

Effects of treatments on soil organic matter content

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Soil health is defined by the majority of the agencies (such as the US department of agriculture) as the extended capacity of soil to function as a vital living ecosystem that sustains plants, animals and humans. Soil fertility is a related concept which refers to the role of soil in crop production and its ability to supply plant nutrients. The rate of organic matter is one of first criteria to consider while determining the fertility of a soil.

In the soil, the presence of organic matter can be divided into three constituents: living biomass of microorganisms, freshly and partially decomposed residues, and humus which is an organic matter in an advanced stage of decomposition.

Our experiment is taking place in Síkfőkút ILTER site (Northeastern Hungary). It's a long-term project where the plots were established in November 2000. Our work consists in monitoring the changes in the organic matter of 6 different treatments going from "no input" to "double wood" and "double litter". We tested 2 different layers (0-5 cm and 5-15) using the MALDI-TOF (Matrix-Assisted Laser Desorption Ionization Time-Of-Flight) and following 2 different methods which are focused on fungi-related- and the glomalin proteins. Mass spectra were created from the samples in the 100-1200 Da range. The spectra were then compared using cluster analysis based on the characteristic peaks of the soil profile.

The results obtained were different for the two protocols, and they will be detailed and explained in this review. It can be concluded that the "no input" and "no litter" treatments were significantly different from the other treatments as well as the control.

Composting of Distillery Spent Wash: A Review

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Distillery spent wash, a by-product of the alcoholic beverage industry, is an organic waste that poses significant challenges for its management due to its acidity, high organic load, and notable content of polyphenols, macronutrients, micronutrients, and heavy metals. In Europe, around sixteen billion liters of distillery waste is generated annually and its eco-unfriendly disposal can cause severe environmental and health impacts. Composting is a viable management strategy option to treat and manage the distillery slop, promoting the recycling and stabilization of organic matter and nutrients present in the material. The review examines different composting