



BEEKEEPING Level-I

Learning Guide-03

Unit of Competence: Support

Beekeeping Work

Module Title: Supporting Beekeeping
Work

LG Code: AGR BKGI M12LO3-LG-12

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LO 3: Identify harvesting and extracting
of honey



Instruction Sheet-3	Learning Guide #12
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This learning guide is developed to provide you the necessary information regarding the following content coverage and topics-

- Identifying honey harvesting during season Indicators
- Harvesting Honeycombs from Fixed Comb hives or movable Comb hive
- processing Honey from ***centrifugal extraction***

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 –

- Identifies honey harvesting during season Indicators
- Harvests Honeycombs from Fixed Comb hives or movable Comb hive
- processes Honey from ***centrifugal extraction***

Learning Instructions:

1. Read the specific objectives of this Learning Guide.
2. Follow the instructions described in number 3 to 20.
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 “Self-check 1” in page 8.
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.
8. Read the information written in the “Information Sheet 2”. Try to understand what are being discussed. Ask you teacher for assistance if you have hard time understanding them.
9. Accomplish the “Self-check 2” in page 12.



10. 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 2).
11. Read the information written in the “Information Sheets 3 . Try to understand what are being discussed. Ask you teacher for assistance if you have hard time understanding them.
12. Accomplish the “Self-check 2” in page 12.
13. Read the information written in the “Information Sheets 4 . Try to understand what are being discussed. Ask you teacher for assistance if you have hard time understanding them.
14. Accomplish the “Self-check 3” in page 19
15. Read the information written in the “Information Sheets 5 Try to understand what are being discussed. Ask you teacher for assistance if you have hard time understanding them.
16. Accomplish the “Self-check 3” in page 19
17. 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 3).
18. If you earned a satisfactory evaluation proceed to “Operation Sheet 1” in page 19. However, if your rating is unsatisfactory, see your teacher for further instructions or go back to Learning Activity #1.
19. Read the “Operation Sheet 1” and try to understand the procedures discussed.
20. Read the “Operation Sheet 2” and try to understand the procedures discussed.
21. If you earned a satisfactory evaluation proceed to “Operation Sheet 2” in page 20. However, if your rating is unsatisfactory, see your teacher for further instructions or go back to Learning Activity #1.
22. Do the “LAP test” in page 20 (if you are ready). Request your teacher to evaluate your performance and outputs. Your teacher will give you feedback and the evaluation will be either satisfactory or unsatisfactory. If unsatisfactory, your teacher shall advice you on additional work.



Information Sheet-1	Identify honey harvesting during season Indicators
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1. Honey harvesting and method of identification matured honey capped

When the first honey crop can be harvested depends on when the hive was colonized by bees. Once a parent colony is capping honey, so will the offspring colony, probably because nectar is available at the same time.

Observing the behavior of the local flowering plants can be very useful in determining when honey can be harvested with maximum results: it is when most of the flowers drop that the bees have capped most of the honey in their nest. As an example, the best harvesting time in west Africa occurs during the peak of the dry season, just before the arrival of the dry harmattan wind. The beekeeper should not wait to harvest until the windy nights and first rains drive the bees to load their honey and fly off with it.

In any particular area, the best way the beekeeper has of knowing that his honey crop is at the maximum is to observe that his colonies are getting ready to swarm. Brood-rearing ceases, and this is characterized by foraging bees sending little or no pollen into the hive. Few bees are seen at the entrance during the day; the bees seem to become lazy, as foraging activity in general seems to have come to an end, but most of the bees continue buzzing and ventilate the hive at night. The honey cells are capped. The hive smells of honey when it is approached. The guards at the entrance become more aggressive than ever and send out patrols to attack any potential intruder loitering in the vicinity. The population of the hive is now at its peak. The brood nest is overcrowded. There is congestion at the entrance. During the night, the bees form a large cluster there, waiting for the cool wind, because they cannot cope with the heat in the hive. All these signs that the colony is getting ready to swarm are also signs that its honey reserves are maximum.

1.1. How to harvest honey

In the general rules for brood-nest control and honey-harvesting are the same, and they therefore do not need to be repeated here in detail.

