



COMPARISON OF SOIL MICROBIOTA IN WHEAT AND BARLEY CROPS

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Abstract: *This study investigated differences in the abundance, composition, and diversity of microbial communities throughout the growing season in soils collected from fields cultivated with winter wheat and winter barley in the northeastern region of Moldova.*

• Introduction

To understand the implications that microorganisms have in different agricultural processes, a first step is to know the structure and abundance of microbial communities in the soils we cultivate. In this regard, the purpose of the presented works is to (i) analyze the seasonal dynamics of microbial communities in the rhizosphere of winter wheat and winter barley and (ii) examine the structural changes that occur in microbial communities during the growing season.

• Material and method

Soil sampling was conducted three times during the vegetation period of the wheat and barley crops.

In this study, PDA was used as the culture medium. To determine the total number of bacteria, standard PDA was used, while the enumeration of Gram-positive bacteria was performed using PDA supplemented with streptomycin (35 mg/L). Filamentous fungi were quantified using PDA medium supplemented with Rose Bengal (35 mg/L) to inhibit the proliferation of fast-growing molds.

• Conclusions

Based on the data obtained in this study, it can be concluded that crop type influences the structure and dynamics of soil microbial communities, both bacterial and fungal. Soils cultivated with barley generally exhibited a higher total number of bacteria compared to those cultivated with wheat, with the most notable differences observed in autumn.

