

BeeGYM Projects.

‘Trialling the BeeGYMs’

Purpose:

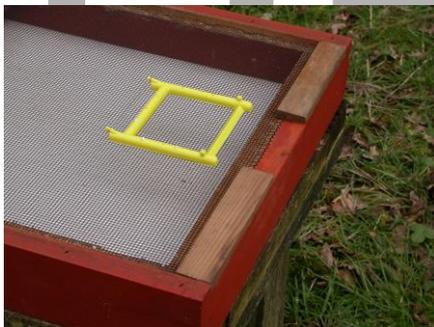
Many beekeepers would like to reduce mite populations without, or reducing, the use of chemical interventions. This is one of the prime motivating forces for the use of Integrated Pest Management in many fields including beekeeping. For some time there have been devices called the ‘BeeGYM’ illustrated below which is said to enable bees to remove phoretic varroa mites by scraping them off. In conjunction with the use of an open mesh floor, so live mites can fall away from the colony, they are said to be quite effective.

This effectiveness varies from colony to colony, some seeing an increase of mites dropping after a day or so; whilst in others it may take a couple of weeks or more. Once the ‘BeeGYM’ is added there seems to be a particularly active period for about two months.

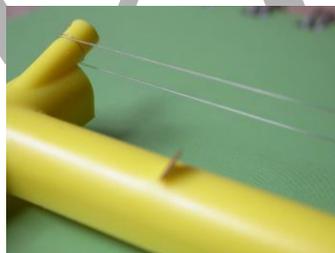
Is the use of either type ‘BeeGYM’ beneficial to varroa control? Is one better than the other?

Setting up the current version of the ‘BeeGYM’:

The BeeGYM’ should be set up on the busiest part of an open mesh floor, which is considered to be adjacent to the entrance. The ‘BeeGYM’ will not work with solid floors as mites knocked off can climb onto any other bee. Set up the ‘BeeGYM’ about 25mm (one inch) behind the hive entrance. See illustration. It is necessary to use entrance blocks. The frame is fitted with the horns furthest away from the entrance.



Horns at the rear of Bee Gym



Monitoring.

Without killing bees and using invasive techniques it seems logical to use mite drop figures to ascertain if the ‘BeeGYM’ is a beneficial aid. Control colonies will be needed where no Bee GYM is fitted and should be of a similar strength and natural mite drop to the BeeGYM fitted colonies. Select one control to each BeeGYM fitted colony.

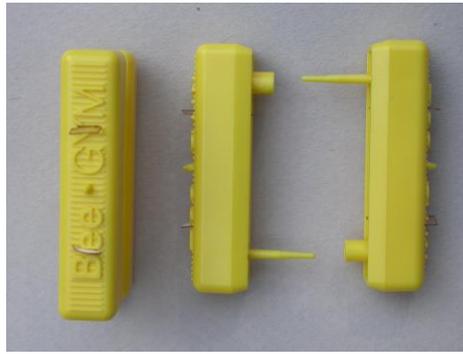
Efficacy can be assessed by comparing the mite drop under and around the ‘BeeGYM’ and the rest of the floor in comparison to a similar control colony without a Bee Gym. Because the mites scraped off by the ‘BeeGYM’ will still be alive it is necessary when monitoring beneath the BeeGYM to use sticky floor inserts, e.g. ‘Fablon’ sheet, or to use a Vaseline barrier around the monitoring area to prevent mites climbing back into the colony or onto the other area of the floor. If the floor tray is closer to the mesh floor than 4 cm. then sticky floor inserts are the only option.

Mark the floor insert or sticky back plastic with a 180mm (7 inches) square directly under the ‘BeeGYM’ If using the floor insert with a Vaseline barrier create a Vaseline barrier around the 180mm square. Record* on a regular basis the number of mites in each arena for both the bee gym and control colony.

The latest ‘BeeGYM’ version with pegged wires is fully compatible for this trial.

A spreadsheet is available for recording.

