National Bee Unit

FAQ 8

Apistan Resistance Test

This sheet describes a simple test (a variation of the USDA Beltsville method) to check if varroa mites are resistant to Apistan. *NB. Apistan resistant mites will almost invariably be cross-resistant to Bayvarol.*

1. Cut a 9mm x 25mm piece from an Apistan strip and staple it to the centre of a piece of thin card about 75mm x 125mm in size.
2. Place the card in a 500ml jar, or 1lb. honey jar, with the strip facing inwards.
3. Prepare a 2-3mm mesh cover to close the jar. Plastic green house shading mesh is ideal. Cut a piece larger than the opening so that it can be folded back over the open end of the jar and secured using a strong elastic band.
4. ***Take precautions not to sample the queen.*** Shake adult bees from 1 or 2 brood combs into a container such as an upturned roof or washing up bowl. Gently scoop up bees with the jar until it is half full.
5. Place a sugar cube in the jar and seal off using the mesh. Store in the dark at room temperature with the mesh uppermost.
6. After 24 hours hit the upturned jar with the palm of your hand over white paper Repeat two more times to dislodge any mites. Count the mites knocked out.
7. Immerse the bees in the jar into a solution of water and washing up liquid (strong washing up strength).
8. Wash the dead bees to remove any remaining mites. Place the bees in a coarse kitchen sieve that will hold bees but let varroa mites through. Secure a honey straining cloth or jelly bag under the sieve to retain mites. Place under a fast running tap or tap with a shower fitting to wash any remaining mites off the bees. Count the number of mites washed off. Dispose of the dead bees and mites in a suitable way, such as composting.
9. If the total number of mites is less than 5 discard the results.
10. Calculate the efficacy as a percentage. Multiply the number of mites knocked down by 100 and divides by the total number of mites i.e. the number knocked down plus those washed off. If the answer is less than 50% it indicates that a resistance problem is likely.
11. Please complete the Voluntary Varroa Resistance form VVRT(1) and return it to the National Bee Unit. A copy of this form is on the reverse, or is obtainable at *www.nationalbeeunit.com* or the NBU.
12. Thank you for your help and co-operation. If you have any queries please contact your local bee inspector or the NBU on 01 904 462 510 or e-mail nbu@fera.gsi.gov.uk.

National Bee Unit
Food and Environment Research Agency
Sand Hutton, York. YO41 1 LZ
Telephone 01 904 462 510 e mail nbu@fera.gsi.gov.uk
January 2007 NBU Web Site: www.nationalbeeunit.com

Voluntary Varroa Resistance Test	**IN CONFIDENCE**	**Product: Pyrethroid**

Your Name (Print) Your Address (Print) Postcode Tel. No. Beekeeper's NBU ID No. (if known)	<u>Send completed form to:</u> Food & Environment Research Agency National Bee Unit Room 02F10 Sand Hutton York YO41 1LZ nbu@fera.gsi.gov.uk Tel: 01904 462510 Fax: 01904 462240	Test Used Beltsville **<u>Key to column headings:</u>** **Mites KD** = Mites knocked down initially **Mites WO** = Mites washed from dead bees (or dropped from dead bees after freezing see *Managing Varroa* leaflet) **Efficacy %** = KD x 100/ (WO+KD)

Apiary Name	County	O/S Map reference (or Post Code)	No. cols in apiary	Colony Tested	Mites KD	Mites WO	Efficacy %	Test Date	*NBU Ref. No. (Office Use Only)*
				1					
				2					
				3					
				4					
				5					
				6					

Instructions

1. *You have space on this form to submit results for one apiary. Simply use additional forms if you wish to submit more results.*
2. *You only need to test **6 colonies per apiary** to get a meaningful result **with this test**. If you do not have this many colonies in the apiary don't worry it is still a good indicator. Submit your results anyway.*
3. *We would be very grateful if you could provide us with the Ordnance Survey Reference of the apiary if possible. This allows us to plot the location on our computer mapping system. The personal information you provide is in confidence.*
4. *For more information please visit our website at www.nationalbeeunit.com*

National Bee Unit
Food and Environment Research Agency
Sand Hutton, York. YO41 1 LZ
Telephone 01 904 462 510 e mail nbu@fera.gsi.gov.uk
January 2007 NBU Web Site: www.nationalbeeunit.com