THE USE OF POLYDISPERSE CHITOSAN AS A STIMULATING FOOD ADDITIVE FOR BEES

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Chitosan is a polysaccharide obtained by the deacetylation reaction of chitin and consists of D-glucosamine and N-acetyl-D-glucosamine, joined by β- (1 → 4) glycosidic bonds. Chitosan has a wide range of practical uses. The benefits provided by chitosan are due to its low toxicity in relation to living organisms, the availability of raw materials, and the presence of biological activity [1,2].

The research aim was to determine the influence of the use of chitosan in stimulant food on immunity and winter resistance, early development, and productivity of bee colonies. The investigations were carried out on the families of Carpathian bees from the apiary in the village of Seliște, Nisporeni district, which were maintained in two-body beehives with 10 combs each with the dimensions of the frames of 435x300 cm. Polydisperse chitosan was obtained by depolymerization of commercially available natural chitosan, and represented as an aqueous solution with a mass fraction of 3% of the substance.

It was revealed that the optimal dose of using polydisperse chitosan in bee feed is 2.0 ml of 3%/L sugar syrup solution. The use of such formulation in the stimulating nutrition in the autumn period when replenishing stocks, provides an increase in immunity and resistance to wintering by 15.09%, in the spring, in the absence of maintaining the honey collection, the strength of bee colonies by 59, 2% and honey productivity by 97.8% more compared to the control batch or by 12.1% and 19.2%, respectively, compared to the standard batch.

Keywords: bee families, chitosan, stimulatory feed, sugar syrup.

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