

Name:

Soil cover rate.

Definition:

This indicator refers to the number of days per year on which the soil is covered. It is based on the "Soil Cover" indicator defined by OECD in 2001.

Method of calculation:

$$\text{Indicator} = \frac{1}{365 \times A_T} \sum_i [DC_i + (365 - DC_i) \times SCC] A_i$$

Where:

A_T : Total area considered (ha)

DC_i : Number of days on which the crop covers the soil

SCC : Soil cover coefficient after harvesting:

Direct seeding: $SCC=0.50$

Minimum tillage: $SCC=0.35$

Conventional tillage: $SCC=0$

A_i : Area for the crop i (ha)

Interpretation:

The cover reduces the risk of soil erosion. Therefore, the agricultural land with higher levels of this indicator, will be better protected against erosion, which means that it will have a greater environmental sustainability. This indicator shows that different management cropping systems, such as direct seeding or minimum tillage, help to protect soil against erosion effectively, even when vegetation is not active on the ground. Based on different specialists knowledge, weighting coefficients were assigned to the cropping systems.

Information source:

A_T : Total area considered (ha). It is the sum of the areas of the analysed plots.

DC : Number of days that the crop covers the soil. It has been calculated using the dates of sowing and the dates of harvesting obtained in a farmers survey. In case of having covered crop the days with said culture are added to those of the main crop.

CTE : Soil cover coefficient (Gómez-Limón et al, 2010)

A_i : Area assigned to the plot (ha).

Bibliography and references:

OECD - Organization for Economic Co-operation and Development (2001): Environmental indicators for agriculture. Methods and Results, Volume 3. Paris.

Gómez-Limón, J. A., & Sanchez-Fernandez, G. (2010). Empirical evaluation of agricultural sustainability using composite indicators. *Ecological economics*, 69(5), 1062-1075.