

EGU21-2179

<https://doi.org/10.5194/egusphere-egu21-2179>

EGU General Assembly 2021

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PEP725 a European phenological database

Hans Ressler, Helfried Scheifinger, Thomas Hübner, Anita Paul, and Markus Ungersböck

ZAMG - Zentralanstalt für Meteorologie und Geodynamik, Section Climatology, Austria (hans.ressl@zamg.ac.at)

“Phenology – the timing of seasonal activities of animals and plants – is perhaps the simplest process in which to track changes in the ecology of species in response to climate change” (IPCC 2007).

PEP725, the Pan-European Phenological Database, is a European research infrastructure to promote and facilitate phenological research. Its main objective is to build up and maintain a European-wide phenological database with an open, unrestricted data access for science, research and education. So far, 20 European meteorological services and 6 partners from different phenological network operators have joined PEP725.

The PEP725 phenological data base (www.pep725.eu) now offers more than 12 million phenological observations, all of them classified according to the so called BBCH scale. The first datasets in PEP725 date back to 1868; however, there are only a few observations available until 1950. Having accepted the PEP725 data policy and finished the registration, the data download is quick and easy and can be done according to various criteria, e.g., by a specific plant or all data from one country. The integration of new data sets for future partners is also easy to perform due to the flexible structure of the PEP725 database as well as the classification of the observed plants via the so-called gss format (genus, species and subspecies).

PEP725 is funded by EUMETNET, the network of European meteorological services, ZAMG, who is the acting host for PEP, and the Austrian ministry of education, science and research.

The phenological data set has been growing by about 100000 observations per year. Also the number of user registrations has continually been increasing, amounting to 305 new users and more than 28000 downloads in 2020. The greatest number of users are found in China, followed by Germany and the US. To date we could count 78 reviewed publications based on the PEP725 data set with 18 in 2020 and a total of 9 published in Nature and one in Science.

The data base statistics demonstrate the great demand and potential of the PEP725 phenological data set, which urgently needs development including a facilitated access, gridded versions and near real time products to attract a greater range of users.