

# How to ensure more earwigs in the orchard

June 20 2016

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Credit: Wageningen University

Why does one orchard have many earwigs while another has only few? And if only a few are present, how can one ensure more are in place? This is the subject of a new research project by the Dutch fruit growers association (NFO) and Wageningen UR. "Apple and pear farmers obviously want lots of earwigs in their orchards," says Herman Helsen, entomologist and leader of the project. "They are extremely useful against problems such as the woolly apple aphid and pear psylla."

## **Insect with parental care**

The earwig is one of the few [insects](#) that actually provide [parental care](#). In autumn the adult insects go into the soil to overwinter. In the early spring they build an underground nest where the female protects and cares for the eggs. Once the young have reached the third 'nymph stage', they head into the plants, where they feed on insects, fungi or algae.

## **DNA analysis of stomach contents**

It is not known what the youngest earwigs eat in the nest, Helsen explains: "You can check the stomach contents under the microscope, but the results are minimal. At most we find a lice leg here and there. Only by performing DNA analyses on the stomach contents can we learn more, and find genetic material of springtails and mites, among others."

## **Improving conditions**

Wageningen UR and the NFO recently received a grant from the Top Sector Horticulture and Starting Materials for a new research project. The main question for Helsen and his colleague scientist Karin Winkler is: what is the difference between an orchard with few earwigs and one with many? "Could it be the availability of food in the soil for the young insects in the stage that they still live in the soil? And, if so, could one stimulate the number of earwigs by improving the conditions in the orchard? If this is the case, it could eventually lead to a reduction in the use of synthetic products against lice and other pests."

Provided by Wageningen University

Citation: How to ensure more earwigs in the orchard (2016, June 20) retrieved 27 June 2024 from <https://phys.org/news/2016-06-earwigs-orchard.html>

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