Low Organic Content

What happens to the organic matter in the soil? Is there enough? How much should there be? Is all organic material equal, or is some better than others? Are wood chips good or grass clippings?

Soil organic material hasn’t had a chance to break down into a usable valuable food in the soil. What's the difference between organic material and organic matter? Organic material is anything that was alive and is now in or on the soil. For it to become organic matter, it must be decomposed into humus. Humus is organic material that has been converted by microorganisms to a resistant state of decomposition.

Soil organic matter serves as a reservoir of nutrients for crops, provides soil aggregation, increases nutrient exchange, retains moisture, reduces compaction, reduces surface crusting, and increases water infiltration into soil. It also forms a bond with particles of soil to hold nutrients in the soil keeping them from leaching away.

Organic matter can disappear when soil is fluffy and aerated such as after it is rototilled. While it feels wonderful to walk in and put your hands into freshly rototilled soil, this is not thrilling or beneficial to the soil itself. The networks of connected fungal hyphae and the structure of the soil is destroyed by rototilling. The microorganisms must then rebuild their habitat and that takes some time, the fluffy soil has much more oxygen in it which causes the organic carbon to be released into the atmosphere. This is the main reason for carbon in the atmosphere and could be remedied by changing farming practices.

Soil organic matter significantly improves the soil's capacity to store and supply essential nutrients (such as nitrogen, phosphorus, potassium, calcium and magnesium), and to retain toxic elements. It allows the soil to cope with changes in soil acidity and helps soil minerals to decompose faster.

It is helpful to mulch the top layer of soil with leaves, chips, or grass clippings to keep the soil protected from drying out or from overheating. These are Materials, and not stable soil food. Eventually they will become organic matter instead of organic material, so this is a good thing. It is good to have a variety of materials because wood chips provide a different source of carbon than grass or leaves do. Yes, you can get too much of a good thing – eventually. So having a soil test done periodically can tell you what is really happening. I think the best test of all is the results you see and taste from your produce.

<https://extension.umn.edu/yard-and-garden-news/compost-and-soil-organic-matter-more-merrier>

<http://franklin.cce.cornell.edu/resources/soil-organic-matter-fact-sheet>