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**THE EFFECT OF ALTERNATIVE ACARICIDES ON HONEY QUALITY IN ORGANIC BEEKEEPING**

*H. Garção, R. Alvares, L. Barros and M. Vilas-Boas*

Centro de Investigação de Montanha, Escola Superior Agrária de Bragança,  
Campus de Santa Apolónia, 5300-955 Bragança, Portugal  
E-mail: mvboas@ipb.pt

The use of acaricides in organic beekeeping is legally restricted to essential oils and some organic acids, since no synthetic compound can be added to the honey matrix. Thymol, formic and oxalic acid are the main alternatives to control varroa mite, used all over the world with good results. Although these chemicals are already present in honey and should not cause any contamination problem, their continuous use in beekeeping necessarily has some effect in the quality of honey. In this work we followed honey residues of thymol applied, at organic honey production mode apiaries with two different methodologies.

Thymol was applied in paper strips after diluted in olive oil. In each treatment 16 grams of thymol were introduced into a group of eight Langstroth hives. This procedure was repeated during spring (March/April) and autumn (October/November) over three years in four apiaries. Alternatively, thymol was added in impregnated wax foundation with either 9 or 18 grams of thymol per frame. One treatment corresponds to the use of either two frames of beeswax foundations with 9 g/frame or one frame with 18 g/frame. Each one of these latter methods was applied in two groups of seven hives. Honey samples were collected during harvest (September) from all hives, as well as from hives with any varroa treatment. Thymol levels in honey were measured by gas-chromatography with FID detector, after SPE extraction.

From the analytical results we concluded that honey have already a natural content in thymol that seems to increase when thymol is used as acaricide. Although, the levels found do not reach the value of 0,8 mg/kg, (MRL in Switzerland), above it affects the honey taste. Comparatively, the use of impregnated beeswax foundations seems to contribute more significantly to the thymol residues, specially if treated with 18 g/frame.

**TOPSY-TURVY BROOD COMBS – IMPACT ON POPULATION DYNAMICS OF HONEY BEES (APIS MELLIFERA L.) AND VARROA DESTRUCTOR**

*P. Aumeier<sup>1</sup>, W.H. Kirchner<sup>1</sup>, G. Liebig<sup>2</sup>*

<sup>1</sup> Ruhr-University of Bochum, Faculty of Biology, Germany

<sup>2</sup> University of Hohenheim, Bee research institute, Germany  
E-mail: Pia.Aumeier@rub.de

Since 2003 the Kónya rotating-broodframe beehive ([www.anivet.hu](http://www.anivet.hu)) is advertised as a method of augmenting the honey yield, preventing bee colonies from swarming and of Varroa destructor control.

In a triennial study we investigated the effect of unnatural movements of brood combs by 1) weekly rotating all brood combs of 6 colonies during the swarm season, 2) daily manipulating brood combs out of 8 colonies on three different ways: control = comb never touched, rotated = comb rotated 180°dm; vertically, shaken = comb hit on the ground three times with 40-50g, 3) using the replica of a rotating-broodframe beehive for one season.