



## South Tipperary Beekeepers' Association

Fact Sheet no. 5

### Basic Technique for Making up Nuclei

Nuclei can be made up for use in the home apiary or for immediate moving away to an out apiary. In the latter case it is easier as the bees remain in the hive and do not fly back to the parent colony. When making up for home use extra bees must be added to allow for losses as flying bees return to the old site. It is difficult to judge how many bees are needed and the nuclei must be checked every day for 4 – 5 days to see if enough bees remain and if not they need to be topped up from original source. This is one reason nuclei are made up of emerging brood and they suffer less from chilling at this stage of their life and every bee that emerges can help with the care of the brood. Second reason is that the queen can quickly lay up these cells thus the nuclei gains size quickly.

Several colonies can be used for making up a nuclei. If nuclei are made up this way using bees and frames from several hives it is advisable to spray each frame with a weak solution of sugar syrup. Leave the frames well apart for five minutes exposing them to light. The bees that are shaken in should be also sprayed slightly. Finally bring the frames together slowly after smoking well. Alternatively all the frames can come from one hive and the bees from another. All hives must be disease free.

#### The Nuclei Box

- Capable of holding five frames
- Entrance capable of providing plenty of ventilation but be capable of being restricted to prevent robbing.
- Each nuc should have its own feeder
- Dept of box requires a 25mm clearance below bottom of frames to accommodate a queen cell protruding from the bottom of a frame.
- Each should have its own travel screen.
- Deep roof at least 200mm.

#### Essential components for nuclei are

- A queen
- Bees
- Food honey and pollen
- Emerging brood

If being used for mating a queen cell can be given in lieu of a queen.

#### .Precautions

The nuclei are a very unbalanced little unit until such time as the queen is mated and has been laying for some time.

- It is essential that it is supplied with food for its needs until foragers are evident and are able to collect the colony's needs.
- Entrances must remain small particularly if there are any large stocks nearby which could become robbers.
- Wasps can be a problem.
- Drifting must be avoided by suitable layout.
- Chalk brood (*Ascospaera Apis*) always seems to be a problem with nuclei until they become established; the trigger is temperature, protein and CO<sub>2</sub> levels.
- Samples for adult bee diseases should be taken in autumn.
- Nuclei should not be allowed rear their own queen.

### Method of Nuclei Production

- Open colony quietly
- Find queen and place in match box with 3-4 bees
- Examine brood frames and those containing emerging and advanced brood are selected and placed in nucleus box to the number required i.e. 4 frames for a 4 frame nucleus. If nuc is to be taken away all bees are left on the frames and a further 2 frames are shaken in
- Make sure frames are tight in box to prevent crushing bees.
- Close box for immediate removal to new site
- At new site open box allow bees to fly then gently smoke and transfer to full brood chamber
- Once transferred introduce queen in butler cage or add mature queen cell.
- Add 4 frames of foundation and feed 5 l syrup.
- Close up and leave for 6 days.
- If the nucleus is to stay in the home apiary the frames should be slightly shaken over the brood chamber to remove the older bees before being put into nuc box.
- Shake 4 more frames of bees slightly over brood chamber and then the remainder bees into the nuc.
- Place nuclei in its permanent position with entrance closed with grass. The queen is introduced and a frame of foundation added.

The main differences between home nuclei and out apiary are

- The effort made not to introduce old bees
- The extra bees added to allow for those that return home
- The fact that you don't feed for 6 days

The reason it is not fed straight away is that the older bees may carry the message back that syrup is available and the parent colony could rob out the nuc.

Therefore when making such a nuc make sure it has enough food for 6 days

Syrup cannot be given until all the old bees have gone home and by then the queen will be established.

The grass stuffed in the entrance will alert the foragers that their location has changed.

Nucs made up for sale should have at least 1 frame of stores as you do not know what will happen after they leave the apiary. Also it would be better to use the old q in the nuc.

Any colony which has lost a nuc will lose some of its potential for honey production

How much will depend on size of nuc, time of year and the availability of nectar

Nuc made in June with 1 frame of brood and 1 frame of stores and bees with a young laying queen will build up to a full colony by winter.

Nuc made in June with 3 frame of brood and 1 frame of stores and bees with a queen cell will build up to a 5 frame nuc by winter

Swarming colonies can be broken up into this size nuc each given a ripe queen cell and although build up will be slower as no brood will be produced for about a month as the queen is mated and laying. After that they build up quickly and should be adequate for over wintering. They can be supplemented with a frame or two of brood.