DWD

Deutscher Wetterdienst
Wetter und Klima aus einer Hand

DATA SET DESCRIPTION

Phenological observations of fruit-bearing plants from beginning of sprouting to ripening, also falling of leaves for some species (annual reporters, recent)

Version recent

Cite data set as:	DWD Climate Data Center (CDC): Phenological observations of fruit-bearing plants from beginning of sprouting to ripening, also falling of leaves for some species (annual reporters, recent), Version v007 <date>.
Dataset-ID:	urn:x-wmo:md:de.dwd.cdc::obsgermany-phenology-annual_reporters-fruit-recent

INTENT OF THE DATASET

The phenological data provide an overview of plant development in Germany over the year. The data are collected by volunteer observers and reported to DWD.

POINT OF CONTACT

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DATA DESCRIPTION

Spatial coverage	Germany
Temporal coverage	rolling: 500 day before yesterday until - yesterday
Temporal resolution	annual
Format(s)	Ascii. Each file PH_Jahresmelder* contains the observation of a certain species (e.g., gooseberry), with fixed object_id (e.g., 350). The rows are sorted according to Stations_id, reference year, phase_id. Each row corresponds to one observation. The list with all phenological stations and corresponding meta-data can be found here: https://opendata.dwd.de/climate_environment/CDC/help/ PH_Beschreibung_Phaenologie_Stationen_Jahresmelder.txt .
Units	Apple, apple (early ripeness), apple (middle ripeness), apple (late ripeness), pear, pear (early ripeness), pear (late ripeness), cherry, cherry (early ripeness), cherry (late ripeness), morello, gooseberry, red currant.

Qualitaetsniveau	see	Quality_flags
Stations_id	see	stations annual reporters
Referenzjahr		year corresponding to phase
Objekt_id	see	phase definition

Phase_id	see	phase definition
Eintrittsdatum	date of observation	yyyymmdd
Eintrittsdatum_QB	see	Quality_flags
Jultag	date of observation	day of the year

Uncertainties

Factors for uncertainties include:
(1) change of observer (2) change of plants.

Quality information

The QUALITAETS_BYTE (QB) denotes whether the value was objected to and/or corrected.

Explanation for QB:
_____
QB = 1 : had no objections;
QB = 2 : corrected;
QB = 3 : confirmed with objection rejected;
QB = 5 : doubtful;
QB = 8 : incorrect;
_____

The QUALITAETS_NIVEAU (QN) shows the quality control procedure applied for a data report (of several parameters) for a certain reporting time.

Explanation for QN:
_____
QN = 1 : only formal control;
QN = 7 : second control done, before correction;
QN = 10 : quality control finished, routine corrections finished (individual corrections later still possible).
_____

DATA ORIGIN

A fixed observation area is assigned to every phenological observer. Each observation area has a station-id assigned by the network administration. The observer registers the beginning of determined growth stages (pheno phases) and notes the date in the phenological observation journal, as soon as it occured. It is important not to change the observed plant (tree, bush), the chosen plant is to be observed as much years as possible. At the end of the year, the observer send the completed observation sheet to the network operator for data recording. In the long run, this system will be replaced by online data transmission (2020: about 50 % of the observers).

VALIDATION AND UNCERTAINTY ESTIMATE

During the operational handling of phenological data each year a gross error check and an additional spatial quality control has been performed. Each year 1 - 2 % of the data are flagged to be wrong. Causes could be confusion of months and phases.

CONSIDERATIONS FOR APPLICATIONS

The current year data set is incomplete, naturally only online reported observations up to the current day are included, these stations are not spread evenly across Germany. BBCH code see phase definition.

ADDITIONAL INFORMATION

English and Latin names of plants are listed in PH_Beschreibung_Pflanze.txt. For the English name of the phase see PH_Beschreibung_Phase.txt. According to experience, at some sites a few plant species are not, not continually or only partly observed. From 1991 (West Germany)/ 1992 (East Germany) a modified oberservation programme was introduce, see PH_Beschreibung_Phaenologie_Besonderheiten_Zeitreihen.txt . When using phenological data, it is advisably to use several stations characteristically of a natural area or natural area group. In this way, the data have less gaps and the specifics of a single station are less prominently in influencing the results. The classification of natural areas and natural area groups used by Deutscher Wetterdienst (DWD) for phenological data is based on the map Naturräumliche Gliederung und Waldverbreitung (Meynen und Schmithüsen, 1953-1962), see also Handbuch der naturräumlichen Gliederung Deutschlands. Observation criteria for current pheno phases are defined in the instructions for observers.

REFERENCES

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REVISION HISTORY

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