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Pack 107, Item 6

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**Honey is good food that bees give you at no cost: Part A: How to make a simple beehive**

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### Notes to broadcaster

The following script on beekeeping is divided into two parts. The first part gives details on how to build a beehive to attract bees to your area. The second part tells you how to collect honey from the beehive.

Beekeeping has multiple benefits. Honey is a nutritious food, good for the whole family. And many beekeepers can harvest enough honey to supplement their income—or even to make a good income if they have many hives.

You might choose to present this script as part of your regular farming program, using voice actors to represent the speakers. If so, please make sure to tell your audience at the beginning of the program that the following short drama is based on a conversation with a real scientist, but that the voices are those of actors, not the original people in the script. You could present both parts of the script on the same day, or present part one on one day, and part two on the next.

You could also use this script as inspiration to research and develop a radio program on beekeeping in your own country.

If you choose to use this script as inspiration for creating your own program, you could talk to beekeepers, extension agents and others, and ask the following questions:

* What kind of beehives do beekeepers use in your area?
* What practices have local beekeepers found effective to care for their bees, to harvest honey, and to get good yields of honey?
* Are any of the practices used in the script useful to local beekeepers?

Apart from speaking directly to beekeepers and other key players in the local agriculture sector, you could use these questions as the basis for a phone-in or text-in program.

Estimated running time with intro and outro music for each episode: 10-12 minutes

**HOST:** Honey is a good food that many more people could be using. And they could be getting honey without any cost at all! That's because there are honeybees almost everywhere in the world. And some of them could be working for you!

 Honey, of course, comes from bees that gather it in the form of nectar from flowers and blossoms.

 You probably know someone who keeps bees and harvests the honey that the bees store in honeycombs. *You* could do this too! Then you'd have more food for yourself and your family and you might even get enough to sell.

 "But," you say, "where would I get the bees? I don't know enough about bees and how to keep them and get honey from them!" Well, just keep listening and I'll tell you about it.

 After a recent visit to the Tabora Honey Co-operative in Tanzania, I met a honey specialist.

 What are the most important things you need to know about raising bees and harvesting honey, (Mr., Ms. Mrs. \_\_\_)?

**AG SCIENTIST:** First of all, bees need a good place to live. Bee houses are called hives, and there are many different kinds of beehives. The simplest beehives are made of hollowed-out logs that are hung from the branches of a big tree. These kinds of hives are often 1 to 1 ½ metres long and about 30 centimetres across one end.

 Palm logs make good beehives because the centre can be hollowed out quite easily. Or you might even find a big piece of bamboo that would do. One good stout section of bamboo would make a fine hive if you cut it so that there is a node at each end. Each node would then form a sort of wall to keep the ends of your hollow bamboo beehive closed. Of course, there must be a way for bees to get in and out of the hive, so you’ll need to make three or four holes the size of your finger in one end only.

 You may have seen beehives of this kind hanging in trees more or less horizontal or parallel to the ground. People have been keeping bees like this for a long time. Bees like to live in hollow logs hung up in trees this way because they build their honeycombs inside them hanging from the top and sides and leaving a space all along the bottom. That's so they can easily get in to the combs to deposit the honey.

**HOST:** Ok, so now you’ve got your beehive. But how do you know that bees will make honey in your beehive?

**AG SCIENTIST:** This will be easy if, when you're making the hive, you split off about 1/3 of the log. The upper 2/3 of the log can then form the top and sides of your hive when it's hanging in the tree. That's the part the bees will build their combs in. I'm sure you can figure out a way to hang it from the limb of a tree, but make sure you hang it up high enough so that any animals you keep can't reach it.

 The next thing to do is to get some beeswax. You might find some in a tree that has a colony of bees in it, or get it from another beekeeper. Rub the beeswax around inside the hive. After you've done that, fasten the bottom 1/3 of the log back onto the hive using reeds, twine or wire. Your hive will now be closed up except for the holes in one end for the bees to use. All you have to do now is rub a bit more beeswax on the end of the hive with the holes in it. That'll attract the first swarm of bees that comes along. They'll just move in and make it their home.

**HOST:** Ok. What happens next?

**AG SCIENTIST:**  When the bees have built their comb and stored their honey, you can take the bottom piece off, and then burn some branches to create smoke to drive the bees back. Then you can examine the combs from the bottom and pick out the combs that have just honey in them, making sure you don't injure the queen―that is the mother of the hive, the one that produces the eggs―and that you leave enough honey behind so the bees don't starve. That way, you can produce good honey in the comb and the hive will go on producing more honey.

**HOST:** Thank you, \_\_\_.

 So you see, keeping bees to make food for you and your family isn't hard at all. I must emphasize, however, what you already know, that bees do sting. And while one or two bee stings may not bother you too much, if a whole bunch of bees went after you, it could be very bad. Because of this, there are four important things to do if you're going to keep bees.

