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An investigation of seasonal variation of honey bee feeding in a private apiary of Gujrat, Panjab, Pakistan

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Abstract

An observational study was carried out in a private apiary situated at Gujrat, Panjab. Feeding behaviour was observed throughout the year in that Apiary. All observations were recorded in questionnaires. Bee farmers were also investigated about their past experience of feeding Bees. About 130 boxes of Honey bees were examined in this study throughout the year. Those boxes were provided with artificial as well as natural food as they were situated at Gujrat, Panjab. Where there was abundance of food at a specific season of the year. This study revealed that food variation for honey bee to ensure their existence as well as progeny production. And increased amount of artificial food was utilised by Honey bees when there was no/ scarce amount of food in the environment while this consumption became low when there was a large amount of food present in that area. A large amount of artificial food was utilised in the month of December, January and February.

Keywords: Honey bee, food variation, Panjab

1. Introduction

Honey bee belongs to genus *Apis*, with 7 recognized species and 44 subspecies^[1]. Honey bees utilize pollens and nectars of flowers as their primary source of food^[2]. Bees require a large amount of water to keep their osmotic pressure maintained^[3]. Honey Bees keep variation in their food as per its availability^[3]. Looking to the above facts of Feeding of honey bee, current study is designed to investigate food variation in feeding of Honey Bees.

2. Materials and methods

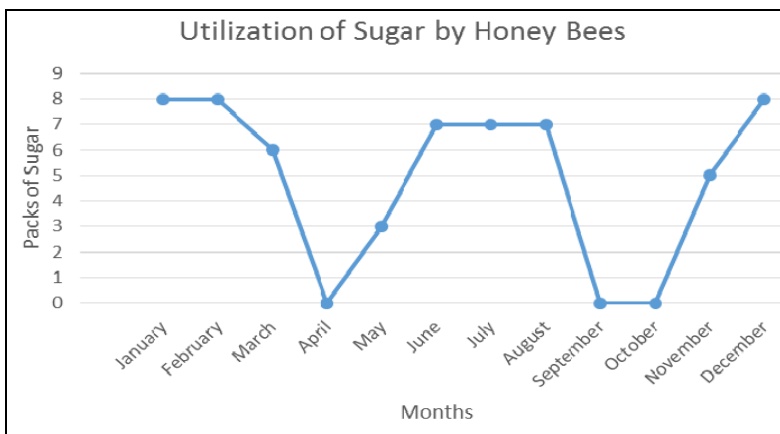
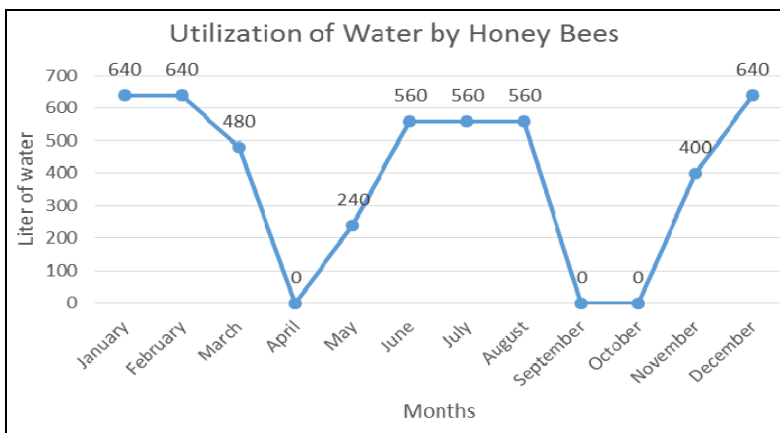
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3. Observations

About 130 boxes of Honey bees were examined in this study throughout the year. Those boxes were provided with artificial as well as natural food as they were situated at Gujrat, Panjab. Where there was abundance of food at specific period of the year. Artificial food consists of semi-dilute sugar water. In the month of January and February when no natural food was available in that area, Honey bees utilized 8 packs of sugar and 640liter water (Each pack consist of 40Kg sugar and 80 liters of water). The consumption of sugar declined to 6 packs in month of March as in this month there is availability of food in natural environment and Bees use natural food (nectar). In the month of April Honey bees deprived of artificial food completely. This behavior reserved up to end of the month of May. Honey bee had consumed 3 packs of artificial food at the end May while 7 packs of sugar during the months of June, July and August simultaneously with less consumption of natural food. Bees were provided with no artificial food in months of September and October. They totally dependent upon natural food. In the month of November Bees consumed 5 packs of food while in the month of December they utilized 8 packs of artificial food.

Feeding of Honey bee during different months of the year

S/No.	Month	Amount of Sugar in Packs	Amount of natural food	Amount of water (Liter)
1	January	8	Not available	640
2	February	8	Not available	640
3	March	6	Less available	480
4	April	0	Abundant available	0
5	May	3	sufficient available	240
6	June	7	Less available	560
7	July	7	Less available	560
8	August	7	Less available	560
9	September	0	Abundant available	0
10	October	0	Abundant available	0
11	November	5	Less available	400
12	December	8	Not available	640
Total	12 month	59		4720



4. Conclusions and Discussions

Current study is in agreement with the study of Anderson *et al.*^[4] which revealed that honey bee has an elevated level of food consumption. This study revealed that food variation for honey bee to ensure their existence as well as progeny production. And increased amount of artificial food was utilised by Honey bees when there was no/ scarce amount of food in the environment while this consumption became low when there was a large amount of food present in that area. A large amount of artificial food was utilised in the month of December, January and February.

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