Microfaunal primary succession on the volcanic island Surtsey

The island of Surtsey, Iceland, was formed in 1963 by a volcanic eruption. Since then, it has served as a unique natural laboratory for scientists interested in primary succession. In this study we investigated the state of the soil microfauna succession in 1995. We examined locations on the island with different vegetation types (unvegetated soil, soil with one or two plant species, and bird colony soil with a diverse vegetation). We recorded at least 16 nematode taxa and 13 flagellate taxa. Most of these were not reported in previous surveys from Surtsey. On the location with unvegetated soil, ciliates and nematodes were absent and only amoebae and heterotrophic flagellates were found. Most of the protozoan populations we examined were unable to survive salinity levels corresponding to seawater. We therefore conclude that many of soil protozoa populations on Surtsey arrived to the island as airborne cysts brought there from nearby land. However, in the bird colony soil with a high input of salts from the bird droppings, several flagellate species survived and multiplied at seawater salinity. This indicates that the bird colony soil harbours microhabitats where marine flagellate populations have been established.

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