

# Varroosis control with 60% formic acid after honey harvest

## Comparing the long-term impact of three popular treatment methods

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### Introduction

Since 2013 only formic acid of 60% concentration is approved. Against this background this experiment examines if **application method** and **micro-climate factors (temperature, sunlight, wind)** play a **key role** controlling varroosis. As a consequence we hypothesize that certain combinations of these factors promote the survival of honeybee colonies

### Methodology

#### August 2015:

- Arrangement of 30 bee colonies in three groups (**shady, corner, sunny**) (fig.1)
- Estimations of the populations
- Estimation of mite-infestation



Fig. 1: arrangement of colony-groups around a field barn

- Varroa-treatment using 60% formic acid in:
  - 10x Mite-away-Quick-Strips (MAQS),
  - 10x Liebig-Dispenser (LD-60%),
  - 10 x Nassenheider professional (Nassprof)

#### October 2015 and March 2016:

- Post-treatment estimations of the populations

### Results

- High treatment-success when using Nassenheider professional (fig.2)
- No significant relation between the treatment-method and the absolute bee numbers (fig.3)
- Differences in colony-development depending on arrangement reveals clusters of shady and sunny micro-climate (not significant) (fig.4)

### Conclusion

Further investigations needed to control the micro-climate impact for a success of hibernation

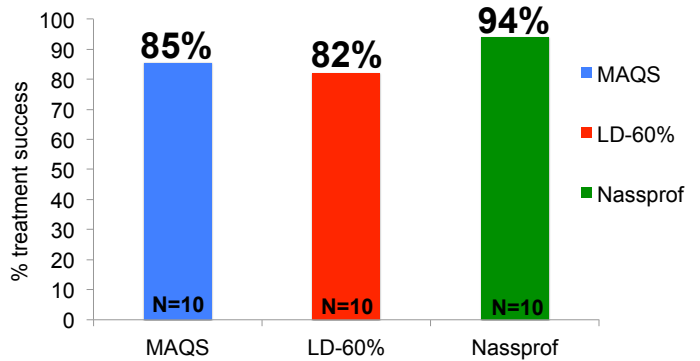


Fig.2: Treatment success on mite-reduction

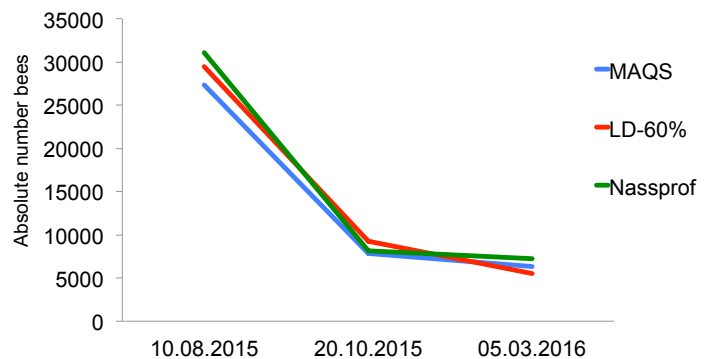


Fig.3: Development of the averaged absolute bee-numbers of the three treatment groups

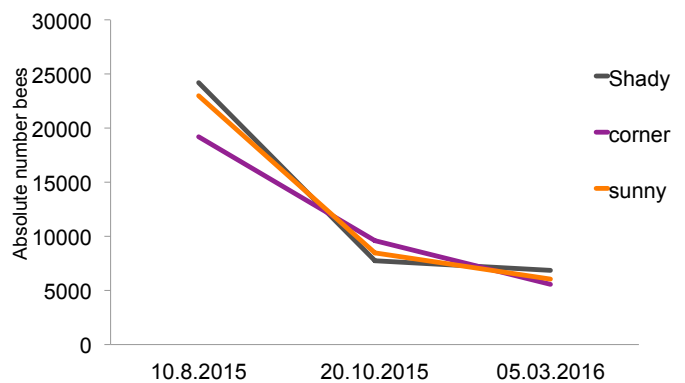


Fig.4: Development of the averaged absolute bee-numbers of the micro-climate groups (for number of replicates per group see fig.1)

