

A preliminary study of microbial function in the soil at Canadian low Arctic

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Soil microbes play important roles such as carbon and nutrient cycling, homeostasis, and stress, and so on. However, information which and how many microbes involve the roles is almost unknown, especially Arctic tundra.

In this paper, we report preliminary results of microbial functions in the soil at Canadian low Arctic.

The soil sample was collected at Whapmagoostui-Kuujuarapik (55°16'N 77°45'W). We brought the samples to National Institute of Polar Research and extract DNA and RNA. These samples were analysed for the functional gene using the MicroArray method.

A 90000 to 100000 functional genes were detected for DNA. On the other hand, 60000 to 70000 were detected for RNA. Most of the detected microbe was bacteria, but we also detected Ascomata, Basidiomycota and Viruses genes.

We detected various functions from the DNA/RNA. Metal homeostasis and stress were main functional genes. It is assumed that these functional genes are important to maintain and keep soil microbial function.