

DATA SET DESCRIPTION

Phenological observations of wild plants, including forest and ornamental woody plants from beginning of sprouting and flowering 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 wild plants, including forest and ornamental woody plants from beginning of sprouting and flowering to ripening, also falling of leaves for some species (annual reporters, recent), Version recent, 2018.

INTENT OF THE DATASET

This describes the freely available data of the DWD Climate Data Center (CDC). The phenological data are quality controlled, flagged with a quality byte and partly corrected.

POINT OF CONTACT

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DATA DESCRIPTION

Spatial coverage Germany

Temporal coverage last year - current year

Temporal resolution annually

Format(s) Ascii. Each file PH_Jahresmelder* contains the observation of a certain species (e.g., hazel), with fixed object_id (e.g., 113). 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 .

Parameters common wormwood, wood anemone, rowan, ash, European larch, Norway spruce, lilac, forsythia, silver birch, common hazel, common heather, autumn crocus, coltsfoot, dog rose, Scots pine, cornelian cherry, dandelion, black locust, horse chestnut, European beech, goat willow, blackthorn, common snowdrop, European alder, black alder, large leaved lime, Norway maple, pendunculate oak, meadow foxtail, orchard grass, midland hawthorn.

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 Qualitätsniveau describes the data control. The individual dates are flagged with a quality byte (Eintrittsdatum_QB).	
	Qualitätsniveau:	
	1	only formal control
	7	systematically controlled and flagged but not corrected
	10	quality control and routine corrections finished (individual corrections later still possible)
	Eintrittsdatum_QB	
	0	unchecked
	1	correct
	2	corrected
	3	ratified
	5	uncertain
	7	invalid date, e.g. 31. April, corrected automatically to 30. April
	8	incorrect
	10	meadows continuous green, anew beginning of turning green not detectable

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 occurred. It is important not to change the observed plant (tree, bush) or the site (snowdrop, etc.), 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 (2015: 30 % 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 https://opendata.dwd.de/climate_environment/CDC/observations_germany/help/PH_Beschreibung_Pflanze.txt. For the English name of the phase see https://opendata.dwd.de/climate_environment/CDC/observations_germany/help/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 observation programme was introduced, see https://opendata.dwd.de/climate_environment/CDC/observations_germany/help/PH_Beschreibung_Besonderheiten_Zeitreihen_Jahresmelder.txt. When using phenological data, it is advisable 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 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 https://de.wikipedia.org/wiki/Handbuch_der_naturr%C3%A4umlichen_Gliederung_Deutschlands. Observation criteria for current pheno phases are defined in the [instructions for observers](#).

REFERENCES

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REVISION HISTORY

The data are updated daily. This document is maintained by DWD National Climate Data Center (NKDZ), last edited on 19.12.2018.