

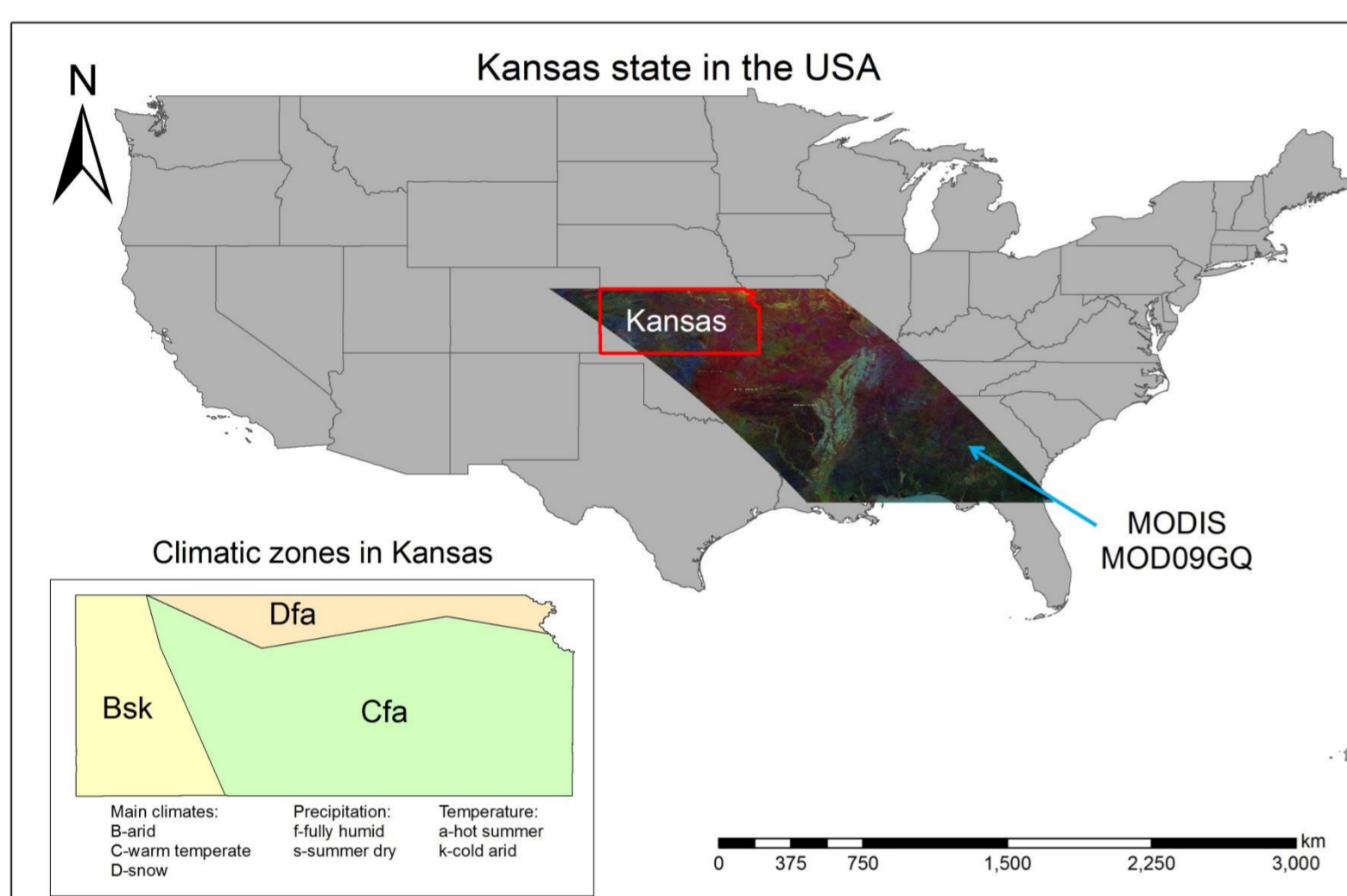
# Use of MODIS time-series NDVI for characterising crop types in the USA state of Kansas.

