

Reduced tillage

Goal

Increase the health of the soil

Short description of the measure

There are many ways to reduce tillage, from changing moldboard plows and spaders to disc-harrows and chisel plows, which cause fewer problems, to implementing strip-till or any other technique to reduce the impact of tillage practices on the soil structure and the soil biomass.

If this technique is used in combination with a diverse crop rotation, including cover crops or organic mulches, it helps to increase the soil organic matter (SOM) and the soil biology.



Pic. 1: Tractor with chisel plows, a good way to implement a reduced tillage with depth of around 15 cm

Pic. 2: Moldboard plows are tools used to achieve a more in-depth tillage (bad measure for soil conservation).

Quality elements of soundly implemented biodiversity measures

- Tillage depth: no more than 30 cm.
- Number or herbicides treatments.

Effects on biodiversity

(ecosystems, species, soil biodiversity)

Reduced tillage avoids soil erosion. This is crucial for the improvement of water quality since the sediments and the diffusion of phytochemicals are reduced. Good quality of water improves a higher diversity of species and number of individuals.



The emission of greenhouse gases decreases because the amount of organic matter available for microorganisms is reduced since reduced tillage avoids a great alteration of the soil.

In this way soil fertility is recovered and carbon sequestration is enhanced. Soil biology is disturbed less and the populations of soil organisms increase



The reduced tillage also has positive impacts on biodiversity, as it increases the number of species present and the number of individuals, both in terms of microorganisms and fauna thanks to the fact that in this type of tillage crop residues are maintained, giving shelter and food for wildlife

Other positive effects/benefit for the farmer	<ul style="list-style-type: none"> ▪ Reduced soil erosion due to wind and water. ▪ Improved soil structure and better water take up and retention. ▪ Reduces labor, saves time and fuel. ▪ Increases soil organic matter. ▪ Improves air quality: reduces fossil fuel emissions from tractors by making fewer trips across the field and reduces the release of carbon dioxide into the atmosphere by tying up more carbon in organic matter.
Indicator/key data	<ul style="list-style-type: none"> ▪ % of UUA with reduced tillage.
Reference	<ul style="list-style-type: none"> ▪ nevegetable.org/cultural-practices/reduced-tillage ▪ Laboreo de conservación: Efectos a Corto y Largo Plazo en la Calidad del suelo y el desarrollo de los cultivos. R. López Garrido. Sevilla (2010) ▪ www.agricology.co.uk/resources/practical-recommendations-reduced-tillage-systems

Further information: [Knowledge Pool](#)

This Action Fact Sheet belongs to the training package for managers of standard organisations and companies and was developed within the project LIFE Food & Biodiversity (Biodiversity in Standards and Labels of for the Food Industry). The main objective of the project is to improve the biodiversity performance of standards and sourcing requirements in the food industry by helping standard organisations to integrate efficient biodiversity criteria into their schemes and motivating food processing companies and retailers to include comprehensive biodiversity criteria into their sourcing guidelines.

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