Integrated Varroa Management

Measurement of Varroa Mite Levels.

Varroa infestations are often missed by beekeepers until the infestation is severe. It is therefore important to regularly monitor for the pest and to be able to assess when the infestation is likely to have an impact on the colony, It can thus be seen that the key to successful varroa control is knowing how many mites are present in a colony and when to take appropriate action. This sheet explains how to calculate varroa populations. The sheet 'Varroa Treatment Thresholds' advises on when to take action.

There are two accurate methods. Both require some time so a quick assessment method has been included at the end of this sheet. You must remember that the ‘quick guide' is not an accurate assessment.

Method 1.

Natural Mite Mortality.

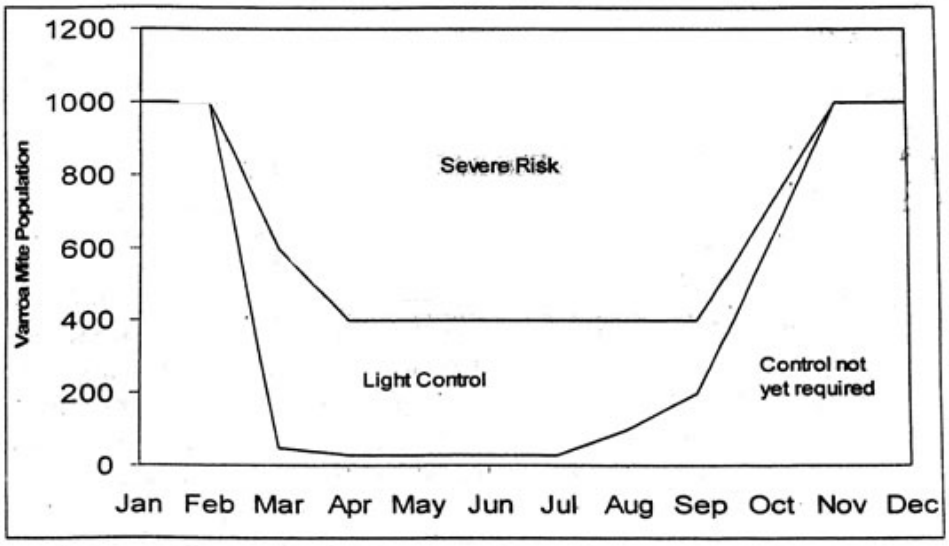
The number of mites recovered from poor debris can give an indication of the mile population. The system is accurate in the winter and summer but during March, April, September and October the results are less accurate.

To use this method-

l) Use a Varroa screen floor or a tray fitted with mesh screen.
2) During summer collect debris for at least 7 days.
3) During anointer collect: debris for a longer period.
4) No treatment should be carried out during the sampling period.
5) Collect the debris and count the number of mites. Divide this figure by the number of days the sample was taken over and you have a daily mite fall figure.
6) Multiply the daily mite fall figure by one of the following
Winter i.e. November to February X 400
Summer i.e. May to August X 30
March, April, September and October X 100*

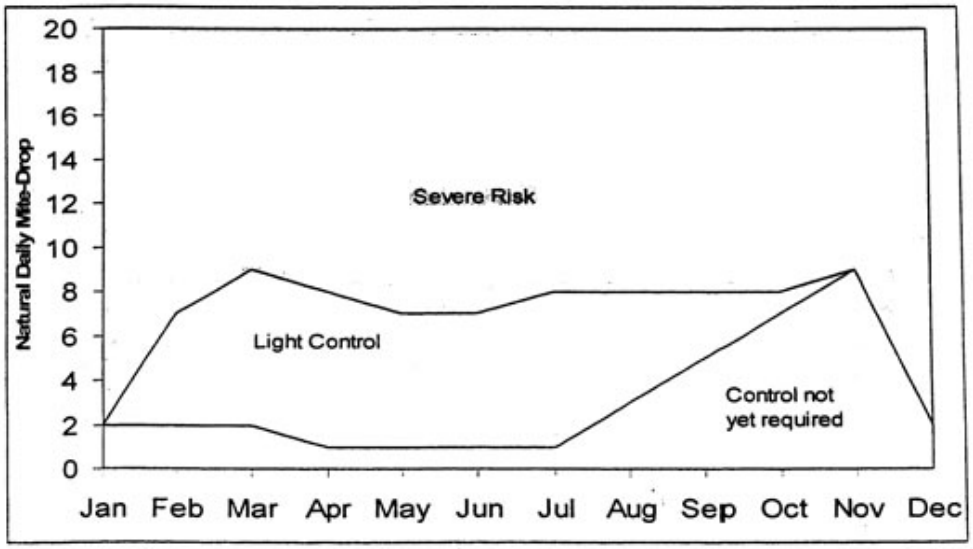
‘Remember this result will be approximate’

Graph 1



The upper band, marked ‘Severe Risk' indicates where the colony could be at severe risk requiring effective visa control.
The central band, is where a suitable non-chemical control should be taken to reduce population levels to the ‘No Control’ band.
The lower band, marked ‘No Control' is the level of mites which, without infestation from other sources, will require no controls to be applied before the following spring.

Graph 2



Varroa Treatment Thresholds.

Treatment thresholds are variable according to where you live in the world, climate, size of colony, the amount of brood, drone brood, number of .brood cycles, etc. Collapse levels can van considerably. Research has shown that colonies can collapse with 1,000 mites yet others survive with far greater numbers. Current understanding shows that these differences are invariably caused by the presence of other factors, often being the presence of other bee diseases such as various virus conditions or acarine *Acarapis woodi* a tracheael mite. These variations and associated conditions are regularly seen in the South West of England.

The key to successful Varroa mite control is knowing the mite population level within a colony and keeping it below the level at which damage may occur.

Set out overleaf are two graphs which have ben drawn up to reflect a typical honey production colony in the South West of England. It presumes a long period rearing brood and a drone brood level of 5%. The graphs show mite levels that are currently considered acceptable within a colony. These levels be set lower the previously as a result of further research data being available. Many beekeepers may consider the levels set are too low but they will keep colonies safe and productive.

Many beekeepers report that colonies that have given high yields of honey often succumb to Varroa in the following winter. The reason for this is a rapid build up of Varroa mites due to more brood being available within the colony and more brood cycles occurring. The beekeeper fails to notice the problem and the colony collapses. It is therefore a key element in any Varroa control system to be aware of mite levels in order that appropriate action can be taken at the right time.

Just because a colony appears to be healthy and strong does not mean that it is not at risk fromVarroa infestation.

To assist beekeepers with the timing of control for Varroa mites a computer model is available for their use on the Central Science Laboratory website. There is no charge and it is easy to use. It is available at:

http:// www.nationalbeeunit.com