

1-1965

# How to Produce Honey

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## Recommended Citation

Nye, W. P., and G. F. Knowlton. 1965. How to Produce Honey. Utah State Univ. Ext. Serv. Entomol. Mimeo Ser. 42, 4p.

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UNIVERSITY  
Extension Services  
Logan, Utah

Entomology Video Series 42  
January, 1965

## HOW TO PRODUCE HONEY

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Three types of honey are marketed. Liquid (extracted) honey is the kind most commonly produced in Utah. Comb honey, or section honey, and bulk comb honey, or cut comb honey, are produced by only a very few beekeepers in this state. Extracted honey is the easiest to produce and generally results in the largest crops. However, it requires the largest expenditure for equipment and the most work to get it ready for market. Comb honey needs no expensive processing, but requires more beekeeping skill and a very favorable honey flow to get the best yield results. Bulk comb honey can be produced under less favorable conditions and with less "know-how" than section comb honey and it does not require the machinery and tanks needed for producing liquid honey.

### Extracted Honey

Producing extracted honey is relatively simple. Try to get your colonies to reach their peak of strength about the time the major honey flow starts. Populous colonies with good queens should be provided with an unrestricted brood nest containing empty cells for egg laying, and adequate storage space for incoming nectar and pollen. The addition of combs allows the queen to expand her brood area and an area for storage of nectar and honey away from the brood area and helps prevent swarming. In Utah the main flows are from sweetclover and alfalfa. Swarming reduces your working force and can make all the difference between a good crop and no crop. No special equipment is necessary, since the same style of frame used in the brood nest is used for the supers (hive bodies placed over the brood nest in which surplus honey is stored).

When sweetclover or alfalfa is coming into bloom, or when new white wax is being deposited on the top bars of your brood frames, it is time to add more supers. Give the colony more comb space than it seems to need at the time. Such space gives the bees more room for ripening honey. Plenty of space for handling incoming nectar may also increase the incentive of the hive bees to take nectar from foragers. Generally two, or at the most three, supers will hold an average crop of honey. (Don't put on too many supers or you will have a lot of half-filled combs.)

If you are just starting beekeeping and have no drawn combs to use in supers, it is better to add each super of foundation next to the brood nest. In Utah you will rarely have more than two supers of foundation drawn and filled.

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\* Revision from series originally prepared by A. D. Levin and G. F. Knowlton, June, 1956.

When the combs are filled and sealed, you can remove them from the hive by one of several methods. For only one or two supers you can brush the bees from each comb with a wisp of grass or a special bee brush. A one-way traffic gate, called a bee escape, may be placed in a board between supers and brood nests. This is the best way to remove the bees from the supers, but it requires two visits. If the escapes are put in place one day, usually the super will be free of bees the next day. Commercial beekeepers, who must keep their traveling to a minimum, generally use propionic anhydride benzaldehyde, or butyric anhydride sprinkled on cloth pads fastened to the inside of special covers to drive the bees from the supers. The use of carbolic acid is no longer recommended because of the danger of contaminating the honey. In its place, propionic anhydride benzaldehyde or butyric anhydride can be used as follows

1. Sprinkle a cellotex pad with two tablespoonfuls of one of the above agents (undiluted).
2. Place an empty shallow hive body over the top super to be removed. (This rim should have a 1-inch auger hole in it.)
3. Start the bees down with smoke until they clear the top bars of the frames.
4. Place the cellotex pad over the empty hive body.
5. Insert the nozzle of the smoker into the auger hole and fill the hive body with smoke. Close the hole with a cork.
6. Wait 2 or 3 minutes. The top super should be free of bees and may be removed. Recharge the cellotex pad after each 45 minutes to 1 hour of use.

Bees may also be removed from supers by a high-volume, low-pressure air blast from an industrial vacuum blower powered by electricity from a portable generator.

#### Extraction.

When you've removed the honey from the bees, it has to be separated from the combs. First, open the cells by cutting off the wax capping with a hot, sharp knife. Then place the frames in an extractor that throws the honey out of the cells by centrifugal force. The honey is now ready to be strained and bottled. The cappings should be drained of honey and melted. These operations call for special equipment and tanks, depending on the amount of honey to be processed.

