

## **MONITORING MITE DIVERSITY IN EUROPEAN SOILS USING HIGH THROUGHPUT E-DNA BARCODING TOOLS**

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Within the EU FP7-project EcoFINDERS, various European partners collaborate to gain more insights in links between soil diversity and ecosystem services, across different soils, climate types and land uses. To allow rapid screening of many soils throughout Europe, new tools are being developed for high-throughput species identification based on the DNA contained in soil extracts. Alterra participates by developing and applying a new approach for the DNA barcoding of soil mites. For this purpose, soil samples were collected from agricultural soils and (semi-)natural grasslands around Europe, and mites were extracted from them. A reference data base was created containing CO1 sequences of as many of the local species as possible. Species discrimination reached 89%. Additional samples, to be used for diversity screening, were split in two. DNA was extracted from one part, the other part was subjected to morphological identification. A mini-barcode located within the CO1-fragment was developed for 454 pyrosequencing of the DNA extracts. First pyrosequencing results are expected near the end of 2012. Species composition as obtained via molecular and morphological identification will then be compared to test the performance of the new method.