



30 August 2012

1. Q: **What is Apiguard?**

A: Apiguard is thymol in a slow-release gel used to control varroa mites in honeybee colonies.

2. Q: **How do I apply Apiguard?**

A: See Vita's instructions on or with the product.

If you are using Apiguard in trays: peel back the lid of the tray and place, gel side up on top of the brood frames. Make sure to leave enough space for the bees to get into the tray (use a spacer [an eke] or preferably an empty super on top of the brood chamber). Close the hive. After 2 weeks repeat with a second tray and leave in place for 2-4 weeks.

If you are using the Apiguard 3 kg (6.6 lb) tub: stir the tub well and use the scoop and spatula to apply 50g Apiguard onto the dosing tray provided. Repeat after 2 weeks and leave in place for a further 2-4 weeks. The ideal treatment period is 6 weeks in total.

If you are using the Apiguard 25g sachet: cut one end of the sachet and squeeze onto the dosing tray provided. Repeat after 2 weeks and leave in place for a further 2-4 weeks. The ideal treatment period is 6 weeks in total.

3. Q: **What is the best time of day to apply Apiguard?**

A: Apiguard can be applied at any time of day but for best results treat colonies in the late afternoon or evening when the temperature is lower and the bees are in or returning to the hive. If the Apiguard can be applied when it is cooler, the rate of sublimation of the gel and the activity of the bee colony is lower and the bees will become accustomed to the odour more readily than if the product is applied at the hottest part of the day, when the bees are most active.

4. Q: **Can I use Apiguard with a brood and a half or a double brood?**

A: Yes, but bear in mind that the level of mite control may be slightly lower than with a single brood chamber, as the number of bees that need to receive treatment is higher. Most bees, brood and varroa will usually be in the lower brood chamber, so place the Apiguard on top of the brood frames of the lower chamber and put the second brood chamber on top (ie the Apiguard is between the brood boxes). Repeat after 2 weeks, following Point 2 above.

5. Q: **At what time of the year should I use Apiguard?**

A: Apiguard is best applied in summer or autumn, outside the period of honeyflow. The external temperature should be above 15°C (60°F), which means that the colony is active. Distribution of the Apiguard gel depends on the bees transporting it around the hive during the process of hive cleaning and this activity increases as the external temperature rises. Application during nectar flows should be avoided in case the honey becomes tainted.

6. Q: **Can Apiguard be used in springtime?**

A: Apiguard can be used in springtime, if necessary, provided the daily temperature is high enough. However, it is not the best time to apply the product. Thymol, which is the active ingredient in Apiguard, can sometimes make the queen stop egg-laying for a short period and that is not what is needed in early spring – the colony needs to be growing. If the mite infestation is high in spring then it is safer to use Apiguard rather than let the mites reproduce further, but treatment is otherwise best left until the summer.



7. Q: Should I use Apiguard when supers are on the hive?

A: It is preferable to remove supers before treating with Apiguard. Apiguard may taint honey in supers, but it is unlikely, especially if the honey stores are sealed. Apiguard may taint the brood wax, and low traces may reach the wax of the supers. If you do use Apiguard when supers are in place, make sure that the Apiguard is positioned immediately above the brood nest and that the bees have enough room to get into the tray and to walk through the gel.

8. Q: Can I feed my colonies whilst using Apiguard?

A: Yes and No. The recommendation is not to apply Apiguard whilst feeding simultaneously in case the bees spend all their time taking the feed and not bothering to clean out the Apiguard gel. This is not a high risk and will vary between different colonies, so if you have to feed and treat at the same time, try it in a few colonies first and see how the bees react.

9. Q: The first dose is supposed to be left on for 2 weeks but I've noticed that the gel disappears after only a few days; do I need to put on another dose straight away?

A: No, the speed at which the gel disappears depends on the temperature and on the behaviour of the individual colony. It can take from 2–to 10 days for Apiguard to be removed from the tray/dosing tray. The gel will reduce as vapour is given off and as the bees detect the “foreign material” they try to remove it. At high temperatures the vapours are stronger. The bees will find the gel and try to clean it up quickly. Strong colonies generally work faster than smaller or weaker ones. At lower temperatures, the gel sublimates more slowly. The workers do not detect it as readily and they do not remove it as quickly.

Even if the gel seems to have disappeared after only a few days there is no need to apply a second treatment until 2 weeks have passed. The thymol, although not in the tray, is active throughout the colony during this time having been carried around by the housecleaning bees.

10. Q: It takes longer for the gel in the second dose to disappear; why is this?

A: The second dose usually lasts longer in the trays because the bees have become more accustomed to the odour of thymol in the hive by this time. The cleaning behaviour is not as pronounced as for the initial introduction.

11. Q: After 2 weeks there is still some Apiguard left in the tray or on the dosing card. What is happening and what should I do?

A: Sometimes as the gel dries, the bees lose interest in it. Empty and spread the remainder onto a flat surface (wax foundation, cardboard no larger than about 10 cm x 10 cm). If there is only a small amount of gel remaining, smear it over a small area on the top of the brood frames. This is active Apiguard and will be removed by the bees, which will further help in the control of mites. Do not sprinkle or spread dry thymol crystals thinly over a wide area; this will make the thymol sublime very quickly and may disturb the bees.

12. Q: The first dose has been on for 2 weeks, now the second dose should be put on for 2 to 4 weeks. What if I have a honeyflow in this time?

A: If you expect a honeyflow, do not treat. If it is essential to treat before, say, visiting the heather, apply one dose of Apiguard and remove any residual material before the moving the bees. The second dose should be applied immediately after the honeyflow. This regime may possibly not be as effective as two successive applications of Apiguard.



