BELDIVA

Belgian Microbial Diversity Project in Antarctica

Duration of the project:	Research budget:
	Campaign budget:

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Little is known about the diversity of microbiota, microarthropds and lichens in Antarctica, factors structuring their geographical distribution, and their specific adaptations to these extreme environments. As a result, we lack the 'baseline' data needed to protect these unique ecosystems and predict possible future changes in the biodiversity and distribution of these organisms in response to ecosystem change, climate warming, and/or human introductions.

BELDIVA aims to address these gaps by studying the biodiversity in an area of 50 km around the Belgian Princess Elisabeth research station and compare it with other regions, installing Open-Top Chambers that will be used to mimic future climate warming and its effect on the (microbial) communities and studying adaptations and specific genes related to stress in this extreme environment.

During the two sampling campaigns organised during the austral summer 2008-2009 and 2009-2010, a large collection of samples was taken from the main habitats to study microorganisms and microarthropods.

These samples are being analysed and already revealed the presence of a variety of taxa, including cyanobacteria, green algae, bacteria and microarthropods, which potentially only occur in Antarctica. However, an algal division (the diatoms) was missing. We collected samples to assess the time of deglaciation of the region, which is important to compare our biodiversity data with other studies. Cartographic work is being carried out to allow a better sample assessment for future analyses and to put our samples into a geographical context.

During the campaign of 2009-2010, 8 Open-Top Chambers were installed. During the second phase of the project, we will conduct an additional sampling campaign and carry out experiments in the field. We will study, samples and some microbial taxa in more detail and integrate our results with ongoing national and international research initiatives.