THE EFFECT OF SUBSTITUTE OF POLLEN ON BEES RESISTANCE TO WINTERING

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INTRODUCTION

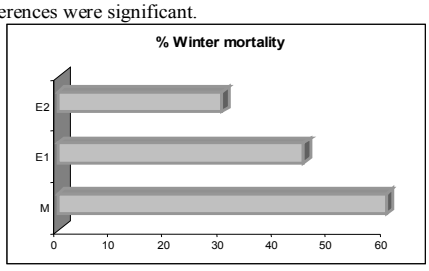
- Because high protein requirements of bee families, especially early spring and late summer, the deficit of pollen in this period may be offset by using pollen substitutes.
- The research pursued to use a pollen substitute and the effects on resistance to wintering and biological development of the bees family.

MATERIAL AND METHODS

- The biological material: 12 families from *Apis mellifera carpatica Foti*
- The bees were kept in multi-tier beehives.
- The indicators have been pursued:
- Experimental scheme:
  - control group (M) - no feeding supplement;
  - group 1 (E 1) received substitute of pollen as a syrup during autumn;
  - group 2 (E2) received with substitute of pollen as a syrup during autumn and as cakes during winter.
- The substitute of pollen was made of soybean meal, dry yeast and milk powder. The crude protein content was 21.26%.
- The resistance to wintering was evaluated according to several apicultural parameters: manner of wintering, family's status (view in the spring), and quality of the queen.
- The manner of wintering was appreciated after the amount of death bees, moisture, mold and diarrhea.
- The family's status was established by the existence of the queen and food reserves. The existence of the queen was established indirectly through the presence of eggs and juveniles.
- The queen quality was evaluated by the number of honeycombs with juveniles, by expanding it's on the frames and after his uniform.

RESULTS AND DISCUSSION

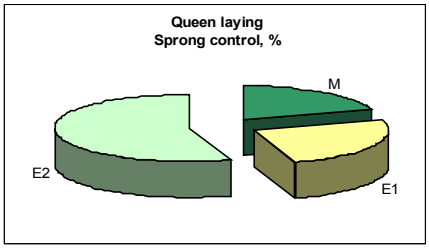
- The use of the substitute of pollen in autumn increased egg laying during this period increasing thus the size of the population over the winter.
- Compared with the control group, **mortality** during winter was less than 20% in group E1 and 25% in group E 2, the differences were significant.



- Concerning **the family's status**, at the control group, the family had sufficient stocks of food, but bees for the most part were old, because the queen has not submitted a sufficient number of eggs in autumn. In group El, the family was strong, had a large number of young bees, but the food was not properly distributed, for which bees were forced to change squat position.

In group E2, the family was strong, had a large number of young bees had sufficient stocks.

- Concerning **the queen quality**, at the group E2 there were eggs and cells with juveniles. This demonstrates that administration of pollen substitute in the form of cakes, through the winter, significantly influenced the resumption laying early spring.



CONCLUSIONS

1. Using the substitute of pollen increased considerably the queen laying during the autumn, providing for wintering a numerous population bees.
2. The supplemental cakes with substitute of pollen given over winter stimulated bees resistance to wintering, bee mortality being significantly lower.
3. In the spring control, the queen prolificacy was higher by 25% in group G1 and 175% in group G2, compared with controls.
4. Cake administration established a very good development of bee families, being able to better capitalize the early and basic harvest

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