



Granulated or Crystallized Honey (No 4)

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INTRODUCTORY NOTE

Apart from wishing to provide interest and pleasure for Beekeepers, the National Honey Show has the serious aim of raising the standards of production of honey and all other bee-produce.

With this objective in view, leading authorities have been invited to write for our Schedules on a number of subjects and their work is here available for more general distribution. We wish to thank all our contributors, they are leading exponents of their skills, we have, however, to make it clear that the advice which they give is their own individual method, we feel sure that they would be the first to encourage new alternative ways of preparation with a view to continual advancement and progress within the Craft.

Hon. General Secretary

NATIONAL HONEY SHOW

Granulated or Crystallized Honey

BY CECIL C. TONSLEY, F.R.E.S.

Editor of the British Bee Journal

In my former article I described the method of securing honey from the comb as liquid, or as it is known in the trade, "clear". Now let us move on to the next stage when the majority of honey through its sugar combination of dextrose (34%) to levulose (42%) changes from the liquid state to the granulated or crystallized state.

This combination or balance of the two main mono-sacharide sugars dextrose and levulose is the key factor to crystallization of honey-the higher the dextrose the more quickly the honey is liable to granulate. Brassicas and similar honeys, like mustard, kale, etc., are rapid in their crystallizing and honey such as rape will often set up in the comb before the beekeeper can extract it. These honeys are ideal for "seeding

“ other honeys where the crystallizing property is slower and often the crystal formation rather coarse and large. (I shall bring in something about “ seeding “ further on).

On the other hand when the levulose content of the honey is abnormally high, as an acacia honey (**pseudo-acacia**) and tupelo from the swamp lands of Florida, then crystallization may be arrested for long periods, even several years. These honeys are best dealt with as liquid or “ clear “ honey for their shelf-life is very long compared to others.

However, let us return to crystallization and its effect in honey. Firstly, and within a comparatively short while of being extracted, honey begins to show a distinct haziness whether in bulk (28 lb. tins or larger) or in glass containers, a phenomenon referred to by honey judges as insipient granulation. This is the preliminary action of the fine dextrose crystals in the honey as they precipitate themselves out of the honey mass. These nuclei soon attract to themselves more crystals and soon the honey goes from clear to opaque and then to a solid state. At first this solid mass might be reasonably soft but quite quickly it takes on a much harder and finer texture, depending upon the source of the honey. The honey is now known as naturally crystallized or “ set “.

Naturally crystallized or granulated honey is that mostly sold by the small amateur beekeeper who may have a few intimate outlets or more often than not disposes of the bulk of his harvest to friends, a passing trade, or relatives.

No one despises this product for it is natural and if the beekeeper has carefully prepared his honey can be most attractive and appetizing. The difficulty lies in its full utilization, because as time passes the harder the honey seems to get. Such natural set honey has been known to bend spoons and occasionally break the blade of a household knife as the family struggled to remove the solidified honey from the jar.

However, there is another form of crystallized or set honey which every honey producer from the one-hive beekeeper to the large scale operator can produce with a little patience and one which the public at large have come to appreciate more and more, for set honey sales exceed those of liquid or “ clear “.

Firstly, it is important that when the beekeeper initially extracts his honey he strains it in the normal manner as outlined do my earlier article and then fills it into 28 lb. or similar tins. This bulk honey should then be set aside and left -in a cool, dry place.

In due course the majority of the honey will crystallize and set up. Let it get on with the job until crystallization is complete and a fine white dry surface betoken the fact that the honey has acquired a good natural set. At first glance many honeys in bulk look as though they have set with a fine, smooth grain texture but only by tasting and passing the sample over the tongue will it be found whether or not the honey is fine grain.

Now if your honey has been selected, as I describe in my earlier writing, there is invariably going to be a difference in honey texture from one honey to another-usually the lighter honeys produce the finer grain.

If all your honey crystallizes with a fine grain a few of the steps that I am going to describe now will not be necessary but if you have a batch of honey which exhibits a coarse grain appearance then the beekeeper can do something about it; in other words he can “ seed “ it.

“Seeding” Honey

The matter of seeding honey is not difficult.

If your 28 lb. tin of honey, for example, has crystallized coarsely and has a poor appearance but otherwise an acceptable flavour proceed as follows:

Warm the honey through in a warm box at 120°-130° F until it is liquid. This is a slow process rather than a quick one taking up to a couple of days. Do not apply sudden heat but build it up slowly allowing the honey to absorb the heat. This is, of course, what happens in a warming box such as used by beekeepers.

When the honey is quite clear allow it to cool to 65°F. Meanwhile prepare a sample of fine grain honey from another part of your stock -or if you are unlucky enough to be without any fine grain honey at all beg or borrow it from another beekeeper.

While the bulk is cooling put about 3 lbs of the fine grain into the warming cabinet but only raise the temperature to 90°F and leave it there until it has softened to the consistency of porridge. Now knead it slowly with a hard wood stick until it runs freely.

Pour the fine grain honey into the 28 lb tin. (You may need to remove a little of the liquid honey to accommodate the “ seed “ but do not skimp the seed it should not be less than 10% of the bulk of honey to which it is introduced).