 1. Have your beehives at least 300 metres from where you or your neighbours keep animals that are tied or in a pen.

 2. Always wait until late in the day before going near your beehives or doing anything around your bees.

 3. Bees don't like smoke, so be sure to have a good source of smoke to drive them away. Some people use an old tin can punched full of holes. They put smoky smouldering leaves or grass in the can and a helper holds the hot can with a piece of wire. If you had a helper to do this, you'd be able to blow the smoke into the hive area where you want to work.

 4. It's best to wear heavy clothing and dark-coloured netting hung from a broad-brimmed hat to keep the bees away from your head, face and neck.

 One thing I should add is that just as you, your poultry, and your animals need water to drink, your bees need water too. So if there's no stream or pond where they can get it themselves, you'll have to keep some water in a shallow container nearby so they can drink when they're thirsty.

 One other thing to remember is that bees have to be standing on something solid when they're drinking. So you must put some twigs or grass in the container partly in the water and partly out of it for them to stand on.

 After bees have moved into your hive, there are some other things you'll need to know, but we'll talk about that next time. Meanwhile, why don’t you talk about beekeeping with somebody else you know who is already doing it!

**Part B: Harvesting honey from the hive**

**HOST:** Before we get down to the details of how to get honey from a hive, there are a couple of things I'd like to mention about bees and honey.

 The first is that bees gather nectar, make honey and store it almost everywhere there are flowers. If they don't store it in your beehive or somebody else's, they'll put the honey some place where it won't likely be found. But if you provide them with a hive to store it in, it will be yours at no cost whatever.

 Another important thing is that if there were no bees around, you wouldn't be able to harvest nearly as many fruits and vegetables. That's because, in many cases, it's bees that pollinate the blossoms and flowers. They do this while they're gathering the nectar that they turn into honey. So bees are very important, and if you make sure they have water and a good beehive to live in not too far from your fruit trees and your garden, they'll work for you both ways. They'll do the pollination and they'll give you honey—a good, sweet, high-energy food.

 There's something else I should point out. Maybe you keep poultry, pigs, cattle or other animals to produce food or to work for you. And perhaps you have to grow and harvest feed for them or provide them with pasture. But you don’t have to grow or provide food for your bees because they don't compete with any other creatures for food.

 The last time we talked, I told you about the log beehive. You'll remember that it's made from a hollow log that you hang parallel to the ground from the branches of a big tree. The bottom 1/3 of the log is separate but tied back in place, and you've made three or four holes in one end of your hive so bees can get inside. Before closing it up, you rubbed some beeswax on the inside and then on the outside near the holes.

 Let’s see what \_\_\_\_ says about the bees that are going to live in your hive after it's hanging in the tree.

**AG SCIENTIST:**  Usually if there are bees in the area, the hive will be occupied by bees within a few hours, or sometimes a few days. If there aren't many bees in the area, it might go a month or two before it's occupied.

**HOST:** Now that the hive is hanging up there and you've got bees in it, what happens?

**AG SCIENTIST:** Well, usually the reason the bees go into your hive is because flowers are starting to bloom in the area. So, after a while, you can occasionally just lift the end of your hive with your hand. When it starts to get heavy, you know there's quite a bit of honey in there and it's a good time to take some of it out.

**HOST:** By now the bees have been working there for how long—a month?

**AG SCIENTIST:** Maybe two or three months.

**HOST:** OK, before you take the hive down, you've got to get the bees out of it. How do you do that?

**AG SCIENTIST:** Well, you could do this with the hive still in the tree or you could unhook it and lower it down. But you have to have smoke in order to do it.

 Bees don't like smoke, and you need a good source of smoke to drive the bees away. If you don't, they could sting you badly. Some people use an old tin can punched full of holes. They put smoky smouldering leaves or grass in the can, and a helper holds the hot can with a piece of wire close to the hive. Then they blow the smoke into the place where the bees are working at the hive. They also wear heavy clothing and protect their head, face, and neck from the bees with a big hat and netting.

**HOST:** If you try beekeeping, when should you be doing this work with the bees?

**AG SCIENTIST:** Most of this is done late in the day, at dusk.

**HOST:** Is that because bees don't sting so much then?

**AG SCIENTIST:** No, they don't sting so much then. They're easier to handle late in the day—and then they settle down before the morning and they won't sting people around there the next day. This is why it's done late in the day or just at dusk.

**HOST:** OK, so you have taken the bottom off the log hive, and there are no bees in it because they've been driven away by the smoke. What do you see when you look inside this hollow log?

