



SURVEY ON HONEYBEE DISEASES AND INSECT-PESTS IN SURGUJA OF CHHATTISGARH

G.P.Painkra

IGKV, All India Co-ordinated Research Project on Honeybees & Pollinators, RMD College of Agriculture & Research Station, Ambikapur 497001 (C.G.) India

*Corresponding Author

ABSTRACT A survey work was undertaken for diseases and enemies of Indian honeybees, *Apis indica* under All India Co-ordinated Research Project on Honeybees & Pollinators to know the status of diseases and enemies in different six villages i.e. Ranpur, Piparkhar, Jhumarpara, Silphili, Ambikapur and Kot of Surguja district of Chhattisgarh. Above beekeeping villages were selected for survey work. The beekeepers were rearing the India Honeybee, *Apis indica* at all these six selected villages. Month August to May status of different natural enemies i.e. Greater wax moth, wasp, ants, lizard, chameleon and bears were recorded. Total eighty fives colonies were recorded from above villages. Among them twenty fives colonies were infested and sixty were found healthy colonies.

KEYWORDS : *Apis indica*, diseases, Insect pests, Survey.

INTRODUCTION

Indian honeybee, *Apis indica* is a oldest species of honeybee. It is a base of Indian beekeeping. This species is found all over the country. Besides India this species is also found in Nepal, Pakistan, Sri Lanka, China, Philippines, Japan and Indonesia. The study villages's beekeepers are also rearing the Indian honeybee due to easily available near their residence. They collect the bee colonies from forest, holes of trees, cracks of walls etc and domesticate it into the Newton beehive. In Surguja district's beekeepers social status are very low they are unable to migrate the honeybee colonies they are unable hire the vehicles for migration purpose. Besides agriculture beekeeping is a source of extra income for the farmers.

Selected villages's beekeepers are using the traditional beekeeping they they are not aware about the good management practices. Some beekeepers are using the earthen pot, for domestication of bee colonies. They are also not aware about the diseases and natural enemies of honeybees and not clean the beehive properly to protect from the wax moth incidence and Thai Sack Brood virus(TSV) diseases. In India honey bee, *Apis indica* Thai Sack Brood Virus is very common due to which broods are died and all the colonies are become abscond. Among the insect pests wax moth is very common especially during the cloudy weather. Wax moth destroy the entire combs and abscond the bees theses are the serious problem for *Apis indica* beekeepers. So, in this article is being described the Indian honey diseases and natural enemies found in Surguja of Chhattisgarh state.

METHODOLOGY

The survey on diseases and enemies of *Apis indica* colonies was undertaken in the traditional beekeeping areas of the following villages i.e. Ranpur, Piparkhar, Jhumarpara, Silphili, Ambikapur and Kot of Surguja district of Chhattisgarh, India. The survey on honeybee diseases and enemies was undertaken during 2014-15. The information was collected as described below-

Beekeeper's/ Farmer's interview

A questionnaire was prepared on a village level for collection of the data related to honeybee diseases and insect enemies in the given area-

- Name of beekeepers, villages name, Name of block/tehsil, Distt
- Number of bee colonies in each beekeepers
- Number of diseases infected colonies and healthy colonies (Eg. Thai Sack Brood Disease)
- Number of insect infected colonies and healthy colonies (Wax moth, Achea janata, ants, Wasps)
- Number of Bear, lizard, chameleon attacked colonies.

Objectives of the study

- (a) To study the various diseases found in honeybees.
- (b) To find out the various insect-pests harmful for honeybees.

RESULTS AND DISCUSSION

The results are depicted in Table 1 & 2. It is revealed that the period of

activity and level of infestation of honeybees insect pests were greater wax moth, wasps, ants, lizard, chameleon and bears observed. The maximum infestation level was recorded the greater wax moth which was 15 per cent and was found major whose activity was August to October which followed by bear during April to May and it was minor but some times was major. Wasp infestation was found minor at 5 per cent during August to September. Ants attack was observed through the year in large number but it was minor, lizard infestation was also recorded through the year but the infestation level was minor. Chameleon was another pest which feed on bees during the entry of bees into the hives whose infestation level was small but minor and activity was recorded through the year (Table 1).

