

A New Method to control Nosema Disease by Feeding

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INTRODUCTION

Nosema infection is considered a very important disease of adult honeybees because it can significantly reduce yields of honey and pollen, compromising honeybees lifetime. The most common method of nosema disease controlling is the application of the antibiotic fumagillin and it is no longer practised for the associated risk of honey contamination. In this study we compare the effect in spore reduction of Api Herb, a vegetable made honeybee feed, and of fumagillin.

MATERIALS AND METHODS

Thirty honeybees colonies infected by *Nosema* sp. were located in the same apiary and divided into three groups, A, B and C, treated with different compounds. In detail, group A colonies were treated with a weekly administration of Api Herb (Chemicals Laif, Padua, Italy) with sugar syrup for 3 weeks, group B colonies with fumagillin in sugar syrup and the last 10 families (group C) were used as control group and treated only with sugar.

Before the first administration and a week after the last treatment, twenty-five adult bees were collected, sacrificed and the abdomens were used to control the infection level, by counting spores number. Statistical analysis were carried out by ANOVA.

RESULTS AND DISCUSSION

Pre-treatment infections were very hard in all colonies (see Fig.1).

The average number of spores per bee decreased during the 3 weeks of treatment in all groups.

Significant results ($P = 0,3$) in spores reduction were observed for all of the tested groups but the strongest decrease was detected for group A.

The detailed values are listed below:

GROUP "A" (treated with Api Herb): 71,7% spores reduction

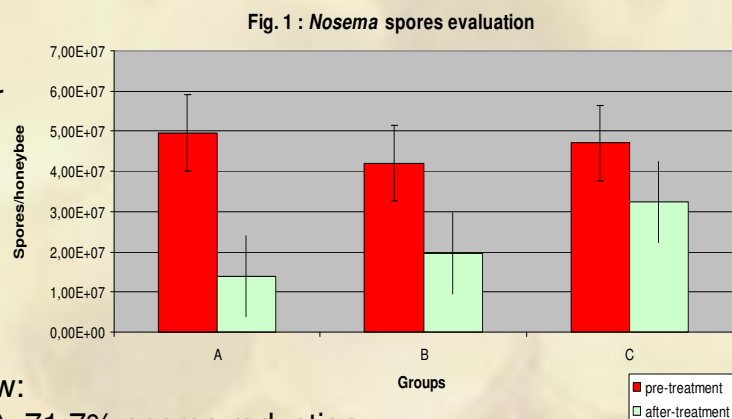
GROUP "B" (treated with fumagillin): 53,6% spores reduction

GROUP "C" (control): 30,8% spores reduction.

No harmful effects were registered for combs, adult honeybees and for the beekeepers.

CONCLUSION

Three weekly administrations of Api Herb yielded a noticeable decrease in the number of spores infecting the honey bee intestines, without negative effects for adults and comb health. This product, if correctly used, could play an important role in prevention and reduction of nosema disease without risks of honey and wax pollution with antibiotics.



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