Bees are good informers

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Honeybees can do far more than simply pollinate plants or make honey. The busy creatures also make excellent environmental monitors. This has been demonstrated by Wageningen UR bee researcher Sjef van der Steen. He used swarms of bees to measure the concentration of metals in Maastricht, Buggenum and Hoek van Holland. It turned out that the bees made excellent informers.

Van der Steen's bees gave him information about no less than eighteen common metals. The method he used is simple. Bees act as a kind of Hoover when looking for pollen and nectar. In particular, the dust that sticks to bees turns out to be a source of metal particles. The researcher then carries out measurements of the bees, which give a sort of fingerprint of the environmental quality of the bees' habitat. Incidentally, this procedure means the end of the bee, which is dissolved in an acid bath. Spectral analysis of the solution provides information about the kind of metal and the quantities involved.

Van der Steen says the great thing about bees as bio-indicators is that they are a relatively simple measurement instrument. "Many parts of the world don't have access to complicated measurement systems but bees are everywhere. In principle you could use other insects, but the nice thing about bees is that they congregate at a central point. What is more, they cover quite a large area in looking for food, about seven square kilometers." However, bees don't reveal everything. The measurements say nothing about the source of any pollution. Van der Steen: "At present they are purely informers. The monitor gives a global indication of what metals are present in a certain environment without telling you exactly

where they are or where they come from."

Provided by Wageningen University