**AG SCIENTIST:** When you look inside, you'll see honey combs.

**HOST:** The honey combs are made of wax material. Is it hanging down?

**AG SCIENTIST:** Yes, it'll be hanging down from the top.

**HOST:** Is it hanging down in sections or is it all solid?

**AG SCIENTIST:** It'll be hanging down in separate sections—in other words, in combs one beside the other.Therecould be anywhere from four or five combs to 15 or 20.

**HOST:** So you've got all these combs, all made of beeswax hanging in there. What do you do now?

**AG SCIENTIST:** You select the ones that are the whitest because that's where the honey is stored, just honey. Those are the ones that you cut off.

**HOST:** Do you cut them out—or do you break them?

**AG SCIENTIST:** You can use a knife or you can put your hand in and break them off. If you find a dark part in the comb, there's pollen or brood there. The brood are young bees, baby bees, and if you find them, then you quit. You don't go any further; you don't take out any more. You put your bottom back on and quit.

Start examining the combs from the closed end and work towards the front. The queen will do her laying in the first half of the hive, and when you come across your first patch of sealed young bees, stop.

 Be careful to only harvest honey from combs with sealed cells. There will be honey in cells that have not yet been sealed by the bees because they have not yet reduced the amount of water in the cells to an acceptable level. These combs of unsealed cells will tend to be the first ones you inspect in the back part of the hive. Honey that has a lot of water will be spoilt by fermentation. Therefore, it should not be removed from the hive.

**HOST:** So now you've got six or eight or maybe 10 pieces of wax with honey in them. What do you do now?

**AG SCIENTIST:** You put those pieces in a container that you keep closed so the bees won't try to take it.

**HOST:** When you're working around the honey combs like this, do bees come near you then? Do they bother you when you're doing all this?

**AG SCIENTIST:** Well, if there are flowers for the bees to visit to fill up with nectar, then, they don't. But they do if there's no nectar available.

**HOST:** Supposing you're doing it and you find that they start to bother you. What do you do then?

**AG SCIENTIST:** The only thing you can do is create some smoke in the area to drive the bees away. Put some twigs together, build a small fire on the ground and get it burning. When you put the fire out, this gives you smoke that will drive the bees back. Make sure that your honey is all covered up so the bees can't get into it and try to take it.

 If you want to use fire like this, you must be very careful not to cause a bush fire. So make sure that there is no dry vegetation close to the fire. And when you finish, it is very important to ensure that the fire is completely out.

**HOST:** When they smell you working with honey, are they likely to sting you then?

**AG SCIENTIST:** Well, not likely because they're coming there to get the honey. If you put your hands on them or squeeze them, then of course they will, but when you get so many around, they may bump into you and sting you.

**HOST:** Have you any suggestions about what to do it a bee stings you?

**AG SCIENTIST:** The best thing to do is scrape the stinger out as soon as you can after you're stung. There's a little sack on the end of the stinger that's full of poison, and if you pull it out then you squeeze all that poison in. So you scrape it out with your fingernail and get rid of it as fast as you can—that's the best you can do.

 It is also a good idea to smoke the area of the bee sting after it has been removed, because stings release a chemical called a pheromone that attracts other bees to come and sting you. The smoke will help to mask this chemical.

**HOST:** Right, so now we have pieces of comb in our container. That’s the end, is it?

**AG SCIENTIST:** It depends. Some beekeepers and their families just chew the pieces of comb and get the honey from it in this way. Other beekeepers, especially if they are going to sell their honey, will want to extract the honey from the comb first.

**HOST:** Is that difficult to do?

**AG SCIENTIST:** No, it isn’t. They get an airtight container—a bucket with a lid, for example—and stretch a piece of net curtaining or old mosquito netting over the top. Then they break the comb into small pieces and put it on the netting. The honey will drain out of the comb and fall through the netting into the container, leaving the comb behind.

**HOST:** Will it take a long time for the honey to drain through into the container?

**AG SCIENTIST:** Not usually, but to speed things up you could put some black plastic over the top and place the bucket in the sun to warm up. But be careful: if the comb gets too hot it will melt and go through the netting, which you don’t want it to do.

 When you have finished, make sure you keep the lid on the bucket. You want to keep the honey clean and you don’t want the smell of honey to attract bees.

**HOST:** Is there anything you can do with the comb left on the netting?

**AG SCIENTIST:** There is. Wash the comb to remove traces of honey and then use the wax when you are making new hives. Remember, we said that the inside and entrance of new hives should be rubbed with wax to attract a swarm of bees. You now have the wax you need for this.

**HOST:** Well, thank you very much, \_\_\_, here at the Tabora Honey Co-operative in Tanzania.

*Note: This script is adapted from Package 4, scripts 4 and 5, distributed in 1981. The original participants were George Atkins, founder of Farm Radio International and Gordon Townsend, from the Department of Biology at the University of Guelph, Canada. It was reviewed and modified by Roy Dyche, project manager with the UK charity, Bees Abroad.*

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