

BEESWAX FOR SHOW

By John Goodwin

This short article has been written by BBKA Honey Show Judge, John Goodwin, to help exhibitors prepare their beeswax exhibits for show. I thank John for his kindness in sharing his expertise.

John is the author of “**Honey show classes: A guide for competitors, organisers and judges**”.

A LITTLE HISTORY

There is a bit of history with beeswax classes in honey shows. At one time, households would buy beeswax to make their own polish and use for various lubrication applications e.g. saws and furniture drawers. The hygiene of the wax mattered and the perfection of the casting was for better sales presentation

SINGLE WAX BLOCK

Rather than give a specific method, the following offers a number of options which can be used depending upon the resources available to you. All the following methods will work with the various bits of equipment.

There are a number of sources for show wax:

- Wax cappings removed from your supers during the honey extraction. (Use an uncapping knife to get the best yield of wax.)
- Place the cappings on a mesh over your extractor or bucket to drain off the honey from the cappings.
- Nice new brace comb collected when doing hive inspections.
- Wild comb, collected normally when dealing with swarms, nice, new and not having been used for brood or stores. If the bees have used the comb for stores but not brood, place on a mesh as the cappings above.
- Do not be tempted to use wax for show that the bees have used for brood, or have used for stores for a number of years and odd bits of foundation. All these sources of wax tend to produce very dark and dull wax.

Having got a source of wax suitable for showing, we need to wash the final bit of honey from the cappings. An old kitchen colander is ideal for this. If you live in a hard water area, it is advisable to use distilled water or to rinse your wax in rainwater from a very clean storage source. Water from a dehumidifier is also suitable.

Now we have to melt the wax and pre-filter to form a block. There are various methods to do this:

- If you have the option and use of a solar extractor, make use of it to melt your show wax. The solar extractor seems to help bleach the wax to a nice primrose colour. With the solar extractor, an initial filtering can be carried out using old tights or net curtains.

- Using a bain-marie on the kitchen cooker ring or hob, care must be taken not to boil the water vigorously or leave the melting wax unattended. It must be noted that melted beeswax is highly flammable and dangerous. When completely melted, pour the liquid wax over a piece of net curtain and run the molten wax carefully into the container mentioned later.
- Use a warming cabinet which has a thermostat set to less than 75°C: normally around 60°C for show wax, as you just want the wax melted and able to flow. The higher the temperature that the wax is taken to, the darker it will be. Also, for safety, always have an override thermostat set to 90°C in case the first one fails. Some people use their kitchen oven satisfactorily, but extreme care must be taken melting wax in the home cooker. Remember that beeswax is a very combustible compound.
- With all the above methods, when the wax is melted, pour it into a container lined either with greaseproof paper or a material that beeswax will not adhere to – an example being silicone.

Secondary filtering (normally reheating will be required) of the wax block:

- There are a number of filtering mediums available that have been used for filtering show wax: Whatman paper filters, disposable J-cloths, coffee filters, nappy liners, tea bag material and surgical lint. There are many more that can be used. When choosing a filter material, make sure that the material cannot shed lint fibres or any other material as this ends up contaminating the showpiece. Lint has a fluffy side and a smooth side.

THE MOULD

Depending on the schedule, the mould has to be of a size to produce a cast wax block to the dimensions required. Most shows specify a required depth of the showpiece, so the mould used must have the dimensions and capacity to achieve this. To do a check for mould capacity, a good tip is to do a pre-weigh.

- As the specific gravity of beeswax and water is similar (wax is 0.963), water can be used to assimilate beeswax to check the bowl capacity, by weighing the bowl on a top pan balance or similar type of weighing scales. Place the empty bowl on the scale, tare off the bowl weight, then fill the bowl to the desired weight, and mark off the water level in the bowl with a magic marker or similar indelible marker, having first checked the bowl is level using a spirit level.
- A glass kitchen mixing basin is ideal. Pyrex is really good, but make sure that there is no imprint on the bottom of the bowl. Unfortunately, Pyrex-branded basins now have the Pyrex imprint on the inside of the basin. All is not lost: if you search at your local large supermarket, their own-brand label basins made out of the same material as Pyrex (borosilicate glass) do not have an imprint.
- The basin or mould chosen should be used only for wax casting. General use will lead to scratches on the bowl surface. These scratches will result in a poorly finished beeswax showpiece, as the surface scratches on the mould are transmitted onto its surface.
- A silicone mould can also be used; again, it is better just to use the mould for show purposes only.
- To prepare the glass mould, firstly we need to condition the mould with a release agent, that will release the wax showpiece when set and cold. In the past, green dishwashing detergent was used for mould conditioning. More recently, silicone release spray has been used.