Wear protective clothes. Never forget to take along a good knife or hive tool, brush or quill and a good container for honey. The honey container may be made of earthenware,



stainless steel, plate or plastic, but it should always be rust-proof. Smoke the hive and open it as described . Then remove the combs one by one (giving a puff of smoke before removing each one) and look at them carefully.

Empty combs, brood combs, and combs containing both brood and honey or uncapped honey should all be returned to the hive. Only full combs of ripe honey should be taken. When such a comb is found, brush any bees on it into the hive and use a knife to cut the comb honey away and Leave about one centimeter of comb on the top-bar to guide the bees to work the next honey crop. Carry on with the harvest until a dark comb is reached. This comb usually contains both honey at the top and brood below.

Some combs may not be easy to remove because the bees may have attached them to each other. This usually happens when the beekeeper has left space between his top-bars. Use a knife to separate them.

If the hive entrance is in the mid-section, there will be honey at both sides. Replace all top-bars and treat the other side in the same manner, but be sure to leave ten combs in the middle. The bees will then work faster to produce the next honey crop than if all honeycombs were taken away.

After removing the surplus honey, rearrange the top-bars carefully in the same manner as before. If bees are rushing out between top-bars, drive them back with smoke, but avoid crushing them unnecessarily. Then close the hive carefully, making sure the lid is firmly placed on the hive. Cork the smoker after work is done. Do not throw left-over fuel into the bush -- it can cause bush fires.

A. Honey harvesting at night

In practice, the aggressiveness of the African honeybee makes it impossible for most beekeepers and wild-honey tappers to approach their hives or harvest their honeycombs in broad daylight. Comb moving and most related jobs, such as brood-nest control, are best performed late in the afternoon or delayed until night or early morning, when bees are less aggressive. However, it is not easy to work well in the dark. Light must therefore be provided, and this definitely requires an extra hand to assist in the operations. Flashlights, which are ideal for use in the job, are usually beyond the reach of the average honey-tapper, especially since, in many tropical countries, batteries for them cannot be obtained on the market. When lanterns or hive torches are used, many bees, attracted to the fire, are burned to death. If the



lanterns are shaded to avoid this, bees will cluster around the shades and shut out most of the light.

Under such circumstances, the job cannot be carried out efficiently, and precious bees and comb may well be crushed in the process.

B. Honey harvesting in daylight

One simple and effective system for harvesting honey or controlling the brood nest with little or no danger, even during the hottest hours of the day, makes use of the fact that foraging bees always return to the site of their hive, even if the hive is no longer there.

1. The beekeeper brings with him to the site an empty hive and a container with a lid for carrying the harvested honey.
2. He smokes the hive heavily from the outside to force the "security guards" and any other bees of the colony who are waiting outside the hive to return to it. It is important to continue smoking until the bees have lost all their aggressiveness.
3. The hive is then carried away from the site, in the direction opposite to the flight runway, and placed on a platform (or on the ground) at least 50 meters from the nearest hive in the apiary. The empty hive is left at the hive site to serve as a temporary home for any returning foragers or for any bees that escape from the moved hive.
4. Working as quickly as possible in order to avoid robber bees, which can otherwise cause trouble, the beekeeper carries out his harvesting or control operations in the normal manner.
5. When the work is completed, the hive is closed and carried back to its original position, and the empty hive is removed. Any bees in it, or members of the colony waiting outside, will then rejoin the hive.

The economy of this system is obvious. Daylight is utilized to ensure proper execution and efficient harvest or brood-nest control without attacking bees chasing nearby inhabitants. Diseases can easily be detected, and hive predators can be found and eliminated. Crushing of combs and bees between top-bars is avoided or minimized. Top-bars can be restored to their proper position. Work can be done throughout the day in a pleasant atmosphere without rushing.



To take advantage of this process, it is suggested that beehives be sited on platforms to facilitate easy moving instead of hanging them on trees or nailing them to a table.

1.2. Uses of honey

➤ As human food:

- in certain alcoholic beverages sugar substitute in cooking and baking
- in child feeding
- for athletic and strenuous activities diabetics

➤ As an ingredient in drugs:

- for hay fever; in cough syrup; as sweetening agent in drugs, especially for children

➤ For animal feeding:

- dairy cows (to increase milk production)
- donkeys and racehorses poultry mash and feed for fish farms

➤ In veterinary medicine:

in the treatment of acetonemia (a disease of the cow)

➤ In cosmetics:

-as a facial cleanser and an ingredient in hand lotion

- In mice- and rat-repellent compounds etc. Hone harvesting season in Ethiopia has two times per year. First from April –June but the main honey harvesting time is September December based on avalevlity of flower.