Brood Frame 'BeeGYM'



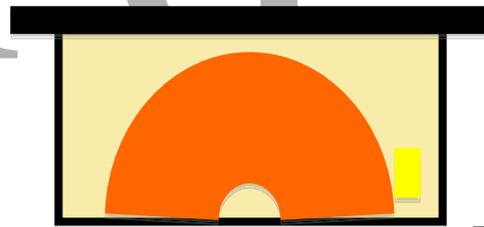
Setting up a trial for the new brood frame 'BeeGYM':

A new version of the 'BeeGYM' is in development for use on brood combs at the lower corner. It comprises two halves, which are placed on each side of the comb and can be fastened together through the comb. Each half has two paddles and a spike for bees to rub themselves on. Having only just been manufactured its efficacy is unknown. This version comes in packs of five.

It would be useful for Stuart Roweth to receive feedback on its efficacy. Several DARG members have expressed an interest in trying them out. I suggest we carry out the following trial and supply the data collected to Stuart as a group.

Setting up the brood frame version of the 'BeeGYM':

The BeeGYM' should be set up on a colony fitted with an open mesh floor. The BeeGYM is divided into its two halves, each of which is pressed back to back onto brood comb, i.e. one half on each side of the brood comb. They should be placed vertically approximately 20mm from the frame side bar with the base approximately 20 mm from the bottom bar. Fit them to the central five frames of the brood nest so that they are adjacent to the hive entrance. Fit entrance blocks so that foraging bees are channelled past the Bee GYMs. Similar entrance blocks must be fitted to the control colonies.



Entrance

Monitoring.

Control colonies will be needed where no Bee GYM is fitted, which should be of a similar strength and natural mite drop as the BeeGYM fitted colonies. Select one control to each BeeGYM fitted colony.

Efficacy can be assessed by comparing the mite drop under and around the 'BeeGYM' and the rest of the floor in comparison to a similar control colony without a Bee Gym. Because the mites scraped off by the 'BeeGYM' will still be alive it is necessary when monitoring beneath the 'BeeGYMs' to use sticky floor inserts, e.g. 'Fablon' sheet, or to use a Vaseline barrier around the monitoring area to prevent mites climbing back into the colony or onto the other area of the floor. If the floor tray is closer to the mesh floor than 4 cm. then sticky floor inserts are the only option.

Mark the floor insert or sticky back plastic with a line 90 mm (3½ inches) back from its front edge directly under the 'BeeGYM' If using the floor insert with a Vaseline barrier then create a Vaseline barrier around the entrance side oblong. Record* on a regular basis the number of mites in each arena for both the bee gym and control colony.

*Note on recording and counting varroa mites. I have found that it is easier and quicker to count mites on a daily basis, as there is less debris to hide mites and confuse the counter. Counts are

totalled once a week fir entry onto the spreadsheet. However to economise on the use of Fablon every other day is a good compromise. Using Fablon also enables examination for instars.

It is necessary to count and record the number of varroa mites in each arena of the floor. A comparison can be made of the percentage of mites found in the 'BeeGYM' arena in comparison to the control. If it is consistently greater than in the control then the BeeGYM is effective. As mentioned in the recording sheet 'Bees DARG 2017 BeeGYM Mite Counts' the percentage is calculated by dividing the number of mites counted in the BeeGYM or Entrance Area by the gross number of mites on the whole floor and multiply by 100.

For a National Hive the BeeGYM Arena equates to 22% of the floor area. For other hives this figure may be different.

If possible monitor mite drop for two weeks before inserting 'BeeGYM'

Some beekeepers use or their hives are constructed for 'warm way' frame positioning. This will mean that the new experimental frame version of the 'BeeGYM' will not be adjacent to the entrance. However useful data can be obtained from using these devices by positioning and monitoring the 3½ inch strip beneath the 'BeeGYM's. Similarly when using double brood boxes or brood and half the same can be applied. I consider that the 'BeeGYM's need to be placed in the lower box rather than the top as if mites are rubbed or knocked off in the top box they have plenty of opportunity to 'land' on the lower frames or bees and maintain their residence status! All that needs to be done is to clearly state the difference when submitting a data sheet.

To obtain BeeGYMs and to contact Stuart stuartroweth@gmail.com

Further information about the 'BeeGYM' can be found at www.beegym.co.uk

RB February 2017

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