



Global crop phenological events of major crops

1. IDENTIFICATION INFORMATION

Name	Global crop phenological events of major crops
DOI	doi:10.20783/DIAS.643 [https://doi.org/10.20783/DIAS.643]
Metadata Identifier	global_crop_phenology_200020230727103549-DIAS20221121113753-en

2. CONTACT

2.1 CONTACT on DATASET

Name	Toshichika Iizumi
Organization	Institute for Agro-Environmental Sciences, National Agriculture and Food Research Institute
Address	3-1-3 Kannondai, Tsukuba, Ibaraki, 305-8604, Japan
TEL	029-838-8201
E-mail	iizumit@affrc.go.jp

2.2 CONTACT on PROJECT

2.2.1 Data Integration and Analysis System

Name	DIAS Office
Organization	Japan Agency for Marine-Earth Science and Technology
Address	3173-25, Showa-Cho, Kanazawa-ku, Yokohama-shi, Kanagawa, 236-0001, Japan
E-mail	dias-office@diasjp.net

3. DOCUMENT AUTHOR

Name	Toshichika Iizumi
Organization	Institute for Agro-Environmental Sciences, National Agriculture and Food Research Institute
E-mail	iizumit@affrc.go.jp

4. DATASET CREATOR

Name	Toshichika Iizumi
Organization	Institute for Agro-Environmental Sciences, National Agriculture and Food Research Institute

E-mail	iizumit@affrc.go.jp
--------	---------------------

5. DATE OF THIS DOCUMENT

2023-07-27

6. DATE OF DATASET

creation : 2022-03-14

7. DATASET OVERVIEW

7.1 Abstract

Using daily weather data for the period 1996–2005 as the inputs to a rule-based agro-climatic resources model, we derive the GPCW, a global dataset of crop phenological windows for maize, soybean, wheat and rice around the year 2000 with a spatial resolution of 0.5° in latitude and longitude. This dataset includes the average dates of sowing, emergence, maturity and harvesting as well as the average dates of silking for maize, flowering for soybean, heading and flowering for wheat, and transplanting, heading and flowering for rice. Distinctions are made between irrigated and rainfed conditions, winter and spring wheat, and single-, dry- and wet-season rice. The daily likelihoods of the occurrence of crop phenological events available in the dataset can be converted into peak dates of the occurrence of a crop phenological event of interest, with user-defined thresholds.

7.2 Topic Category(ISO19139)

farming

7.3 Temporal Extent

Begin Date	2000-01-01
End Date	2000-12-31
Temporal Characteristics	Daily

7.4 Geographic Bounding Box

North latitude bound	90
West longitude bound	-180
Eastbound longitude	180
South latitude bound	-90

7.5 Grid

Dimension Name	Dimension Size (slice number of the dimension)	Resolution Unit

column	720	0.5 (deg)
row	360	0.5 (deg)
vertical	1	1 (level)

7.6 Geographic Description

7.7 Keywords

7.7.1 Keywords on Dataset

Keyword Type	Keyword	Keyword thesaurus Name
theme	Agriculture > Agricultural Plant Science > Cropping Systems	GCMD_science

7.7.2 Keywords on Project

7.7.2.1 Data Integration and Analysis System

Keyword Type	Keyword	Keyword thesaurus Name
theme	DIAS > Data Integration and Analysis System	No_Dictionary

7.8 Online Resource

File download from DIAS : <https://data.diasjp.net/dl/storages/filelist/dataset:643>

7.9 Data Environmental Information

7.10 Distribution Information

name	version	specification
NetCDF	4	

8. DATA PROCESSING

8.1 Data Processing (1)

8.1.1 General Explanation of the data producer's knowledge about the lineage of a dataset

The rule-based agro-climatic resources model determines likelihoods of the occurrence of a crop phenological event of interest at a given location based on the sequence of rules and a 10-yr period of daily weather data. The rules describe climatic requirements in terms of heat, chilling,

moisture and field workability. Rainfed and irrigated conditions are separately considered. The likelihood values indicate a higher possible occurrence of a crop phenological event of interest under a given weather pattern and soil hydrologic condition.

8.1.2 Data Source

Data Source Citation Name	Description of derived parameters and processing techniques used
---------------------------	--

9. DATA REMARKS

10. DATA POLICY

10.1 Data Policy by the Data Provider

Users are asked to cite the reference (Iizumi et al., in review) when the dataset is used.

10.2 Data Policy by the Project

10.2.1 Data Integration and Analysis System

If data provider does not have data policy, DIAS Terms of Service (<https://diasjp.net/en/terms/>) and DIAS Privacy Policy (<https://diasjp.net/en/privacy/>) apply.

If there is a conflict between DIAS Terms of Service and data provider's policy, the data provider's policy shall prevail.

11. LICENSE



CC-BY 4.0 : Creative Commons Attribution 4.0 International [<https://creativecommons.org/licenses/by/4.0/>]

12. DATA SOURCE ACKNOWLEDGEMENT

12.1 Acknowledge the Data Provider

12.2 Acknowledge the Project

12.2.1 Data Integration and Analysis System

If you plan to use this dataset for a conference presentation, paper, journal article, or report etc., please include acknowledgments referred to following examples. If the data provider describes examples of acknowledgments, include them as well.

” In this study, [Name of Dataset] provided by [Name of Data Provider] was utilized. This dataset was also collected and provided under the Data Integration and Analysis System (DIAS), which was developed and operated by a project supported by the Ministry of Education, Culture, Sports, Science and Technology. ”

13. REFERENCES

Mori, A., Y. Doi and T. Iizumi, GCPW, Global crop phenological windows dataset: Improvements derived from combining site observations, a crop phenology model and potential sowing windows. Earth System Science Data (submitted).