Self-Check -1	Choices and written Test
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Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. When does hone harvest? (1 points)

A, Honey harvesting at night

B, Honey harvesting in daylight

C, Both A and B

2. Write down the hone harvesting time in Ethiopia?(5 points)_____

3. List use of honey(2points)_____

Note: Satisfactory rating - 3 and 5 points

Unsatisfactory - below 3 and 5 points

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

Answer Sheet

Score = _____
Rating: _____

Name: _____

Date: _____

Short Answer Questions



Information Sheet- 2	Harvesting Honeycombs from Fixed Comb hives or movable Comb hive
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2.1 Beeswax:

Beeswax is an easily stored, non-perishable product. It is used in some areas by local craftsmen and artisans, tanners, leather workers and candle workers. Beeswax can also be used in the making of wood polishes. While in most areas there is a ready local market for honey, this is not always true for beeswax. In some areas it may be necessary to create a market for the wax

2.2. *Bees wax* Common uses of bee wax

- As an ingredient in medicines
- As soldering wax for repairing kitchen utensils and the modern electronic industry uses it in computers.
- Used in tanneries for treating hides and skins.
- It is incorporated into cosmetics candle making etc.

2.3. *Harvesting of bee wax and honey from fixed comb hives*

The traditional methods of extracting honey and beeswax are unsuitable and unhygienic but high yield compared to modern frame hive. Extraction of honey by squeezing with the hand seems to be the quickest method for the average honey-tapper, who cannot afford a centrifugal honey extractor or solar wax-meter. However, the hand contaminates the honey, and unripe honey ferments within a few days after extraction. (Fermentation of honey is more a problem in coastal areas than inland.) Need and coconut honeys are light in consistency and ferment more quickly than honeys produced from other plants.

The combs, including brood, unripe and capped honeycombs, are collected at night. They are all stacked on a wire mesh and a container is put underneath the pile of combs. Live embers are placed on the pile. The fire begins to consume the combs, and honey and wax trickle down into the container until all combs are completely consumed by the fire. The material collected is left untouched until the next morning. The beeswax which has hardened



at the top of the honey is removed, and the honey is poured into bottles of about one kilogram.

In addition, the smoky fire employed is full of ashes, charcoal, dust and gravel which contaminate the honey. Such honey tastes bitter and smoky. The brood combs also add water to the honey, and such honey cannot be stored for long nor enter international markets.

The solar vex-smelter

This is a simple device and can be made by local craftsmen. The smelter is made of wood, lined with a galvanized metal plate and has a glass or clear plastic cover. The base is airtight. The milder can be painted black to absorb more heat it is not common in Ethiopia .

On a sunny day, the wax extractor is capable of generating a temperature of 61°C, enough to melt down a bee comb so that both honey and beeswax flow into a container inside the box.

Hot bath method

In the absence of a wax-smelter, the hot-water bath process now in use by some African beekeepers may be adopted. This is the quickest method of obtaining the wax, but it can only be employed after the combs have been crushed and the honey removed. This is more common in our country.

Equipment:

- 1, a cooking pot
- 2, sackcloth or a sack (preferably jute)
- 3, string or twine (2-3 meters)
- 4, a stick or a discarded top-bar
- 5, a large spoon or ladle
- 6, a mould for the wax

Procedure:

- step1. Put water into the cooking pot and heat over a fire.
- step 2. Wash crushed bee combs to remove dirt and honey and place in the sack.
- step 3. Make a good package by tightening the string around the sack.



step 4. By now the water should be quite warm. Put the package into the pot and use the stick to push it down to the bottom.

step 5. When it reaches a temperature of about 59°C, the wax begins to melt and a waxy scum begins to form on top of the water.

step 6. Use the stick to press the package. More wax will float to the top of the Water.

step 7. Use the ladle to skim off the melted wax and pour it into a mould. Continue this process until wax no longer rises to the surface.

Note: Do not subject beeswax to high temperatures. Prevent the water from boiling by reducing heat.