• Results and discussions

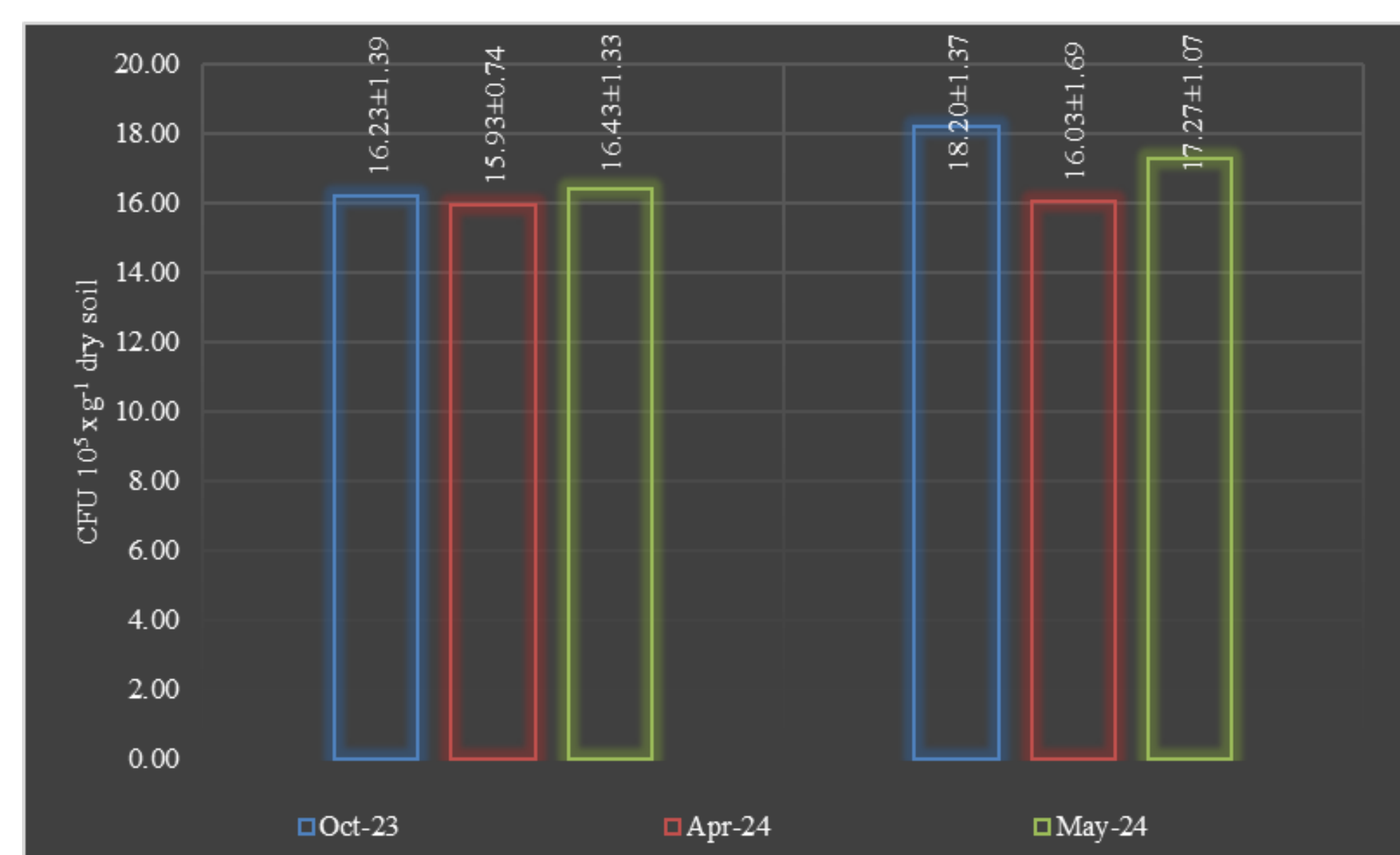


Figure 1. Evolution of the total number of bacteria during the growing season

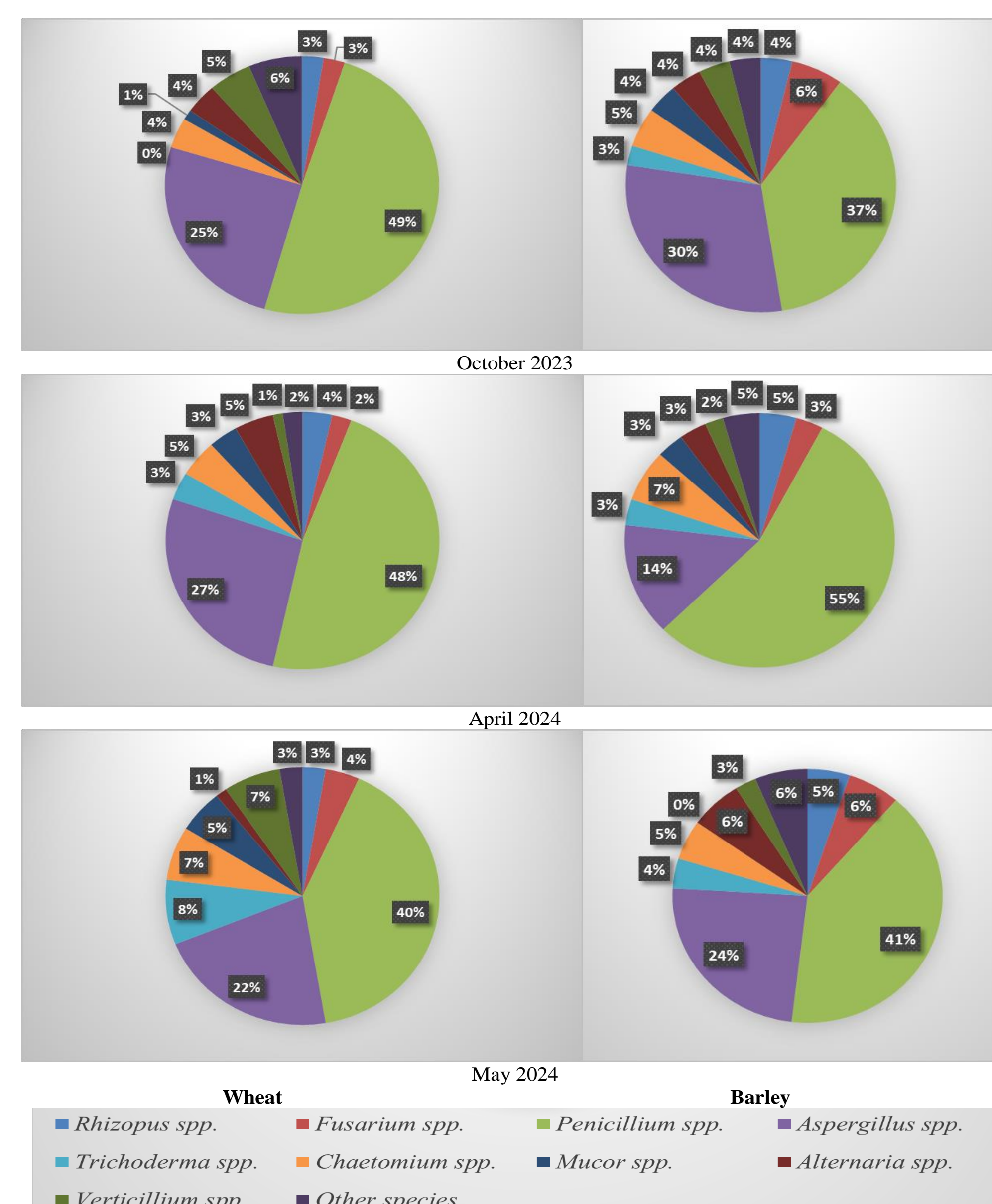


Figure 2. Changes in fungal communities during the growing season