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## Life in undies – Preliminary results of a citizen science data collection targeting soil health assesment in Hungary

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Last year, the Institute for Soil Sciences, Centre for Agricultural Research launched Hungary's first citizen science project with the aim to obtain information on the biological activity of soils using a simple estimation procedure. With the help of social media, the reactions on the call for applications were received from nearly 2000 locations.

In the Hungarian version of the international Soil your Undies programme, standardized cotton underwear was posted to the participants with a step-by-step tutorial, who buried their underwear for about 60 days, from mid of May until July in 2021, at a depth of about 20-25 cm. After the excavation, the participants took one digital image of the underwear and recorded the geographical coordinates, which were uploaded to a GoogleForms interface together with several basic information related to the location and the user (type of cultivation, demographic data etc.).

By analysing digital photos of the excavated undies made by volunteers, we obtained information on the level to which cotton material had decomposed in certain areas and under different types of cultivation. Around 40% of the participants buried the underwear in garden, 21% in grassland, 15% in orchard, 12% in arable land, 5% in vineyard and 4% in forest (for 3% no landuse data was provided).

The images were first processed using Fococlipping and Photoroom softwares for background removing and then percentage of cotton material remaining was estimated based on the pixels by using R Studio 'raster package'.

The countrywide collected biological activity data from nearly 1200 sites were statistically evaluated by spatially aggregating the data both for physiographical and administrative units. The results have been published on various platforms (Facebook, Instagram, specific web site etc.), and a feedback is also given directly to the volunteers.

According to the experiments the first citizen science programme proved to be successful.

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