Extraction beeswax by Ocloo's method

This method, suggested by a beekeeper from Accra, Ghana, is published here for its simplicity, cheapness and efficiency. The method works on the same principle as the solar wax melted, employing the sun's heat to melt down the combs.

Equipment

- 1, a large container
- 2, a sheet of nylon mosquito mesh
- 3; a strong nylon cord and a needle
- 4, a plastic or polyethylene cover

Procedure:

step 1. Fasten the mosquito mesh over the container with the nylon cord.

step 2. Place honeycombs on the wire mesh so that honey can trickle into the container.

step 3. Cover the honeycombs and container with plastic and secure it fast to the container with another cord.

step 4. Leave the honey and container in the sun. Both honey and wax will seep down into the container. The wax will harden above the honey and can be removed when the honey cools down to be decanted and bottled.

Molding beeswax

Beeswax collected should be molded in the following manner:



1. Use a container with a rounded bottom and a mouth wider than the bottom with a very smooth inner surface. Many plastic containers are suitable.
2. Place a small quantity of water (about a tablespoonful) in a cooking pot and put on the fire. Do not melt beeswax in a dry container. It should not be exposed to fire because it burns easily and can be damaged by too much heat. Melt beeswax and all bee combs outdoors.
3. Add all the beeswax and watch carefully as wax melts down. Remove it from the fire immediately after the last lump of wax has melted.
4. Pour melted beeswax into the mould and place in a cool, dry place to cool.
5. Remove the cakes of beeswax next morning.
6. The dark material collected at the bottom can be removed with a knife and can be sold to a shoemaker. The clean raw beeswax is ready for the market. wax is harvested from traditional transitional and modern hives. But wax from modern/movable hive is very low than of the two. From braking combs and scraps of comb cell. Important factors in processing of bees wax,

Self-Check -2	Written Test
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Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. Write uses of wax(2point)

2. List wax harvesting methods. (3 points)

Note: Satisfactory rating - 3 points

Unsatisfactory - below 3 points



Answer Sheet

Score = _____

Rating: _____

Name: _____

Date: _____

Short Answer Questions



Information Sheet-3	process Honey from <i>centrifugal extraction</i>
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3.1 A **honey extractor** is a mechanical device used in the extraction of honey from honeycombs. A honey extractor extracts the honey from the honey comb without destroying the comb. Extractors work by centrifugal force. A drum or container holds a frame basket which spins, flinging the honey out. With this method the wax comb stays intact within the frame and can be reused by the bees.

Bees cover the filled in cells with wax cap that must be removed (cut by knife, etc.) before centrifugation.

Extractors can be one of two kinds depending on how the frames are oriented in the basket:

- tangential: one side of the comb facing outward
- radial: the top bar of the frame facing outward^[5]

Both rely on the use of centrifugal force to force the honey out of the cells. During the extraction process the honey is forced out of the uncapped wax cells, runs down the walls of the extractor and pools at the bottom. A tap or honey pump allows for the removal of honey from the extractor. Honey must be removed in time and always stay below the rotating frames as otherwise it prevents extractor from spinning with sufficient speed.

Extractors can vary in sizes from holding just a couple frames to large commercial ones holding up to sixty frames. The smaller ones can be powered manually while others (especially the commercial ones) will be powered by an electric motor. Most hand-cranked extractors will rely on a gearing system to increase the speed of the rotation of the frames.

Most large commercial extractors are radial and rely on the upward slope of the comb cells. When bees build their comb, the cells are sloped upward from the center rib at an angle of 10 to 14 degrees. By leveraging this slope angle, it is easier to extract the honey. In addition, the amount of work during extraction is reduced in the radial type because the frames do not have to be turned over to extract the honey from the other side of the comb (however some extractors are capable of turning combs automatically).

Some portable honey extractors are driven by gasoline or diesel small engines. Larger diesel engines are more expensive than a compact 2 stroke gasoline ones and usually use the diesel fuel to operate at lower rims with higher torque. Diesel-powered extractors are harder to start, especially in winter due to reduced fuel viscosity under the ice and snow conditions.



