SoilCare
SOILCARE FOR PROFITABLE AND SUSTAINABLE CROP PRODUCTION IN EUROPE

Study Site No 14
Crop Research Institute, Prague, the Czech Republic

FIELD TRIAL ON DIFFERENT SOIL TILLAGE - since 1995
(Crop rotation: pea - winter wheat - oilseed rape – winter wheat)

mouldboard ploughing
up to to 22 cm

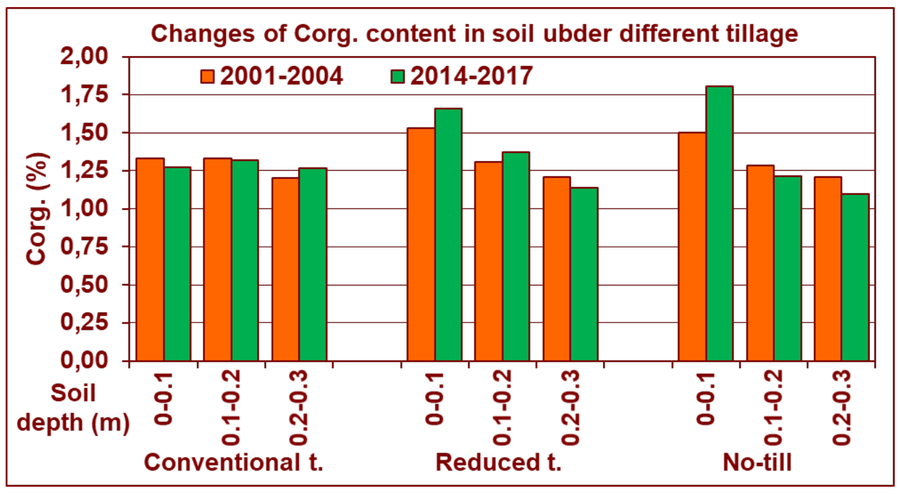
turning crop residues
into soil

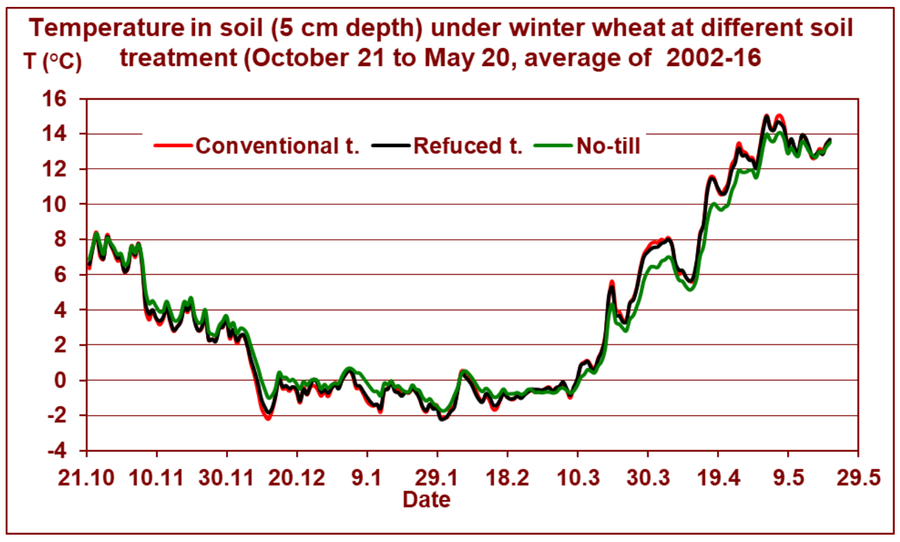
chisel ploughing
up to of 10 cm

min. 30% of crop
residues on surface

without any treatment

all residues on surface





50º 05´ N and 14º 17´ E

Experimental area is located on the border between two climatic regions: warm-dry (T1) and warm-slightly dry (T2).
The average annual temperature over the years 1955 to 2014 is 8.47º C, the average annual precipitation sum over the same period is 485 mm.

Stakeholders - general demurrer :
!!! Large administrative stress !!!
!!! and bureaucracy for farmers !!!

CONCLUSIONS

Impact of reduced and no-tillage on soil properties (physical, biological, chemical)

- Higher bulk density of soil.
- Slower warming the soil and nutrients release from the soil supply at the beginning of spring vegetation. Application of higher doses of nitrogen is suitable in the early spring.
- Larger quantities of crop residue on the surface and in the surface layer of soil = higher N immobilization from applied nitrogen fertilizer (particularly fertilizers with $NH4^+$ -N form.)
- Less water loss during tillage, reduced water evaporation from the soil, the higher and more stable soil moisture and better conditions for the use of nutrients from the soil and fertilizers at the lack of rainfall
- Higher nutrients concentration in topsoil decreasing with depth.
- The need for more operational and precise approach to plant nutrition and protection.

Dissemination in 2017

- Ruzyne´s day of plant nutrition and agro-technics (Workshop, February 16,154 participants)
- Field briefing (field trials demonstration, discussion; June 7, 84 participants)
- New technologies for stable yields of crops and protection of soil, water and air (Workshop, November 28, 78 participants)
- The application of new knowledge on cultivation technologies (Workshop, December 12, 115 participants)

Field briefing (field trials demonstration, discussion; June 7, 2017

Agricultural trade fair České Budějovice, August, 2017

The **SOILCARE** project is a 5 year project aimed at identifying and evaluating promising soil improving cropping systems and agronomic techniques increasing profitability and sustainability across scales in Europe.

The SOILCARE project consortium consist of 28 partner institutes from 10 European countries
The SOILCARE project is coordinated by ALTERRA, Wageningen UR, The Netherlands.

• Starting date: March 1st 2016. • Ending date: February 28th 2020. • EU contract number: 677407

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