Table 1. Period of activity and level of infestation of honeybees insect pests during 2014-15

S No	Common name	Activity period	Level of infestation	Status
1.	Greater wax moth	August – October	15 %	Major
2.	Wasp	Aug-Sep	5%	Minor
3.	Ants	Round the year	Large in number	Minor
4.	Lizard	Round the year	Small	Minor
5.	Chameleon	Round the year	Small	Minor
6.	Bear	April -May		Minor some time major

Table 2. Survey on Honeybees diseases and enemies during 2014-15

S N.	Name of villages	No. of bee colonies	Diseases	Insects pests	No. of infested colonies	Remark (Healthy Colonies)
1	Ranpur	20	-	Wax moth, Ants	06	14
2	Piparkhar	15	-	Wax moth	03	12
3	Jhumarpara	16	-	Wax moth	04	12
4	Silphili	11	-	Wax moth, chameleon	05	06
5	Ambikapur	05	-	Bear, lizard	05	-
6	Kot	18	-	Wasp, Wax moth	07	11
	Total	85	-		25	60

The six beekeeper's villages i.e. Ranpur, Piparkhar, Jhumarpara, Silphili, Ambikapur and Kot were observed. Total eighty five bee colonies were recorded in different villages. Among them maximum bee colonies were recorded in Ranpur twenty in number followed by kot eighteen in number. However, lowest bee colonies were found in Ambikapur only fives in number. There were not recorded the diseases in the villages. In Village Kot maximum colonies were infested by wasp and wax moth it was seven in number and eleven were found

healthy colonies out of eighteen. In Ambikapur total colonies were infested by bear and lizard in fives in number and in Silphili village fives colonies were infested and six were found healthy out of eleven colonies by wax moth and chameleon. Village Jhumarpara and Piparkhar were also infested by wax moth. In Jhumarpara and Piparkhar four colonies and three colonies were found infested and twelve were found healthy out of sixteen and fifteen colonies respectively. Among the eighty fives colonies of different villages twenty fives colonies were attacked however, sixty bee colonies were found healthy (Table 2).

Some earlier workers Fletcher (1975) causes of absconding, Koeniger and Koeniger (1980) migration and dance communication, Winston (1987) biology of the honey bee, Punchiewa (1994) beekeeping for honey production, Mohapatra et al (2008) on brood rearing trends and causes for absconding in Asian hive bee, Pokhrel et al (2006) on absconding behaviour and management of *Apis cerana*, Ranabhat and Tamrakar (2008) on seasonal activity of predatory wasps attacking honey bee, *Apis cerana*, Abrol (2009) who worked on honeybee diseases, Pradeep and Bhatt (2014) who surveyed on absconding of *Apis cerana indica*, Lee et al (2015) who recorded the bee health through honey bee surveillance, Jatema and Abebe (2015) also recorded the honey bee pests and predators.

ACKNOWLEDGEMENT

The author is highly thankful to Project Co-ordinator and unit of All India Co-ordinated Research Project on Honeybees and Pollinators ICAR New Delhi, for providing the financial support and necessary technical guidance during the research work.

REFERENCES

1. Abrol DP. Honeybee diseases and their management: Insect enemies, Kalyani Publisher 2009, pp 224-263.
2. Fletcher DJC. New perspective in the causes of absconding in the African bee (*Apis mellifera*). S. Africa bee Journal, 1974, 47:11-14.
3. Jatema Dabessa, Belay Abebe. Survey on Major Honey Bee Pests and Predators in Oromia Special Zone Surrounding Finfine in Walmara District. European Journal of Biological Sciences, 2015, 7(2)62-70.
4. Keoniger N and Koeniger G. Observations and experiments on migration and dance communication of *Apis dorsata* in Sri Lanka. Journal of Apicultural Research. 1980, 19(1):21-34.
5. Lee Kathleen, Steinhauer Nathalie, Travis Dominic A, Meixner Marina D, Deen John, Engelsdorp Dennis van. Honey bee surveillance: a tool for understanding and improving honey bee health. Current Opinion in Insect Science. 2015, 10, 37-44.
6. Mohapatra LN, Patnaik HP, Satpathy CR. Studies on the brood rearing trend and causes of absconding in asian hive bee, *Apis cerana indica* F. under coastal Orissa conditions. Indian Journal of Entomology., 2008, 70(4): 365-368.
7. Pokhrel S, Thapa RB, Neupane FP, Shrestha SM. Absconding behaviour and management of *Apis cerana* F. honeybee in Chitwan, Nepal. J. Inst Agriculture Animals Sci., 2006, 27: 77-86.
8. Punchiewa RWK. Beekeeping for honey production in Sri Lanka: management of Asiatic hive honeybee *Apis cerana* and its natural tropical monsoonal environment. Sri Lanka Department of Agriculture, 1994, 149.
9. Pradeep SD, Bhat NS. Survey on absconding of *Apis cerana indica* F. colonies at different traditional beekeeping areas of Karnataka. Current Biotica 2014, 8(2): 174-178.
10. Ranabhat NB, Tamrakar AS. Study on seasonal activity of predatory wasps attacking honeybee *Apis cerana* F. colonies in southern belt of Kaski district, Nepal. J. Nat. His. Mus 2008, 23; 125-128.
11. Winston Mark L. The biology of the honeybee, Harvard University Press, Cambridge, 1987, 217-218.