3.1. Honey Extraction stapes

- 1) Heated knife - to unseal honey cells heated knife use 30 degrees.
- 2) Uncapping fork - to unseal honey cells missed by the heated knife The heated knife takes off most of the caps. For the leftover ones, use the uncapping fork and gently shave off the caps.
- 3) tub for wax/honey
- 4) Extractor! - Fancy cylindrical piece of equipment, used to extract honey start the extractor. It should start slowly, then speed it up. Within 10-15 minutes, all the honey will be out of the honeycomb, stuck to the bottom and sides of the extractor. Place your food-grade bucket under the extractor spigot. Use a double sieve to catch the wax and impurities as the honey starts pouring out of the extractor. Do not leave the spigot unattended - you will be surprised how much honey comes out!



honey excstracter

- 5) food-grade bucket - to catch honey out of the extractor
- 6) double sieve - catches wax and impurities as honey is poured from extractor



- 7) Containers - final destination of honey before consumption Wash your jugs, jars or whatever containers you will put the honey in. Air dry to avoid fermentation . Fill up your containers with honey and labelers

3.2. Honey processing

Many species of bees collect nectar which they convert into honey and store as a food source. However, only bees that live together in large colonies store appreciable quantities of honey. These are bees of the genus *Apis* and some of the *Meliponinae* (stingless bees)

Many species of bees collect nectar which they convert into honey and store as a food source. However, only bees that live together in large colonies store appreciable quantities of honey. These are bees of the genus *Apis* and some of the *Meliponinae* (stingless bees honey consists of a mixture of sugars, mostly glucose and fructose. In addition to water (usually 17-20%) it also contains very small amounts of other substances, including minerals, vitamins, proteins and amino acids. A minor, but important component of most types of honey is pollen. These components contribute to the different flavors that honey can have, and make honey a nutritious food that has a high demand in many regions of the world.

3.3. Cut-comb honey

The simplest processing is to remove the honeycomb from frame hives, top-bar hives or traditional hives and sell or consume it as "cut-comb" honey. When producing this from frame hives it is necessary to use a wax foundation that does not contain strengthening wires and is thinner than that normally used in wired frames. The process involves collecting pieces of sealed and undamaged honeycomb, cutting them into uniform sized pieces and packaging them carefully in bags or cartons to avoid damaging the honeycomb. Because the honeycomb is unopened, it is readily seen to be pure, and it has a finer flavour than honey that is exposed to air or processed further. Cut-comb honey can therefore have a high local demand and fetch a higher price than processed honey. However, the honeycomb is easily damaged by handling and transport, which makes distribution for retail sale more difficult. It requires protection by packaging materials that will absorb shocks or vibration (e.g. cushioning plastics such as "bubble-wrap" and/or corrugated cardboard cartons) and packs should be carried carefully and not stacked, thrown or dropped to avoid damage to the honeycombs



3.4. Strained honey

This is honey that is processed to a minimal extent and is usually sold locally. It is prepared by removing the wax capping of the honeycomb using a long sharp knife that has been heated by standing it in warm water. (unsealed combs containing unripe honey should not be used). The honeycombs are then broken into pieces and the honey is strained to remove wax and other debris. A fairly coarse strainer is used at first to remove large particles, and the honey is then strained through successively finer strainers such as cotton or muslin cloths. The clear honey is collected in a clean, dry container. When most of the honey has drained (often over many hours depending on the temperature) the combs are squeezed inside a cloth bag to remove as much of the remaining honey as possible. The wax is collected and formed into a block by melting it gently in a warm water bath or solar wax extractor. This beeswax byproduct often has a high value as a wax polish or for candle-making. The strained honey can either be dispensed from the collection pan into customers' own containers or packed into glass jars or plastic bags for

The wax capping are removed from the honeycombs as for strained honey. At larger scales of production, electrically heated honey knives or "planes" may be used:

