BEEKEEPING Level - II

Identify Honey Bee Flora

Learning Guide #1

Unit of Competence: Identify Honey Bee Flora
Module Title: Identifying Honey Bee Flora
LG Code: AGR BKG2M 05 LOLG1

TTLM Code: AGR BKG2 TTLM 0919v1

LO 1: Preparing for honey bee flora recognition

Instruction Sheet	Learning Guide #-1

This learning guide is developed to provide you the necessary information regarding the following **content coverage** and topics –

- Identifying and recognizing of *arrange of honey bee flora*
- Identifying and recognizing *resources* and *equipment for activity*
- Selecting honey bee flora and use

This guide will also assist you to attain the learning outcome stated in the cover page.
Specifically, upon completion of this Learning Guide, **you will be able to**

- Identify and recognition of *arrange of honey bee flora*
- Identify and recognition *resources* and *equipment for activity*
- Selecting honey bee flora and use

Learning Instructions:

1. Read the specific objectives of this Learning Guide.
2. Follow the instructions described in number 3 to 7.
3. Read the information written in the "Information Sheets 1". Try to understand what are being discussed. Ask you teacher for assistance if you have hard time understanding them.
4. Accomplish the "All Self-check
5. Ask from your teacher the key to correction (key answers) or you can request your teacher to correct your work. (You are to get the key answer only after you finished answering the Self-check 1).
6. If you earned a satisfactory evaluation proceed to "Information Sheet 2". However, if your rating is unsatisfactory, see your teacher for further instructions or go back to Learning Activity #1.
7. Submit your accomplished Self-check. This will form part of your training portfolio.

Information Sheet-1	Identifying and recognizing of *arrange of honey bee flora*

Identifying and recognizing of *arrange of honey bee flora*

BEE FLORA Honey bees collect nectar and pollen from a variety of plants which are known as bee flora or bee forage or bee pasture or nectar and pollen plants. Nectar is source of honey, meeting the carbohydrate requirements of honey bees, where as pollen is source of protein. Bee pasture can be designated as build up, honey flow and dearth period flora depending on period of availability with respect to development of bee colonies. The flora of an area is characteristic of its agro climatic conditions and as such varies from place to place. This flora is also a food base for large number of pollinators. Out of 3,52,000 species of flowering plants in the world nearly 3,08,000 species (87.5 per cent) are pollinated by animals (including insects, birds, bats, etc.). Bees pollinate a large majority of these plants. Pollination is an ecosystem service provided by the bees that is almost always taken for granted. In simple terms bees make more fruits and seeds for us by collecting nectar and pollen then the quantity of honey they make. Hence, it is essential to understand various types of bee flora and their blooming phenology in a given area to conserve bee colonies. Honey bees usually forage on only one kind of flower on any single trip. • A single bee can carry about 35% of its body weight of pollen.

Fruit trees:

Most fruit trees will provide forage to bees Apple, Plum and Cherry trees are some of the most bee-attracting trees. •Fruit trees provide both nectar and pollen to foraging bees in the spring and early summer. Plants which are visited by bees only for nectar: Tamarind(Tamarindusindicus) , Neem(Azadirachtaindica) ,Soapnut tree(Sapindus spp.,) ,Eucalyptus spp, Pungam(Pongamiapinnata) , Moringatinctoria ,Prosopisspicigera

Plants which supply pollen to the bees: Sorghum,Maize, Roses, Finger millet, Bajra, Castor, Tobacco

Bee attraction plants are plants which are visited by bees these plants have different characteristics.

Flower position should be suitable for the bees to land on it and manipulate easily

Flower color especially the corolla colour should be white, yellow violent, blue or orange.

Flower morphology- Shape, arrangement, texture of corolla should be convenient for the bees to manipulate the flower.

High sugar rate (in nectar)- their taste should reach the bees demand .

Size and nature of pollen grain -Smaller and sticky in nature because honey bees do not collect and store in the comb cells

time of the day and activities of honey bees opening & releasing of pollen & nectar secretion of the flowers should coincide with the activities of honey bees.

