

BEE HEALTH: UNDERSTANDING THE LIFE CYCLE OF THE VARROA MITE

# Enemy number one in the beehive

Deaf and blind, the Varroa mite smells and feels its way through the beehive. Its goal is the brood cells, where it can reproduce and infect the next generation of bees with diseases, thus weakening the entire colony. Beekeepers have very few options for keeping this parasite under control. Bayer experts are therefore not only working on new control mechanisms for the mite but are also investigating how existing substances can be used with maximum efficiency, leaving the bees and the brood unharmed.

**2** Worker bees often carry Varroa mites with them into the hive. Despite being deaf and blind, these mites can find their ways to the brood chambers thanks to their olfactory sense and numerous fine sensory hairs on the legs. Shortly before the workers cap the brood cells, the female mites slip unnoticed into the cells with the bee larvae.

**3** A few days later, the mites lay the first eggs. The first to hatch is always a male. It is followed by up to five more eggs from which female mites hatch.

**4** To feed its offspring, the mother mite pierces a feeding hole in the bee pupa which has developed in the meantime. Before the bee hatches, the mites mate again – during the bee season, the Varroa population in a hive can double every four weeks.

**1** The queen is the largest in the beehive. She lays up to 2,000 eggs per day in the brood cells.

**5** By the time the bee hatches, it is already severely diseased and weakened, because mites also transmit dangerous viruses such as Deformed Wing Virus, for which there is still no effective treatment available. As well as the bee brood, Varroa can also infest adult bees.



**Parasite in perspective**  
A mite on a bee is like a rabbit-sized parasite attacking a human.



Deadly danger: without human assistance, a colony of European honey bees infested by mites generally dies off within 3 years. Bayer researchers have therefore developed a plastic strip containing an acaricidal active substance, which is fitted over the entrance to the beehive and designed to prevent mite infestation. It is planned to bring the product to market in 2017 for use by beekeepers as part of their integrated Varroa management programs.



*“It is vital that we intensively investigate the behavior of the Varroa mite if we want to further optimize our treatment measures.”*

Dr. Christian Maus,  
Global Pollinator Safety Manager,  
Bayer Bee Care Center