

Practice SQ n° 11

REDUCING SOIL TILLAGE / SIMPLIFIED CULTIVATION TECHNIQUES

Introduction

Category: Good Practice (GP)

Practice identity card

#Reduced tillage, biological activity

#SQ, food, feed, fibre, oil, industrial, Good Practice (GP), France

Short description

→ Simplified cultivation techniques are practices to reduce soil tillage, without use of ploughing. Their use allows to prevent from erosion and to improve soil biological activity, particularly earthworm presence. Simplified cultivation techniques gather deep ploughing (or ploughing without turnaround), crop itinerary with non-plough tillage but loosening, strip till, superficial tillage and direct sowing.



Implementation process

Which practice is considered as the standard in this region? Conventional ploughing.

What was the on-farm issue/challenge/opportunity that led to the implementation of the practice? This kind of practice can be need because of issues of soil fertility like packing or plough pan. In a situation of wet and hot climate, ploughing may occur erosion. An intensive soil work decreases the content of organic matter of the arable lay by accelerating its mineralisation. A decrease of soil tillage may also improve the sustainability of the soil helper macrofauna.

How long did it take to implement the practice and which are the measures needed to monitor: About 3-5 years are needed to get effects.

Logistics

- **Logistic aspects to consider:** Changing the tillage practices may need new farm equipment.
- **Skill/education level required:** rather high

Agronomical traits

- **Can the practice be applied to a multitude of cultivation techniques?** There are numerous practices that make up the framework of simplified cultivation techniques: for example, the decrease of ploughing use and the substitution of plow by another equipment like cultivator.
- **Targeted crop categories:** food, feed, fibre, oil, industrial
- **Soil types suitable for the practice:** silty, chalky, loamy, clay, sandy, peaty
- **Expected effect on crop yield:** similar
- **Expected effect on crop yield variation:** decrease
- **Expected effect on crop quality:** similar
- **Expected effect on crop quality variation:** similar
- **Which costs may increase due to the practice?** herbicides, equipment
- **Which costs may decrease due to the practice?** unskilled labour, fuel, equipment, energy
- **Expected long-term/indirect economic benefits of the practice:** Simplified cultivation techniques reduce labor and fuel costs through less frequent field visits. Thus, it is estimated that TCS can reduce fuel consumption by 20 to 40% compared to the conventional system. A french study in 2006 and 2007 in 11 regions proposes an evolution for the sowing costs from 167 €/ha in the situation of conventional ploughing to 84 -156 €/ha with simplified cultural techniques (<https://www.arvalis.fr/infos-techniques/les-economies-de-charges-la-cle>).
- **Expected effect on the leaching of nutrients:** decrease/decrease/none

Administrative context

- **Does the practice qualify for subsidies?** It depends on local policy
- **Are there any policy barriers complicating the practice's application?** No
- **Does the practice involve the use of hazardous substances?** No
- **Is the practice compliant with EU organic farming practices?** Partially
- **Is the practice supported by Eco-schemes?** Theoretically but not in practice
- **Are there any gaseous emissions to be considered upon application of the practice?** No
- **Greenhouse gas (GHG) reduction potential of the practice:** substantial
- **Expected effects from the practice on the time occupation of the farmer?** time-saving
- **May the practice contribute to a better public image of agriculture?** Yes
- **May the practice improve the farmer's self-image?** Yes

Contact

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Eu member state: France

Find out more

Source of information French COP workshop on September the 4th 2024 at Angers