

## DATA SET DESCRIPTION

### Phenological observations of farming (annual reporters, historical)

#### Version v007

**Cite data set as:** DWD Climate Data Center (CDC): Phenological observations of farming (annual reporters, historical), Version v007, 2021.

**Dataset-ID:** urn:x-wmo:md:de.dwd.cdc::obsgermany-phenology-annual\_reporters-farming-historical

#### 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** 1951-01-01 until - 1990-12-31

**Temporal resolution** annual

**Format(s)** Ascii. Each file PH\_Jahresmelder\* contains the observation of a certain activity (e.g., farming), with fixed object\_id (e.g., 501). 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](https://opendata.dwd.de/climate_environment/CDC/help/PH_Beschreibung_Phaenologie_Stationen_Jahresmelder.txt) .

**Units** farming, cattle on the pastures.

Qualitaetsniveau	see	Quality_flags
Stations_id	see	<a href="#">stations annual reporters</a>
Referenzjahr		year corresponding to phase
Objekt_id	see	<a href="#">phase definition farming</a> <a href="#">phase definition cattle</a>

Phase_id	see	<a href="#">phase definition farming</a> <a href="#">phase definition cattle</a>
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 objekt

**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).

Occasionally, there are duplicate records with QN=1 and QN=7 or QN=10. The record with the highest QN should always be used.

## 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.

## 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.

## 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 observation programme was introduced, see [PH\\_Beschreibung\\_Phaenologie\\_Besonderheiten\\_Zeitreihen.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 [Handbuch der naturräumlichen Gliederung Deutschlands](#). Observation criteria for current pheno phases are defined in the [instructions for observers](#).

## REFERENCES

Bruns, E., van Vliet, A.J.H.: Standardisation of phenological monitoring in Europe. Wageningen University, Deutscher Wetterdienst, 2003.

DWD, Anleitung für die phänologischen Beobachter des Deutschen Wetterdienstes, Vorschriften und Betriebsunterlagen Nr. 17, Deutscher Wetterdienst Offenbach 1991, überarbeitet 2014.

Emil Meynen, Josef Schmithüsen (Herausgeber): Handbuch der naturräumlichen Gliederung Deutschlands. Bundesanstalt für Landeskunde, Remagen/Bad Godesberg, 1953–1962.

Kaspar, F., K. Zimmermann, and C. Polte-Rudolf: An overview of the phenological observation network and the phenological database of Germany's national meteorological service (Deutscher Wetterdienst). Adv. Sci. Res., 11, 93-99, doi:10.5194/asr-11-93-2014, 2014.

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## REVISION HISTORY

This document is maintained by the Climate Data Center (CDC) of DWD, last edited on 2021-06-16.