#### Section Comb Honey

Section comb honey production requires the same kind of management before the honey flow as any other kind of honey production. Aim for strong colonies with full brood nests and manage to prevent swarming. You'll need special supers which are available from bee supply dealers, who can also explain what you will need and how to get it ready. The hard part is getting the bees to store honey in the small sections, usually  $4\frac{1}{2}$  inches square or 4 by 5 inches. They usually have to be crowded into these supers, and this crowding tends to encourage swarming.

A number of rather complicated methods of section honey production are described in detail in some of the books listed below. Most of these methods are attempts to force the bees to store honey in the supers without causing swarming. Described here is a very simple way to produce comb honey that will work well if the honey flow is rapid and fairly abundant.

The colonies that you choose for producing section honey should be your strongest ones. When the flow starts, the bees should fill two stories to overflowing and, if possible, even be well into a third. At the beginning of the flow remove the third story, if there is one. Shake the bees from it in front of the colony. The combs can be used for a super on another colony, assuming, of course, that no disease is present. Place the section super on top of the colony. Five to seven days later look at the super. If the bees are working well into it, raise it up and put another super under it, next to the brood nest. A week or ten days later the first super should be at least half full and the bees should have a good start in the second. If conditions look favorable for a bumper crop, put a third super on next to the brood nest. Watch for the first super to be almost filled, and remove it as soon as possible before the bees have a chance to darken the cappings with so-called "travel stain." Sort out unfinished sections and give them back to the bees for completion.

It is important to examine the colony regularly for queen cells because these crowded conditions which encourage the bees to go into the shallow supers also encourage swarming.

If your colony does not fill two hive bodies completely, it is possible to force the bees into section supers by cutting the brood nest and remove as much honey as possible, leaving the brood nest filled with brood. Under these conditions, you will have to watch even more closely for swarming signs. The upper part of the brood nest, which you removed, can be used to strengthen a weaker colony or set on another colony to be filled with honey. Replace it on its original hive when the section supers have been removed.

Full supers of section honey should be removed with a bee escape. The only further handling required is a little scraping to dress them up. Then weigh them, mark the net weight on each section, and place them in a carton or wrap them with cellophane.

#### BULK COMB HONEY

Bulk comb honey differs from section honey only in the size of the frame in which the thin super foundation is placed. For bulk comb honey, shallow frames of standard length and 5-3/8 inches deep are used. Manage your bees before the honey flow as described before.

When the flow starts, place these supers on the hive in the manner described for section comb honey. You will find that the bees go up into these supers quite readily and don't stay below to crowd the brood nest as they sometimes do with section supers.

One thing to look out for is the queen coming up to lay eggs in these supers. This happens rarely with section supers, commonly with extracting supers, and occasionally with bulk comb honey supers.

Be sure to set your full sheets of foundations as straight as possible. They might tend to swing to one side or another or be wavy. If this gives you trouble, try wiring the frame with one wire and fastening the foundation to this wire. You will then have to remove the wire when the comb is filled, which you can easily do by unfastening the wire at both ends of the frame and pulling it carefully through with pliers.

When the supers are full, remove them as soon as possible to avoid "travel stain." You can weigh and wrap the entire frames to be cut into convenient sections by the consumer. Or you can cut them into smaller sizes yourself. Let them drain a while before you wrap them in cellophane, mark the net weight on the wrapper and they are ready for market.

You have read in the preceding paragraphs only a brief description of honey production. For more details we recommend that you read one or more of the following books, which may be obtained from your local bookstore or from most bee supply firms.

The Hive and the Honey Bee (1963). W. A. Grout.

ABC and XYZ of Bee Culture (1950). E. R. Root.

First Lessons in Beekeeping (1951). C. P. Dadant.

Beekeeping (1960). J. E. Eckert and F. R. Shaw.

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Cooperative Extension Work in Agriculture and Home Economics, William M. Bennett, Director, Utah State University of Agriculture and Applied Science and the United States Department of Agriculture, Cooperating. Distributed in furtherance of Acts of Congress of May 8 and June 30, 1914.