When extracting honey from top-bar frames, the frame is placed over a dish, and the thin layer of wax capping is cut from the bottom to the top of the frame and allowed to fall into the dish below. The frame is then turned and the capping on the other side is removed. Honey that is stuck to the wax capping is strained using cloth bags as above. The frame is then placed in a honey extractor. Honey extractors can be manually or electrically operated, depending on the scale of production, and can be either "tangential" or "radial" type machines. They extract the honey by spinning the frames at high speed. In a tangential machine, the frames lie against the barrel of a drum and the outer side of the frame empties when the drum is spinning. The frames are then turned so that the other face of the honeycomb faces outwards, and the machine spun until this side is empty. This prevents the inner part from bursting through the empty outer combs and so prevents the combs from breaking. Although each frame has to be handled four times to load, turn and unload them, more complete extraction can be achieved and this design is more compact and cheaper than radial types. In a radial machine, the frames sit between rings, arranged like the spokes of a wheel and honey is extracted from both sides simultaneously. Radial machines are larger than tangential machines to ensure that the frames are far enough from the centre to extract properly, but they can hold more frames than a tangential machine (e.g. a 20-frame radial extractor compared to an 8-frame tangential machine).



The honey is collected in a pan, preferably made from food grade plastic or stainless steel, and filtered through a nylon or stainless steel filter unit that has progressively finer filters as the honey moves to the outside of the filter unit. Some filters are fitted with heaters to make the honey flow faster, but these are not necessary in tropical climates and any increase in temperature risks a reduction in the quality of the honey (see below). The clear honey is then collected and packaged into glass or plastic containers and labeled. The package should be moisture proof to prevent the honey picking up moisture from the air during storage.

Because customers regard the color of honey as an important quality characteristic, the containers should preferably be transparent so that customers can see the product. Glass jars with screw-on lids or plastic pots with heat-sealed foil or plastic lids may be used. In countries where glass or plastic containers are difficult to obtain, heat-sealed plastic sachets are an alternative. The label on the container is important for attracting customers and a professionally designed label that describes the source of the honey (e.g. sunflower, mixed blossom, tree honey etc.), its purity, and the district it was produced in, can give a marketing advantage. Legally, in most countries the label should have the following information:

- The name of the product (i.e. pure honey)
- The name and address of the producer.
- The weight of honey in the container (the net weight).

Other information may be included to benefit the customer: for example, the label on comb honey may indicate that the whole comb including the wax is edible, or strained honey may have a note to explain granulation (see below).



Self-Check -3	Written Test
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Directions: Answer all the questions listed below. Use the Answer sheet provided in the next space:

1. What is honey extractor?(2point)

2. Write labeling information that are most countries used.(2points)

3. Why honey store in dry container?(3point)

Note: Satisfactory rating – 3 and 4 points

Unsatisfactory - below 3 and 4 points

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

Answer Sheet

Score = _____

Rating: _____

Name: _____

Date: _____

Operational sheet-1	<i>Hot bath method wax harvesting</i>
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Operation steps

step1. Put water into the cooking pot and heat over a fire.

step 2. Wash crushed bee combs to remove dirt and honey and place in the sack.



step 3. Make a good package by tightening the string around the sack.

step 4. By now the water should be quite warm. Put the package into the pot and use the stick to push it down to the bottom.

step 5. When it reaches a temperature of about 59°C, the wax begins to melt and a waxy scum begins to form on top of the water.

step 6. Use the stick to press the package. More wax will float to the top of the Water.

step 7. Use the ladle to skim off the melted wax and pour it into a mould. Continue this process until wax no longer rises to the surface.

Operational sheet-2	<i>Extraction beeswax by Ocloo's method</i>
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Operational Procedure:

step 1. Fasten the mosquito mesh over the container with the nylon cord.

step 2. Place honeycombs on the wire mesh so that honey can trickle into the container.

step 3. Cover the honeycombs and container with plastic and secure it fast to the container with another cord.

step 4. Leave the honey and container in the sun. Both honey and wax will seep down into the container. The wax will harden above the honey and can be removed when the honey cools down to be decanted and bottled.

LAP Test	Practical Demonstration
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Name: _____ Date: _____



Time started: _____ Time finished: _____

Instructions: Given necessary templates, tools and materials you are required to perform the following tasks within **8-12** hours.

Task 1: identify season of honey harvesting.(5point)

Task 2: extract wax from frame hive and fixed comb hive.(5point)

Task 3: Extract honey by using honey extractor.(5point)

Task 3: demonstrate wax harvesting by hot bath method

Instructions: write the appropriate answer for the following questions

3. List wax harvesting method .(5point)
4. Write equipments used for honey storage.(5point)

List of Reference Materials

[http. www. processing of honey with un extractor](http://www.processingofhoney.com)