Again with the stick slowly but firmly and evenly distribute the fine grain honey throughout the bulk. A better way of doing this is to use a hand drill in conjunction with a paint stirrer. Maintain an even but not too quick stirring motion.

When it is estimated that the seed is well distributed in the bulk the honey should be set aside in a cool, even-temperated place for a few days. (The optimum temperature is 57°F for honey to crystallize).

After a period of time depending upon the kind of honey :it will be seen that the bulk has taken on a good set. Now it can be prepared for bottling.

Again put it into the warming cabinet and set the thermostat for 90°F. In a day but sometimes a little less the honey will be found to have softened through with a small amount of liquidity on the outside edges. Remove the tin or tins from the heat and with the hard-wood stick slowly work the honey until it is quite mobile. In fact it should be something like pourable porridge. Firstly, remove enough honey to re-seed further supplies of bulk honey and then bottle the remainder in the normal way and again put the honey in a cool place (50°-57°F) to stand for a few days. At the end of that period it will be re-set and just about the consistence of firm butter. This is known in the trade as “ set “ or “ soft set “ honey. (The “ seed “ obtained, by the way, should be kept in a cool, even temperature until next required. This as your seed “ bank “ for the future.)

The advantages of soft set honey are, that it can be easily spread and a jar of honey can be utilised right down to the last scraping.

Its disadvantage is that once bottled and set it should be sold or consumed within a reasonably short period. It does not have the same keeping qualities of natural set honey unless retained in a controlled temperature.

Should your honey set up or crystallize naturally to a fine grain texture seeding is unnecessary. To produce a soft set from it, all you need to do is warm the bulk in the warming cabinet with the thermostat set at 90°F until the honey has softened with a small amount of liquidity at the edges. Stir the mass with your hard wood stick until the bulk is pourable and then bottle as already described and set aside to reset.

The secret of getting a good sample of either natural set or soft set or creamed honey, as it is often described, is to prevent “ frosting “, or the ugly pattern which forms on the inside of a jar caused by air in the honey being squeezed out as the honey crystallizes. Unfortunately some of the air cannot escape and collects mainly under the shoulders of the jar and there it remains firmly pressed against the glass. “ Frosting “ happens a great deal more in naturally set honey where the honey has not been allowed to stand in a warm room long enough after extraction to rid itself of the air which has been beaten into it by the extractor.

Some exhibitors get over the problem by very gently stirring their honey from time to time with a very thin wooden spatular as the jars stand in a window facing a northern aspect. A north light in cool conditions encourages crystallization.

Frosting can also occur with creamed or soft honey but this is greatly eliminated when the honey is stored in cold conditions as already described. Resetting is speeded up and any air is locked in the honey itself.

For the Exhibitor

Both exhibitor and public to the Honey Section of a Show are often puzzled by the judge's choice of prize-winning exhibits in the crystallized honey classes; what to them looked as though they should have been among the award-winning exhibits stand completely overlooked, but unfortunately they are often unaware of what the judge has found in his examination of each exhibit.

Many an excellent exhibit on the bench has been passed over because the exhibitor has failed to observe the golden rule of preparation-to see that both honey and container is spotlessly clean. In the case of granulated or crystallized honey the tell-tale specks appear at the base of the jar, if they were not already there before the jar was filled.

Secondly, good natural set honey in its prime should not carry any wetness on its surface and certainly be free of fermentation and solidified air scum.

“Frosting” is the bugbear of many a potential exhibit because of its unsightliness; it carries a penalty.

A fine texture honey has preference over a coarse grain but when a honey exhibits a lard-like texture which mostly goes with the really very white setting honeys it is also a poor exhibit. Firmness and smoothness is what a judge looks for and also a honey which has a light creamy colour. The stronger, dark honeys rarely crystallize well or have the taste and aroma of the lighter honeys.

Creamed or soft set honey; the latter being a better description for this product of the beehive; is not new to honey shows by any means but to judge and exhibitor alike it is often a disappointment.

A good deal of the trouble arises from the fact that directions for its preparation have often been misleading and altogether wrong, with the result that the finished product is anything but appetizing.

If the exhibitor proceeds as I have outlined previously and this method is not something which I have invented but the result of following laboratory practice and using a small amount of common-sense -he will produce for both the show bench and his sales outlets a product of which he will be justly proud and his customer eager to buy more.

Firstly, soft set honey must exhibit most of the points in natural set honey, i.e., contains no extraneous matter, must be free from “ frosting “ or nearly so, have a good texture, be slightly smoother on the tongue than natural set, have a good taste and aroma. Its colour should follow that of the natural crystallized honey but its difference should lie .in its spreadability: it must have the mobility of butter just taken from the refrigerator. The only time when the judge can give way a little on this point is in the event of honey being exhibited in a place where the temperature is abnormally high such as a tent on an agricultural ground on a hot summer day. This tends to soften and sweat such exhibits.

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The National Honey Show presents annually a three day show of the best of the products of the honeybee, with additional classes for kindred interests and skills, including school bee-keeping, a lecture programme and a display of the latest and finest bee-keeping equipment on the market today.

It attracts entries and beekeepers from all over these Isles, and a number of leading organisations hold meetings during the Show.