



**British Beekeepers' Association
Advisory Leaflet No. 9**

**HONEY
PURE, NATURAL, WHOLESOME GOODNESS**

From the remotest times honey has been valued as a delicacy, an article of food, and as a sweetener. We have not to go back many centuries in the history of our European civilisation to get to the times when sugar was a very rare import, and in those days the straw skep of bees was the means of supplying honey for home use.

The production of honey by the bees is part of an exchange in which flowers provide nectar, enabling the bees to develop up thriving colonies in the spring and gather sufficient food in the summer to store away enough to live through the winter to next year's Spring flowers. In return, the bees while working the flowers pick up pollen on the hairs of their legs and body transferring it fortuitously to a flower at a later stage of development, fertilising the bloom, so that fruit and seeds are formed.

THE PLANTS PRODUCE THE NECTAR

Plants live by the moisture and the nutrients they collect from the soil and from the materials they absorb from the atmosphere. Within the green parts of the plant an involved process known as photosynthesis takes place. Chlorophyll is present in the cells which can use light energy, particularly sunlight, to split some of the water liberating oxygen and using carbon dioxide from the atmosphere to form complex food substances including several sugars. A high proportion is sucrose. The liquid secreted by the nectary, which is associated with the flower, contains these sugars varying both in number and proportions according to the species of the plant, the soil and climatic conditions. The nectar also contains traces of protein, salts, acids, enzymes and aromatic substances all in a watery solution, so that there is some justification for calling Honey the "bottled sunshine" tag.

This sweet liquid is offered at specific times in a regular daily cycle according to the species of the flower. Its secretion is influenced by the weather, particularly temperature and humidity, and also by soil moisture. Nectars vary considerably in flavour and sweetness, plum nectar has a sugar concentration of only 15%, lime 32-35%, white clover 40% and marjoram reaches 76%.

THE BEES TURN NECTAR INTO HONEY

Having gathered some nectar, hard gotten bare sustenance for the colony at times, rising to full loads in a flow, it is carried back to the hive in the bee's honey sac, a non digestive crop and passed on to the house bees. Two things have to be done to convert the nectar into honey, firstly the water content, anything up to 80% has to be reduced to prevent fermentation. The house bees do this by exposing small quantities of the liquid to the warmth (over 90 °F-33 °C) of a well ventilated part of the hive, secondly and at the same time the sucrose in the nectar is being changed by the addition of the enzyme "invertase" produced in the glands of the bee, into two sugars Fructose and Glucose. The object of these changes is to produce a food which when scaled over in the cells of the comb will keep until needed, and is suitable with the addition of water for feeding to larvae when rearing starts in the spring. Strong colonies in good foraging areas can store two to four times as much honey as they need for winter survival; it is this surplus that the beekeeper can take.

STORAGE OF HONEY IN THE HIVE

As packed away in the comb by the bees honey is a clear liquid, its storage is a model of hygienic food preservation, each cell is filled with pure, well ripened, translucent honey, and covered with an individual wax capping. This is an example to the beekeeper when processing extracted honey, which being sticky stuff can pick up all sorts of minute debris, small pieces of wax, dust from the air, or from the vessels in which it is being handled, even fibres from the wrong sort of towel used for drying the jars. The best beekeepers set themselves a high standard.

HONEY IN THE JAR

Most honey is a blend containing a mixture of flavours gathered in the working area round the hive. Honey varies in colour, willowherb is one of the lightest, the range goes through the golden shades from a pale straw to strong hues, darker colours come from hawthorn and field beans, but the depth of the hue is also affected by the kind of soil, heavy clay will give a darker honey from the same plants than that produced on a sandy soil. When taken from the hive fully sealed, most honey is liquid but after a period of storage, particularly after extraction, it will granulate. This is a normal sign of maturity. Clover honey granulates with a fine smooth quality; this honey is much sought after, and is an excellent component of any blend. Some types of honey set rather hard with a coarse structure, which can be avoided by a process of warming and stirring-in some partly melted crystallised honey of a good type as a seed to give a smooth texture. Later on the honey can be warmed and stirred to produce a spreadable honey, known as creamed or soft set. Both soft set and granulated can be made clear again by warming gently.

Heather honey is in a separate class, it is a jelly with bubbles in it which liquefies when stirred, it is usually a rich reddish amber in colour and is the honey of the connoisseur. It is obtainable in the jar as described; it is also sold in the comb.

HONEY IN THE COMB

One of the traditional forms of honey is in the comb. In skep beekeeping days the sealed honey storage comb was just cut out and sold in the country markets, then the "Section" came in. This is a wooden frame just over 4" square carrying about a pound of honey. A more recent method of presentation is "cut comb", small pieces of sealed virgin comb, from 8 to 12 ozs., packed in transparent topped plastic cases. The attraction of comb honey is that it retains its full flavour and aroma, some of which is inevitably lost in the extraction process.

QUALITY HONEY AT A FAIR PRICE

These are the main types of honey available in the British Isles from home production, their flavour and quality do justify the premium prices obtainable provided they are matched by a similar standard of presentation. There is never enough good home produced honey to meet the demand, for though fairly regular high grade crops can be taken, the crop per hive is very much less than overseas beekeepers get.

HONEY AS A FOOD SWEETENER

Honey is an easily digested and assimilated energy food for all who can take their normal quota of sugar. Its use as a sweetener is largely governed by personal preference, just a little mild flavoured honey added to cooked or bottled fruit, or to a fresh fruit salad, will mellow and improve the dish, too much added will mask the natural flavours.

For those who like to use honey as a cookery ingredient, so adding a unique background flavour, here are two recipes from Margaret Calder's Collection of Recipes:

PICNIC FRUIT CAKE

4 ozs butter
3 eggs
1 teaspoon baking powder
½ teaspoon nutmeg
2 tablespoons honey
8 ozs walnuts
8 ozs caster sugar
6 ozs plain flour
¼ teaspoon salt
2 tablespoons milk
¼ teaspoon bicarbonate of soda
1 lb seedless raisins

Method

1. Cream butter and sugar until light and fluffy.
2. Beat eggs together, then add to creamed mixture with flour, baking powder, salt, and nutmeg.
3. Stir in milk,
4. Mix honey together and add to mixture.
5. Add chopped walnuts and raisins and pour into a greased and floured 2 lb loaf tin.
6. Bake at 160°C/325°F (Gas mark 3) for 2 ½ hours.
7. Cool in tin before turning out.

SULTANA CAKE

4 ozs margarine
¼ cup milk
1 level tablespoon honey
8 ozs self-raising flour
2 eggs
3 ozs sultanas
2 ½ ozs sugar

Method

1. Cream margarine, honey and sugar.
2. Beat in eggs adding a little flour before beating in second egg.
3. Mix in milk and sultanas and fold in remaining flour.
4. Turn into a prepared 7" tin and bake in a moderate oven 180°C /350°F (Gas mark 4) middle shelf for about 1 hour.

KEEPING HONEY

Honey should be stored in a cool place in containers which are airtight. If it is being kept in lever lid honey tins, both the lid and the rim should be absolutely clean and free from honey. If in glass or plastic jars, the seal, whether it is plastic or a waxed card wad, should be clean and the lid screwed down tightly.

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