13. Q: Why is the mite drop in the first few days after applying Apiguard much lower than when using Apistan?

Apistan (and other pyrethroid-based treatments) are fast-acting and the active ingredient is quickly spread throughout the hive by contact with the bees, causing a very rapid initial mite fall that is noticeable within the first 24 hours. Apiguard works more slowly as the bees take time to spread the gel and its vapours throughout the hive, so the immediate mite drop may not always be so high as with synthetic pyrethroid treatments, but the effects of Apiguard build up throughout the course of the treatment.

14. Q: It's very hot where my hives are but the colonies need treating; is it safe to use Apiguard in these conditions?

A: At temperatures above 25°C (77°F) it is possible to use a half-dose of Apiguard and get a very good mite kill. Use 2 doses of 25g Apiguard, one week apart instead of 2 x 50g at two weeks apart. A third 25g dose is sometimes used after the second week where mite infestations are high. In some countries Apiguard is now available in 25g sachets.

When it is very hot, the thymol sublimes faster from the gel and the bees are more active moving the Apiguard around. Both these factors increase the effectiveness of the treatment and less product is needed. Make sure the hive entrance is not restricted, allowing thymol vapour to escape.

15. Q: The bees are forming a beard at the entrance to the colony; does this mean the Apiguard is harming them?

A: Bees often form a beard when it's just too hot inside the hive. However, they do this sometimes in hot conditions when Apiguard is first introduced to the hive as they are not used to the vapour that can build up quickly in hot conditions. This behaviour is usually temporary and the bees will go back into the hive. It is extremely rare for the bees to abscond.

16. Q: I want to treat nucs with Apiguard. What dose should I use?

A: To treat nuclei or small/weak colonies treat with only 1 x 25g Apiguard – no more than this. For small nuclei reduce this to half again (1 x 12.5g approx). Small (e.g. less than 5 frames) or weak colonies may not tolerate a 50g Apiguard dose and brood may be removed by the workers. If brood removal is seen, remove the product from the colony.

17. Q: I used Apiguard in the spring and my colony seems very small, why?

A: It could be that the queen stopped egg laying for a short while. This doesn't often happen but, if it does, it is a temporary effect only. She will resume egg-laying when the thymol odour is dissipating, after around 3 weeks, with no damage to the colony or to the queen.

18. Q: What mite control level will I get by treating with Apiguard?

A: Apiguard often gives results as good as those obtained previously with Apistan or Bayvarol but a lower efficacy should be generally expected, somewhere between 85-95% varroa control. The average we have recorded after thousands of hive treatments is 93%. Apiguard works better the warmer it is, up to 40°C (104°F).

19. Q: Why should I use Apiguard if it doesn't work quite as well as Apistan or Bayvarol?

A: Strains of Varroa mite resistant to pyrethroids (active ingredients of Apistan and Bayvarol) exist in many areas. Apistan and Bayvarol may not be effective in those areas so another type of treatment



needs to be used. Apiguard works in a different way to pyrethroids and will kill pyrethroid-resistant mites. Where resistant mites are not already established it is a good idea to “rotate” treatments between pyrethroids and Apiguard. Apiguard is an effective alternative treatment, authorised as a veterinary medicine for use on honeybees in many countries.

20. Q: Can I use Apiguard and Apistan at the same time?

A: Yes, you could but it would usually be a waste of money and would have no real advantage. Use one or the other but not both at the same time.

21. Q: Are varroa mites resistant to thymol?

A: At the moment, no. Pyrethroids and other “traditional” pesticides kill their targets by acting on specific nervous channels in the mite or insect and it is relatively simple for the mite or insect to change its physiology slightly (over a number of years) so that it is no longer affected by the nerve agent. Thymol acts in a very different way. As a protein denaturant it disrupts cell membranes and affects all cellular processes. It is a very general mode of action rather than being highly specific. It should be more difficult for the varroa mite to change all of its body functions to become resistant to thymol. Vita is monitoring mite populations in Europe and we have found no thymol resistance yet. Although it is not impossible it is less likely that thymol-resistant varroa will arise in the near future.

22. Q: Can I use Apiguard with open mesh floors?

A: Thymol vapours are heavier than air and with an open floor it would be expected that much of the value of the treatment may be lost. However, there is no clear evidence if this in fact happens. We advise to close up open mesh floors or to insert the varroa collecting tray during the Apiguard treatment and open them again afterwards, but this is a matter of choice. Do not close up hive entrances during treatment.

23. Q: Why is Apiguard a gel? Can't I just use thymol?

A: Thymol is an effective pesticide but when applied as raw crystals or in dry formulations it can be difficult and hazardous to use and the mite control levels will be variable. In cold conditions, the thymol crystals do not sublime quickly enough and mites are not controlled but in hot conditions thymol crystals will sublime too quickly, shocking the bees into absconding and often killing bee brood. This is why Apiguard was developed in a gel, to give a slow-release system for the thymol, allowing bees to acclimatise to a low thymol concentration before gradually building up to a mite-lethal level. When used as directed, the Apiguard gel is safe for honeybees and brood.

24. Q: How do I store the Apiguard?

A: Apiguard should be kept out of direct sun and heat and ideally stored at temperatures lower than 30°C (86°F). The gel will start to separate into solid and liquid phases at around 38°C (100.4°F) and even with stirring the gel may not regain its original quality once this has happened. The results obtained with separated gel cannot be guaranteed.

Therefore, do not keep Apiguard in the back of a beekeeping car or truck in hot conditions for any longer than is necessary. Keep the product below 30°C (86°F) in transport where possible and in storage.

25. Q: Where can I find out more information?

A: For any more information about Apiguard, please see www.vita-europe.com. You can also get in touch with your local distributor – their contact details are listed on the website.