

Name:

Organic matter level (%)

Definition:

Organic matter is any material produced originally by living organisms (plant or animal) that is returned to the soil and goes through the decomposition process. It consists of a range of materials from the intact original tissues of plants and animals to the substantially decomposed mixture of materials known as humus (Bot and Benites, 2005).

Method of calculation:

This indicator comes from the performance of an annually soil analysis made on the farm. For analysis of soil organic matter the "Walkley-Black" acid digestion method (Nelson and Sommers, 1982) or Loss on ignition method are used. We have taken composite samples in several points and in the range from 0 to 30 cm.

Interpretation:

The continual addition of decaying plant residues to the soil surface contributes to the biological activity and the carbon cycling process in the soil. Breakdown of soil organic matter and root growth and decay also contribute to these processes. Carbon cycling is the continuous transformation of organic and inorganic carbon compounds by plants and micro- and macro-organisms between the soil, plants and the atmosphere. Decomposition of organic matter is largely a biological process that occurs naturally. Its speed is determined by three major factors: soil organisms, the physical environment and the quality of the organic matter. (Brussaard, 1994).

Therefore, improving the rate of soil organic matter can be reached by reducing soil tillage and by adding to the soil the crop residues.

Information source:

Analysis of samples taken in the fields.

Bibliography and references:

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Brussaard, L. 1994. Interrelationships between biological activities, soil properties and soil management. In D.J. Greenland & I. Szabolcs, eds. *Soil resilience and sustainable land use*, pp. 309–329. Wallingford, UK, CAB International.

Nelson, D.W. & Sommers, L.E. 1982. Total carbon, organic carbon, and organic matter. *In*: Methods of soil analysis. Part 2. Chemical and microbiological properties, 2nd edn (eds A.L. Page, R.M. Miller & D.R. Keeney), pp. 539–579. Agron. Monogr. 9. ASA and SSSA, Madison, WI.