A Big Earth Data Platform for Three Poles

**A Dataset of Critical Phenological Date of Winter Wheat and Summer Corn in the North China Plain (1982-2015)**

1、Description

Crop phenology refers to the date when a crop reaches a critical growth period. The main planting pattern in the North China Plain (NCP) is the rotation system of winter wheat and summer maize. Changes in the key phenological periods of winter wheat and summer maize reflect the response and adaptability of them to climatic conditions and production management measures. And the critical phenology dates are important parameters for evaluating crop growth status and irrigation water consumption in the NCP  
 This study selected the winter wheat-summer maize stable planting area in the NCP. The GIMMS3g NDVI data from 1982 to 2015 was used. Multiple characteristis such as the maximum value, minimum value, slope, and percentage value of the curve were combined to extract phenology of winter wheat and summer maize: SOS (start of the season), PEAK (peak of the season), and EOS (end of the season). The extracted phenology was compared with the phenological records from the agro-meteorological stations. The R² was above 0.9, which was with high accuracy. (Details can be found in the reference)  
 The phenological dataset can be applied to related researches about calculating the productivity of winter wheat and summer maize, evaluating the response of crops to climate change, and estimating irrigation water consumption in this region.

2、Keywords

Theme：summer maize,NDVI,Crop phenology,Remote Sensing Technology,Farmland,winter wheat  
Discipline：Terrestrial Surface,Remote Sensing Technology  
Places：the North China Plain, the main cultivation region of winter wheat-summer maize  
Time：from 1982 to 2015

3、Data details

1.Scale：None

2.Projection：WGS84

3.Filesize：14.0MB

4.Data format：None

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：40.3776 | - |
| west：112.8346 | - | east：122.6746 |
| - | south：32.1376 | - |

5、Time frame:None--None

6、Reference method

References to data:

LEI Huimin. A Dataset of Critical Phenological Date of Winter Wheat and Summer Corn in the North China Plain (1982-2015). A Big Earth Data Platform for Three Poles, doi:10.1088/2515-7620/ac814c2022

References to articles:

Li, J., Lei, H. (2022). Impacts of climate change on winter wheat and summer maize dual-cropping system in the North China Plain. Environmental Research Communications, 4(7), 075014.

7、Supporting project information

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8、Data resource provider

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