

SoildiverAgro project

Adoption of new management practices to increase crop production and quality



THE WHAT AND WHY

Earthworms of wheat fields in different farming systems

Of the arable soil organisms, earthworms are known to all and their abundance is often considered as an indicator of good soil quality. When feeding on plant residues, earthworms mix organic matter into the soil and produce nutrient-rich casts that improve the crumb structure of the soil. The burrows dug by earthworms improve the porosity of the soil. Earthworms are known to increase yields, especially when organic fertilizers are used, their processing of manures accelerating the release of nutrients for plant use. SoildiverAgro -project carried out a survey of soil biota in European wheat fields. Also the abundance of earthworms was studied in 188 research fields in nine climatic zones. Five localities from Finland were included. From each of them two wheat farms were selected, one representing “organic” and the other “conventional” farming. Two fields were

surveyed from all farms. Based on preliminary results, there were no consistent differences in the abundance of earthworms between farming systems. Although “organic” farming has favorable features for earthworms, different factors may even out differences in comparison to “conventional” farming. For example, plowing which is harmful to many earthworm species, may be more common in “organic” farming. On the other hand, organic fertilizers that are beneficial to earthworms, as well as grass rotations, are often used also in “conventional” cultivation. The abundance of earthworms in Finnish fields was the highest in the entire study. There farmers’ chances to benefit from the work of earthworms seem especially good, regardless of the farming system.



1. Several images of earthworms.

KEYWORDS

Earthworms, wheat field, boreal region, farming system, organic farming, conventional farming

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