# Global sowing and harvesting windows of major crops

## 1. IDENTIFICATION INFORMATION

| | |
|---|---|
| Name | Global sowing and harvesting windows of major crops |
| DOI | doi:10.20783/DIAS.546 [https://doi.org/10.20783/DIAS.546] |
| Metadata Identifier | global_crop_calendar_20002025051411242 2-DIAS20221121113753-en |

## 2. CONTACT

### 2.1 CONTACT on DATASET

| | |
|---|---|
| Name | Toshichika Iizumi |
| Organization | Institute for Agro-Environmental Sciences, National Agriculture and Food Research Organization |
| Address | 3-1-3 Kannondai, Tsukuba, Ibaraki, 305-8604, Japan |
| TEL | 029-838-8201 |
| E-mail | iizumi.toshichika765@naro.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 Organization |
| E-mail | iizumi.toshichika765@naro.go.jp |

## 4. DATASET CREATOR

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

| | |
|---|---|
| E-mail | iizumi.toshichika765@naro.go.jp |

# 5. DATE OF THIS DOCUMENT

2025-05-14

# 6. DATE OF DATASET

creation : 2018-07-04

# 7. DATASET OVERVIEW

## 7.1 Abstract

Using daily weather data for the period 1996  2005 as the inputs to a rule-based model, we derive calendars for maize, rice, winter and spring wheat and soybeans around the year 2000 with a spatial resolution of 0.5° in latitude and longitude. Winter and spring wheat and rainfed versus irrigated conditions are differentiated. Separate calendars for rainfed and irrigated conditions and three representative varieties (short-, medium- and long-season varieties) are estimated. The daily probabilities of sowing and harvesting derived using the model can be converted into sowing and harvesting windows, respectively, 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 bound latitude | 90 |
| West bound longitude | -180 |
| Eastbound longitude | 180 |
| South bound latitude | -90 |

## 7.5 Grid

| Dimension Name | Dimension Size (slice number of the dimension) | Resolution Unit |
|---|---|---|
| column | 720 | 0.5 (deg) |

| | | |
|---|---|---|
| row | 360 | 0.5 (day) |
| 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 : https://data.diasjp.net/dl/storages/filelist/dataset:546

## 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 model determines the potential sowing and harvesting dates of a crop 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 potential sowing date indicates days with a higher probability of completing the annual crop life cycle 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

We compared the SAGE and MIRCA2000 datasets with the modeled sowing and harvesting windows. The global data reported in USDA (1994) were also used because clear distinctions between multiple cropping seasons were available.

# 10. DATA POLICY

## 10.1 Data Policy by the Data Provider

If data are used, the relevant reference(s) or dataset DOI should be cited. For the reference(s), see the References section.

## 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



# 12. DATA SOURCE ACKNOWLEDGEMENT

## 12.1 Acknowledge the Data Provider

No acknowledgement is required.

## 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

Iizumi, T., Kim, W., Nishimori, M. (2019) Modeling the global sowing and harvesting windows of major crops around the year 2000. Journal of Advances in Modeling Earth Systems, 11, 99 112. https://doi.org/10.1029/2018MS001477