

"THYMOVAR" for Varroa control

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For several years, volatile oils have been used for alternative control of Varroa mites (Varroa jacobsoni). Since 1996, Api-Life-Var, the first registered compound based on volatile oils (thymol, eucalyptol, camphor, menthol) has been available on the Swiss market.

Application of crystalline thymol alone is also very effective against Varroa mites. The danger with such methods lies in the accumulation of thymol in wax and honey, because detailed instructions are often not provided.

A sensible thymol-based medicament should be able to be used immediately after the last honey crop of the year, should be limited as to duration and should still have the necessary efficacy.

THYMOVAR

Based on these considerations, Andermatt Biocontrol AG has developed Thymovar. Thymovar consists of a sponge cloth (5 x 14.5 cm) which functions as a vehicle for the drug thymol (15.0 g). This medicament has been registered in Switzerland in July 1998.

Simple application

For a Varroa treatment, a Thymovar wafer is placed directly on the brood combs, after feeding when the forest honey crop has been taken off (about mid-August). After 4 weeks this wafer is replaced with a fresh one, which is also removed after 4 weeks.

Because the vehicle consists of firm sponge cloth, the wafer is not taken down by the bees, therefore there is no need for using bee excluder grids for the protection of the Thymovar wafers during treatment.



PRACTICAL TRIALS WITH THYMOVAR

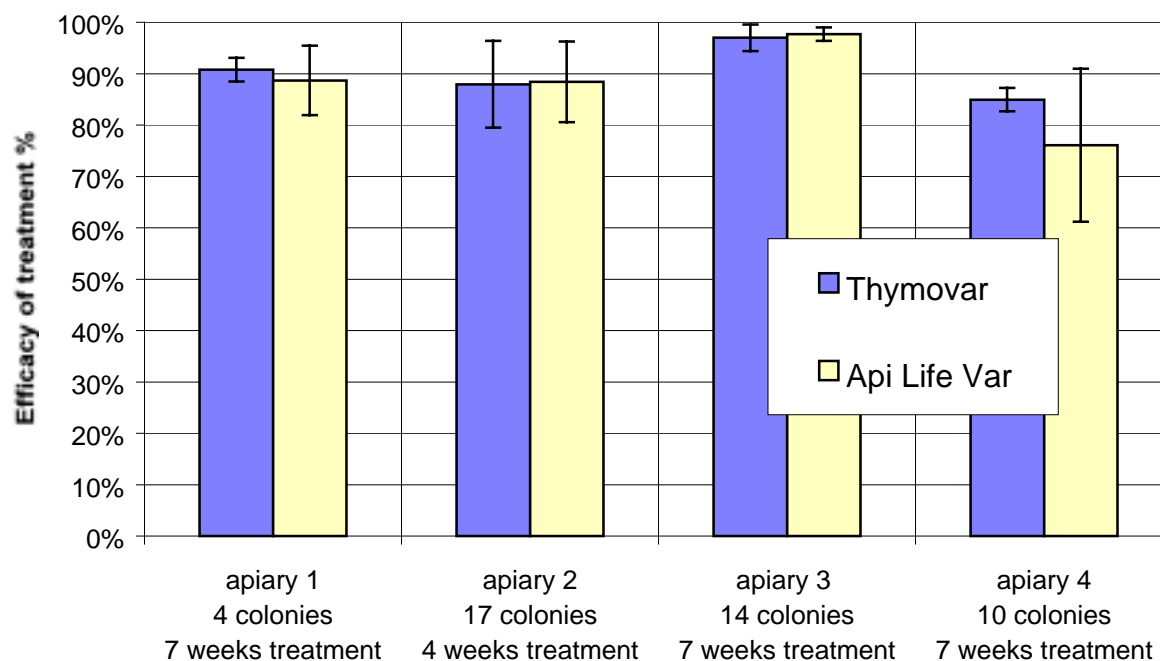
The first trials on the effectiveness of Thymovar wafers took place in 4 apiaries with 4 to 17 colonies in Swiss hives, from the end of August to mid-November. One half of the colonies in each apiary were treated with Api-Life-Var, the others with Thymovar. Thereby treatment success obtained with Thymovar could be directly compared with that of the proven Api-Life-Var (Imdorf et al. 1995).

The residual mite population which survived Thymovar, or Api-Life-Var, respectively, was estimated in broodless colonies in November, using a control spray method with oxalic acid. For evaluating the trial, the mite fall was counted weekly throughout the duration of the study, by means of grid-protected plates.

Natural mite fall during the week before a treatment was high in most of the colonies in the 4 apiaries and was not different between the 2 colony groups (Api-Life-Var and Thymovar) in different apiaries. Thereby uniform conditions for the trial were guaranteed.

Efficacy

The effect of Thymovar was absolutely comparable with that of Api-Life-Var. With an average effectiveness of 85% to 97% in the various apiaries, Varroa mites can be successfully controlled with Thymovar. Under optimal conditions, in some cases a treatment success of 99% can be expected. On the whole there was considerable scatter among the results. In apiary 2 the wafers (Api-Life-Var and Thymovar) were only left for 2 weeks each in the colonies, which reduced the effectiveness (66 to 95%).



As the experiments showed, a sufficient treatment success cannot always be expected. This results in the necessity of combining Thymovar with an oxalic acid drip or spray method in broodless colonies in November. This combination method saves the beekeeper success controls in the form of mite fall counts, which were essential with alternative control methods.

This combined method is also recommended by the Swiss Bee Research Center, Liebefeld, Switzerland.

Residues

Residues of thymol in honey and wax can be expected to the same small extent as with the Api-Life-Var treatment. Although residues of thymol can be found in wax shortly after treatment, these concentrations will decrease due to the volatility of thymol. There is no thymol enrichment in the comb.

In spring honey, average thymol concentrations of 0.19 mg/kg and in forest honey of 0.02 mg/kg are to be expected after treatment. These thymol residues influence neither taste (sensory threshold: 1.1 mg thymol/kg honey), nor are they dangerous to the consumer (tolerance value in honey in Switzerland: 0.8 mg thymol/kg).

Practical conclusions

- Varroa can be controlled efficiently and cost-effectively with a registered drug based exclusively on thymol.
- The application is successful in all hive types when used in combination with oxalic acid treatment (spray or drip) in broodless colonies in November.
- The application of Thymovar is very simple.
- The development of smells is kept within limits since only thymol is present in the product.
- The substance thymol does not accumulate in the comb, residues in honey are toxicologically safe.

After Bollhalder F. (1999) Thymovar for varroa control. Bee Biz (No 9) 10-11.

Literature

Imdorf A., Bogdanov S., Kilchenmann V., Maquelin C. (1995) Apilife VAR: A new varroacide with thymol as the main ingredient. Bee World 76 (2) 77-83.