- In the past, silicone sprays used to leave an after smell of the spray in the beeswax showpiece. With modern sprays this problem seems to have been alleviated and they do not now leave an odour or smell. One of the big advantages of using the silicone spray is the resulting finish achieved on the beeswax showpiece. It is so good it virtually reflects the finish of the mould that has been used.
- The finish obtained by using green washing-up detergent is rather dull until buffed up with a polishing cloth. The reason that you cannot get a perfect finish with the detergent is that the detergent will break down some of the wax into soap, as the latter makes contact with the side of the mould via the very thin film of detergent. This soap film is readily buffed up with a polishing cloth, but the finish is not as perfect as the silicone spray release method.
- If you decide to use the detergent method, a good way is to fill your kitchen sink with very hot water and add green liquid detergent until the water is green, then to submerge your mould in the water until completely covered. Leave the mould for a few minutes. Remove the bowl, being careful not to scald yourself and being careful not to touch the inside of the bowl. Invert the bowl on the draining board and leave to dry. At this stage, double-check the size of wax piece required for the show.
- If you have enough good quality beeswax and intend to exhibit at a number of shows, it is prudent, when all the equipment is available and set up, to cast a number of showpieces of different weights that you will require during the show season.
- Obviously, you will need a number of basins or moulds to carry out this production method.
- To produce a completely smooth piece of beeswax suitable for showing, the mould has to be at the same temperature as the molten beeswax. To enable the wax to cool evenly, we need to place a lid on top of the mould. Again, the lid has to be preheated to the same temperature as the mould and wax: it can be a piece of very thick glass or an old thick dinner plate. Also, for good heat dissipation, warm a couple of house bricks wrapped in dustbin liners (to stop dust contamination) to place on the plate or glass lid.
- There are various ways of insulating the mould: e.g. by placing the mould in a water bath (the wet method). Again, the water bath has to be brought up to the same temperature as the mould and wax. Another method is to have the mould in an insulated container (dry method). If using a warming cabinet, the mould will not need any insulation.
- To enable the wax to cool evenly, we need to place a lid on top of the mould. Again, the lid has to be preheated to the same temperature as the mould and wax. The insulation and the heat-holding ability of the mould lid is the most important part of the wax-moulding process. As the other surfaces of the beeswax piece are in contact with the mould surface, the adhesion of the wax to the mould surface almost guarantees a good smooth finish. The top of the wax piece does not have this facility of adhesion to the mould side, so that the top surface of the beeswax piece is cooling at its own rate and not at the rate of the mould, leading to a rippled finish if the cooling rate is not controlled. So, the lid has to have the ability to provide a uniform surface of cooling by radiation as there is no other means of controlling the wax piece's top surface. Hence the use of a massive heat sink in form of two house bricks, as mentioned above.

The process of pouring the wax begins with getting the mould level and checked with a spirit level.

To hand, we will have:

- A warm mould with a fill level marked.
- A warming cabinet up to temperature or an oven.
- Enough melted wax.
- Lid: dinner plate or a piece of plate glass.
- Wrapped bricks for top of lid.

Pouring:

- Wax is poured as quickly as possible without causing a splash of the wax.
- Lid is placed on the mould top.
- Bricks are placed on top of lid as above.
- Door of cabinet or oven is shut and sealed for at least 10 hours.
- Oven and warming cabinet are switched off.

To remove the wax piece from the mould:

- Fill the mould up with soft water and place in the fridge,
- or place the mould in a plastic bucket (always use a plastic bucket, not metal, as the edges of the wax chip very easy). Carefully fill the bucket with cold water (tap water is OK at this stage of the process) without damaging the cast piece. Put the bucket into a greenhouse, conservatory or similar area, where the ambient temperature will increase and decrease during the day. The cast piece should then float to the top of the bucket.

SHOWING

See GENERAL ADVICE below.

STORAGE

See GENERAL ADVICE below.

28-GRAM BLOCKS OF BEESWAX

A similar process is used to source wax and prepare as for the single large block of beeswax. A number of shows request that you show six pieces, which is a little awkward, as the standard mould from most suppliers has five moulding cavities. Thus, in preparing to show, two lots must be cast, either simultaneously using two moulds with five cavities each, or carrying out a second casting doing two castings of five.

As the moulds with cavities are made out of a thin sheet of rigid plastic, a good idea is to make a frame to fit round the moulds out of ¾-inch plywood. (see photo below). This gives the mould a bit of stability and some insulation. By also making up a lid of similar material, a mass of warm material can be placed onto the mould, helping more even cooling, as done with the large block of wax.



Plywood frame to hold wax moulds. Photo: John Goodwin.

