

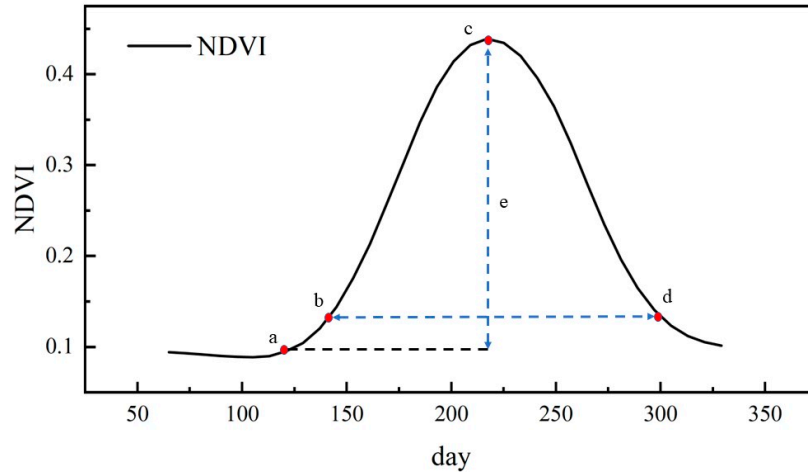
Table S1. Land cover type classification accuracy.

Year	OA (%)	MA (%)	UA (%)
2014	93.91	91.18	91.90
2015	92.53	91.97	93.92
2016	94.44	90.29	94.61
2017	93.84	95.21	89.68
2018	92.61	91.98	93.99
2019	91.87	91.48	90.96
2020	92.55	88.95	95.63

Note: OA-overall accuracy, MA- mapping accuracy, UA-user accuracy.

Table S2. Names and calculation formulas of spectral indexes.

Index	Index Name	Equation
NDVI	Normalized Difference Vegetation Index	$(\rho_{NIR} - \rho_R)/(\rho_{NIR} + \rho_R)$
EVI	Enhanced Vegetation Index	$2.5 \times \frac{\rho_{NIR} - \rho_R}{\rho_{NIR} + 6 \times \rho_R - 7.5 \times \rho_{blue} + 1}$
LSWI	Land Surface Water Index	$(\rho_{NIR} - \rho_{SWIR1})/(\rho_{NIR} + \rho_{SWIR1})$
MNDWI	Modified Normalized Difference Water Index	$(\rho_G - \rho_{SWIR})/(\rho_G + \rho_{SWIR})$
NDTI	Normalized Difference Tillage Index	$(\rho_{SWIR1} - \rho_{SWIR2})/(\rho_{SWIR1} + \rho_{SWIR2})$
NDBI	Normalized Difference Built-Up Index	$(\rho_{MIR} - \rho_{NIR})/(\rho_{MIR} + \rho_{NIR})$
NDSVI	Normalized Difference Senescence Vegetation Index	$(\rho_{SWIR1} - \rho_R)/(\rho_{SWIR1} + \rho_R)$

**Figure S1.** Phenological parameters of the NDVI curve.

Note: a is the minimum NDVI, which is the mean value of the first four time points (March) and the last four time points (November) of the time series; b is the beginning time of the vegetation growing season, which is the date when the minimum NDVI increases to 10 % of the amplitude; c is the maximum value of NDVI, d is the end of the growing season, which is the date corresponding to the 10% amplitude of the lowest point of the NDVI curve. e is NDVI amplitude, which is the difference between the maximum value and the minimum value; the time range between b and d is the duration of the growing season.