Reporting back from Rothamsted soil biodiversity meeting

Rothamsted Research held a fascinating final meeting on soil biodiversity, concluding its series of events for the public to mark the International Year of Soils. The meeting included the following talks by leading experts on the latest research:

- ‘The incredible diversity of life in soil’ by Prof. Richard Bardgett of the University of Manchester, author of the award-winning book *The Biology of Soil*
- ‘Microbial diversity in agricultural soils – does it matter?’ by Prof. Penny Hirsch of Rothamsted Research.

Biodiversity is critical for our planet. Prof. Bardgett’s talk described the extraordinary variety of life in our soils which may contain many millions of individuals in a single gram. As well as vertebrates, worms, nematodes and mites, typical inhabitants of a healthy soil include:

- Up to 100 species of insects
- Hundreds of species of fungi
- Thousands of species of bacteria

These organisms are the ‘engineers’ of soil, playing an essential role in the decomposition of organic matter, soil structure, nutrient cycling and retention which are critical to plant growth and health, water and atmospheric quality. We are only just getting to know about what many of these organisms do and what affects their distribution.

There has long been concern about the impact of intensive agriculture on soil ecosystems in areas such as:

- Tillage (impact on soil structure)
- Type of crops planted and husbandry (e.g. rotation)
- Application of fertilisers and pesticides

With Rothamsted’s pioneering research going back 150 years, Prof. Hirsch and her colleagues are in a unique position to assess the impact of different types of cultivation and what can be done in the future to protect soil biodiversity for the benefit of us all.

A version of this report with supporting references can be found [here](http://www.ecpa.eu).

References and further reading

Anon., *Soil Biodiversity and Agriculture*, October 2010, European Crop Protection Association ([www.ecpa.eu](http://www.ecpa.eu))


Ramirez, K. et al., ‘Biogeographic patterns in belowground diversity in New York’s Central Park are similar to those observed globally’, *Proceedings of the Royal Society B*, 2014.