MOULD TREATMENT

To achieve the weight requested by the schedule, the same method is used as for the single beeswax block. To do a check for mould capacity, a good tip is to do a pre-weigh. As the specific gravities of wax and water are similar, water can be used to assimilate beeswax to check the mould cavities' capacity. Firstly, check the mould is level, using a spirit level: this is highly critical in producing 28-gram beeswax pieces, as any deviation from the level will affect the end weight of the beeswax piece. Using a top pan balance or similar type of weighing scales to weigh the mould, place the empty mould onto the scale and tare off the mould's weight. Then fill the first cavity to the desired weight and mark off the water level in the cavity with a magic marker or similar indelible marker. Then tare off the weight, read and repeat filling all five cavities.

To prepare the mould, use the methods discussed for casting the large beeswax block.

MOULDING

To produce a completely smooth piece of beeswax suitable for showing, the mould has to be at the same temperature as the molten beeswax. If you make a plywood frame for your plastic mould as mentioned above, this will stop warping and help produce a better beeswax show piece.

One way of controlling the cooling of the top surface is to put a massive heat sink in the form of a house brick wrapped in a dustbin liner, as mentioned above. Having such a heavy lid on the plastic mould requires a wooden strengthening jig made out of a piece of $\frac{3}{4}$ -inch plywood.

There are various ways of insulating the mould, as we are having to strengthen it as mentioned above. The $\frac{3}{4}$ plywood cut to fit the mould acts as an insulator as well.

The process of pouring the wax starts with getting the mould level by using a spirit level (as below).



Use a spirit level to ensure eve moulding. Photo: John Goodwin.

To hand, we will have:

- A warm mould with a fill level marked in each cavity.
- A warming cabinet or oven up to temperature.
- Enough melted wax in a jug that pours well.
- Lid.
- Brick for top of lid.

Pouring:

- Wax is poured as quickly as possible into each of the mould cavities without causing a splash of the wax.

- Lid is placed on the mould top.
- Bricks are placed on top of lid.
- Door of cabinet or oven is sealed shut for at least 10 hours.

To remove the wax pieces from the mould, place the mould into a fridge, or in a plastic bucket and carefully fill the bucket with cold water and place into a greenhouse, conservatory or a similar area as mentioned above.

SHOWING

See GENERAL ADVICE below.

STORAGE

See GENERAL ADVICE below.

COMMERCIAL WAX BLOCK

This is a relatively new class, thought to have been first shown in Yorkshire.

A similar process to that for the single large block of beeswax is used to source and prepare the wax. However, a good tip is to use a block of beeswax that has been shown a few times and has lost its initial lustre: such a wax block is ideal for exhibiting in this class. Exhibitors will often use such a wax block to win in the commercial class. Another source of blocks for this class is a piece or block of wax that is not perfectly cast, as this class is judged on the colour, aroma and the wax's granular structure after the block has been broken by the judge. The granular structure should be as a very good cheddar cheese when broken. As beeswax is a naturally produced product, you cannot control the structure. The commercial beeswax class is one class where it is not possible to re-show the wax block, as it has to be broken to be judged. The only way that the block could be shown again would be to recast it. The problem with recasting a block of beeswax is that you lose some of the aroma, and the granular structure seems to degrade.

Make sure that the beeswax block you have available for this class conforms to the schedule. There will always be a minimum weight and normally a minimum thickness. As presentation of finish is not as important as with the other beeswax block exhibits, you can exhibit in a polythene container providing it is clean and does not give off any aroma which could affect the aroma of the beeswax block. It has been known for some exhibitors to show their beeswax block in a sandwich bag: needless to say, they did not win a prize.

Just as an aside, a Wax Chandler at the National Honey Show some years ago remarked that, as chandlers, they go to a great deal of trouble trying to eliminate aroma and colour from the wax, as the applications and industries market into which they sell their wax requires the product to be inert and white. The only application where an aroma and colour are required of the beeswax is church candles, for which they did not supply the wax.

So possibly, to be true to what is required for the commercial class, is not an exhibit with aroma or a nice primrose colour. However, read the schedule and make sure you know what the judges require.

STORAGE

See GENERAL ADVICE below.

GENERAL ADVICE

SHOWING

When packing exhibits for the show, double-check that you have packed the correct size and weight for the show you are about to attend. It is quite a common mistake for exhibitors to pack the wrong size, weight or quantities, as show schedules vary.

Wax exhibits should always be shown in a sealed box or container that the judge can open for judging. A good tip is to line the floor of the showcase with dark blue velvet to show the wax off: the blue contrasts nicely with the primrose colour of the beeswax.

STORAGE

The beeswax piece should be well wrapped in tissue, kitchen roll or a material that will not scratch the surface of the wax but protect the piece from chipping. The wax piece should then be placed in a sealed container (biscuit tins are ideal). A good tip is to place your old filter medium or a piece of propolis in the sealed container, taking care that these items do not come into physical contact with the beeswax showpieces. The aroma of propolis or the filter medium gives the beeswax showpiece a fresh smell as if it had just been cast. Never wrap or have cling film near to your beeswax block, as it will remove the finish on the wax block.

John Goodwin. BBKA Honey Show Judge.

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