

Effect of colony strength and weather factors on the incidence of greater wax moth (*Galleria mellonella* Linn.)

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A study was conducted to record the incidence of greater wax moth *Galleria mellonella* in strong and weak colonies of *Apis cerana*. The rate of infestation of greater waxmoth was observed throughout the year in the weaker colonies with the highest per cent infestation being in October to February. Where as, the infestation was found to be lower during August. Further, the strong colonies with greater wax moth infestation was fairly high during March, the lowest per cent infestation was noticed during December and September.

Key words: Greater wax moth, Incidence, Colonies.

INTRODUCTION

The Greater waxmoth, *Galleria mellonella* is considered as a notorious pest of honey bee colonies which is well distributed throughout the world. The larvae often destroy the un protected combs in storage or in colonies that become weakened, especially in warm climates with mild winter. Larvae consume the honey bee comb particularly the brood combs. It also feeds on pollen stores, bee pupae and larve. The larvae while feeding form tunnels and silken webs inside the comb structure. The presence of tunnels is the indication of waxmoth infestation and capable of converting the comb into a mass of silken webs and debris. Thus, the greater waxmoth is responsible for heavy economic losses to bee keepers (Paddock, 1918; Kapil and Sihag, 1983).

MATERIALS AND METHODS

The incidence of the greater waxmoth, *Galleria mellonella* in strong and weak colonies of *Apis cerana* was studied in the UAS Apiary, GKVK campus, Bangalore. Observations on the number of colonies infested, number of combs present, the number of combs damaged, larval population, per cent colony infestation and number of deserted colonies were recorded from October 1997 to September 1998. The data on various weather parameter viz., temperature (°C), relative humidity (%), rainfall (mm) and sunshine hours at GKVK prevailing during this period of study were collected from meteriological center, GKVK to determine their influence on the wax moth infestation and their population. Pearsons product movement correlation was employed to verify

the nature of association between the various weather and incidence parameters. All sets of data were verified only for linear associations (Snedecor and Cochran, 1967).

RESULTS AND DISCUSSION

The incidence of greater waxmoth was recorded in both strong and weak colonies of *Apis cerana* from October 1997 to September 1998 (Table-1). The incidence was maximum in March (47.37%), followed by February (42.10%) and April (41.18%). Whereas it was found to be comparatively lower in July (11.76%) followed by June (15.38%) and August (16.67%). The data clearly indicated that, the highest per cent infestation was observed throughout the year in weak colonies as compared to the strong colonies. The incidence of greater waxmoth in the weaker colonies revealed that the maximum per cent (100%) infestation was recorded during October to February. Whereas it was found to be comparatively lower in August (28.57%) followed by June and July (33.33%). Examination of strong colonies revealed a lesser infestation of the moth as compared to the weaker colonies. All the strong colonies were completely free from the greater waxmoth during October, June and July. The highest number of colonies with greater waxmoth infestation was noticed in March (35.71%), followed by February (31.25%) and May (28.57%). The number of strong colonies with greater waxmoth infestation was comparatively lower in December and September (6.66%) followed by August (9.09%) and November (10.0%).

Inter-relationships verified between the number of strong colonies and per cent infested strong colonies, total