**Introducing new honey bee queens to colonies in the presence of the old queens**

**Summary**

The aim of the study was to attempt to find a method of introducing queen bees that would reduce the time necessary for this procedure. In the proposed method, to avoid interruptions in egg laying, the old queen bee is not removed from the colony. Moreover, in this method queen bees can be inseminated without mating boxes. The experiment involved insemination of line 47 (Sklenar) Carniolan honey bee queens (Apis mellifera carnica) in their original colony, in the presence of the old queen bee. This was done by introducing queen cells 1-2 days before hatching. The experiment was carried out at a bee farm (Gospodarstwo Pasieczne Halina Buchalik) during the breeding season in the years 2013, 2014 and 2015. Four groups were formed – three experimental (I-III) and a control (IV). In each group, sealed queen cells were introduced 1-2 days before hatching. The best results were obtained in group III, in which queen cells were placed on the fifth level above the nest 1-2 days before hatching. In this group, 78.33% of queens from 60 queen cells were accepted and began laying eggs. In group I, the old queen bee was separated on the second level above the nest where the queen cells were placed. Here, 31.66% of queen bees from 60 queen cells began laying eggs. In group II, in which queen cells were placed in a brood box next to an isolator containing the queen bee, 23.33% of queens from 60 queen cells began laying eggs. In the control group, in which queen bees were replaced by the traditional method, 93.33% of queens from 60 queen cells began laying eggs.

**KEY WORDS: replacement of queen bees, queen bee, queen cell, supersedure, honey bee colony**