Self-Check -1	Written Test

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. Define bee flora? 3pts
2. Write Bee attraction plants which plants have different characteristics?8pts
3. Write at least eight fruit trees that visited by bee**? 5pts**

Note: **Satisfactory rating - 16 points** **Unsatisfactory - below 16points**

You can ask you teacher for the copy of the correct answers.

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Short Answer Questions

1._____
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2._____
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3._____
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Information Sheet-2	Identify and recognition *resources* and *equipment for activity*

Resources may include

- Enterprise or public library
- Business and research organization websites
- Suppliers and contractors
- Enterprise supervisor and team colleague experience,

Equipment may include

- Computer assisted or manual word processors
- Telecommunication appliances
- Plant fixing materials
- Secateurs,
- Older and exercise books
- Pens and pencils..

Personal equipment

A) **Protective clothing-** to keep the bees reaching our flesh (for both traditional and modern bee keeping)

- **Bee suits (overall) -** used to cover all parts of body except head, hands and feet
- **Bee veil**- straw hats (any type of hat with brim) and used to protect the head, face and neck.

Hand gloves-protect the hand and fingers

- **Pair of long boots-** protects feet from sting

B) **Smoker**

- ✓ next in importance to the bee hives itself
- ✓ bees not allow for the bee keeper to harvest their honey (fight)
- ✓ has two main parts

i) Container (contain dry materials like animal dung)
ii) Bellows section (used ton buffs air into container) the smoke makes the bee docile

C) **Alive tool**-pry open and remove the frames from the hive, knife may be used for this Purpose.

D) **brush/quill-**

E) **feeder**-can be jam jar or a special container turned upside down and so arranged that the

1. Water trickles slowly from it for thebees to drink
2. Frame wire – to support the honey comb
3. Cast mould- used to make artificial comb
4. transformer- to fixe comb foundation sheet to frames
5. Embedded knife – use as transformers
6. Honey extractor – to separate pure honey from modern hive

7. Honey presser- to extract honey from not framed combs
8. Un capping fork – to decamp cells of ripened honey
9. Queen excluder- excluding queen and placed between base chamber and honey chamber
10. Honey storage- to store honey
11. Honey jars- can be plastic/ glass container containing 500gm capacity
12. Chisel – to open hive, clean prop oils and unnecessary materials
13. Water sprayer- to reduce aggressiveness and immediate evacuation from nest
14. Honey weighing scale- in order to weigh honey, wax pollen etc
15. Honey strainer

Self-Check -2	**Written Test**

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. Write at least four resource for bee work activity?4pts
2. Write at least 4equipment used for bee activity 4pts
3. Write at least 8 PPE used for bee work? 8pts

Note: **Satisfactory rating - 16 points** **Unsatisfactory - below 16 points**
You can ask you teacher for the copy of the correct answers.

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Short Answer Questions

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2._____
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3._____
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Information Sheet-3	Selecting honey bee flora and use

Selecting honey bee flora and use

3.1. Types of honey bee flora selected for bee

- ✓ The diversity of Agriculture and Horticulture Crop bee flora
- ✓ Fruits
- ✓ Ornamental plants
- ✓ Cereal Pulses
- ✓ Other crops (fiber, oilseed
- ✓ The diversity of Forest tree/wild plantation bee flora

3.2. Major bee plants: are those plants, which are visited by honey bees throughout their flowering season. E.g. Bidens species (meskel flower), Trifolium species. (Clover), Eucalyptus species, Acacia species, and Vernonia species.

3.3. Minor bee plants: are those plants that are visited less often by bees or only when flowers of major bee plants are not in flower. E.g. Echinopes species (Koshoshila), Solanum species (Imboay), Dovyalisabyssinica (koshim) and Sida species (chiferge).

Self-Check -3	Written Test

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. Write type of honey bee flora5pts
2. Write major and minor types of honey bee flora5pts
3. Write honey bee flora calendar5pts
4. Write benefits of bee forage5pts

Note: **Satisfactory rating - 20 points** **Unsatisfactory - below 20 points**
You can ask you teacher for the copy of the correct answers.

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Short Answer Questions

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2._____
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3._____
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4._____
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REFERENCE

1. Advanced beekeeping manual
E t h i o p i a n b e e k e e p e r s a s s o c i a t i o n

2. a practical manual of beekeeping
how to keep bees and develop your full potential as an apiarist