investigated whether bees react in the same way to grouped versus isolated damaged capped brood cells. Ten colonies of *Apis mellifera* honey bees and ten colonies of *Apis cerana* honey bees were used for this investigation. Capped worker brood cells aged 12 to 14 days old were perforated with the pin-killing method. After making holes in the brood cells, the combs were placed back into the hives; 24 h later the number of cleaned cells was recorded in areas with pin-killed and control brood cells. Four repetitions were made in each colony. Isolated cells were more frequently cleaned than grouped cells, though variance analysis showed no significant difference. *Apis cerana* bees also were somewhat, though not significantly more hygienic than *Apis mellifera* honey bees with mean removal of pin killed brood 97.46+/-1.37% and 83.83+/-1.13% respectively. We conclude that honey bees can detect and remove both isolated and grouped dead brood. The tendency towards greater hygienic efficiency directed towards grouped Hygienic behaviour in honey bees was studied for first time with the aim of understanding mechanisms of pathogen resistance and colony health. It shows how honey bees confer colony level resistance and remove dead and diseased brood from the colony. This hygienic behavioural study can potentially increase the procedure of screening colonies for hygiene and breeding.

**Key Words :** Hygeinic behaviour, Social insects, Honey bees

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