

Influence plowed maize stalks on the dynamics of microbial indicators in soil

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Soil organic matter is very important for maintaining the stability of the overall ecosystem as well as for sustainable soil management (Wayne et al., 2019). The application of agro-technical measures on agricultural land significantly affects the quantitative changes of organic matter.

According Rusco et al., (2001), different forms of fertilizer and crop rotation having a significant influence on the contents of carbon and nitrogen in the soil. Increasing organic matter levels can increase plant nutrient content (Delgado and Follett 2002), increase element mobility, and increase water content (Rawl et al. 2003). Plowed harvesting residues fall under the life activity of micro-organisms, with the separation of low-molecular-weight and collagenous compounds that plants can absorb and engage in the transport of matter and energy. Given the high percentage of carbon in the harvest residues, their mineralization is slow. However, if it is in front of crop remains introduce fertilizers prevents a change of the variety of biodiversity that can occur in the disorder of the relationship of C / N. If a different group of heterotrophic microorganisms is introduced into the tillage of the harvesting residues, the mineralization processes can be impeded as their abundance, diversity and enzymatic activity in the soil increase.

The aim of the study was to determine the basic parameters of soil biogenicity before sowing soybeans on the parcels where the corn was pre-sown under the following fertilization variants: 1. Mineral fertilizer 100 kg N / ha; 2. Corn stalks; 3. Corn stalks + 80 kgN / ha; 4. Corn stalks + 80 kgN / ha +20 lit / ha EM Activ. A microbiological preparation with a large group of effective micro-organisms (Lactobacillus sp. , Rhodopseudomonas sp., Saccharomyces sp. and fungi) EM Activ was applied by spraying chopped corn.

At the beginning of vegetation, microbial soil characteristics up to a depth of 0-20 cm were determined according to the number of different physiological and systemic groups of microorganisms

The total number of microorganisms as well as the number of tested microorganism groups had the highest values in variant 4. Given that the synthesis of humus is a long slow process, it can be concluded that the cultivation of maize and the introduction of different groups of microorganisms can affect significant processes in the soil.