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Overview of long-term field experiments in Germany – metadata visualization

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BonaRes ("soil as a sustainable resource for the bioeconomy") is conducting to collect data and metadata of agricultural long-term field experiments (LTFE) of Germany. It is funded by the German Federal Ministry of Education and Research (BMBF) under the umbrella of the National Research Strategy BioEconomy 2030. BonaRes consists of ten interdisciplinary research project consortia and the 'BonaRes – Centre for Soil Research'. BonaRes Data Centre is responsible for collecting all LTFE data and regarding metadata into an enterprise database upon higher level of security and visualization of the data and metadata through data portal.

In the frame of the BonaRes project, we are compiling an overview of long-term field experiments in Germany that is based on a literature review, the results of the online survey and direct contacts with LTFE operators. Information about research topic, contact person, website, experiment setup and analyzed parameters are collected. Based on the collected LTFE data, an enterprise geodatabase is developed and a GIS-based web-information system about LTFE in Germany is also settled. Various aspects of the LTFE, like experiment type, land-use type, agricultural category and duration of experiment, are presented in thematic maps. This information system is dynamically linked to the database, which means changes in the data directly affect the presentation. An easy data searching option using LTFE name, -location or -operators and the dynamic layer selection ensure a user-friendly web application. Dispersion and visualization of the overlapping LTFE points on the overview map are also challenging and we make it automatized at very zoom level which is also a consistent part of this application. The application provides both, spatial location and meta-information of LTFEs, which is backed-up by an enterprise geodatabase, GIS server for hosting map services and Java script API for web application development.