

Removal of beeswax contaminants

The CSIC, through the INIA-CSIC in collaboration with the University of Alcalá, University of Almería and University of Córdoba has developed a procedure to eliminate residues from veterinary treatments, in addition to other phytosanitary products present in beeswax.

We are looking for companies in the Apiculture sector interested in the development of this technology.

An offer for Patent Licensing

No darkening or loss of wax components

Currently varroosis, external acariosis caused by the Varroa mite, is the disease of worldwide distribution that causes the most damage to beekeeping, affecting both breeding and adult bees. Most of the synthetic acaricides applied in the treatment are lipophilic, thus they accumulate in the wax and can resist the melting temperature of the wax; some of them do not degrade and tend to accumulate for years, due to the practice of recycling the wax. All this makes it necessary to develop a procedure to eliminate the entire set of residues from veterinary treatments, in addition to other phytosanitary products present in beeswax. And, in addition, avoiding darkening and loss of wax components after the removal of contaminants.

This procedure includes the stages of melting the contaminated beeswax and then adding methanol in order to extract the contaminant, under temperature conditions of between 64 °C and 66 °C and at pressure of between 0.9 atm and 1.1 atm. Then the decontaminated wax obtained after the methanol stage is separated and finally the methanol retained in the decontaminated wax is removed.



It is highly necessary a procedure to eliminate the residues from veterinary treatments and other phytosanitary products present in beeswax

Main innovations and advantages

- Previous removal processes are based on the treatment of molten beeswax with diatomaceous earth and activated carbon, or by applying activated carbon and activated clays at temperatures of 90°. The latter is only effective for the specific treatment of chlorfenvinphos and cumafós but is not effective against other residues such as tau-fluvalinate, (elimination of around 30%). In addition, darkening and loss of wax components limit its application.
- It was found that the bees accepted the decontaminated wax and in the honeycombs they successfully bred and accumulated food reserves, as it usually happens with the uncontaminated wax.
- Due to the conditions used, this procedure prevents darkening and loss of wax components after removal of contaminants.

Estado de la patente

Spanish patent application filed

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