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## Aims and objectives

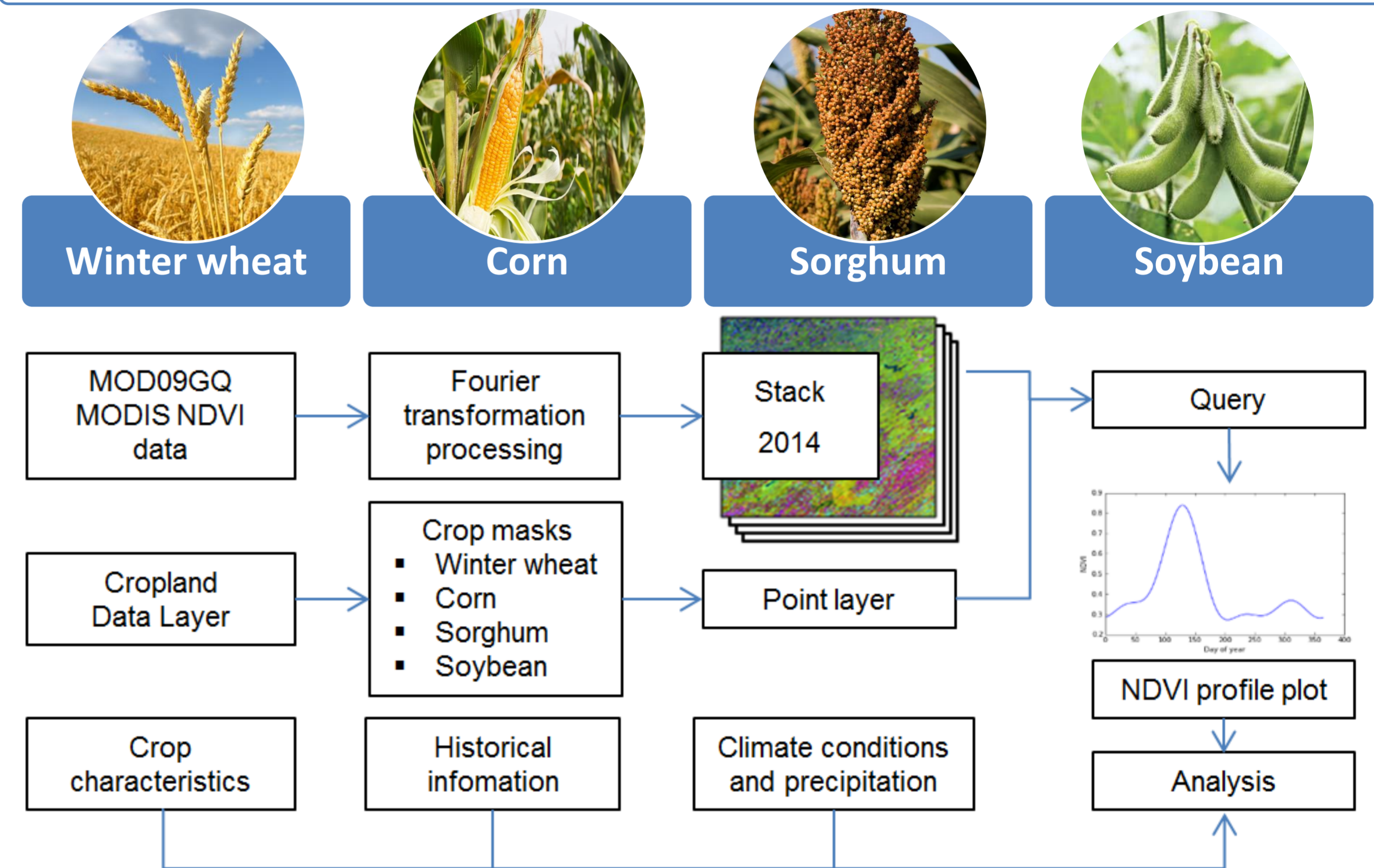
- To build multi-temporal NDVI profiles of winter wheat, corn, soybeans and sorghum from Kansas harvested in 2014.
- To characterise phenological development stages of those crops.
- To investigate relationship between growth variation, agricultural practices and climate condition in this state.

## Study area

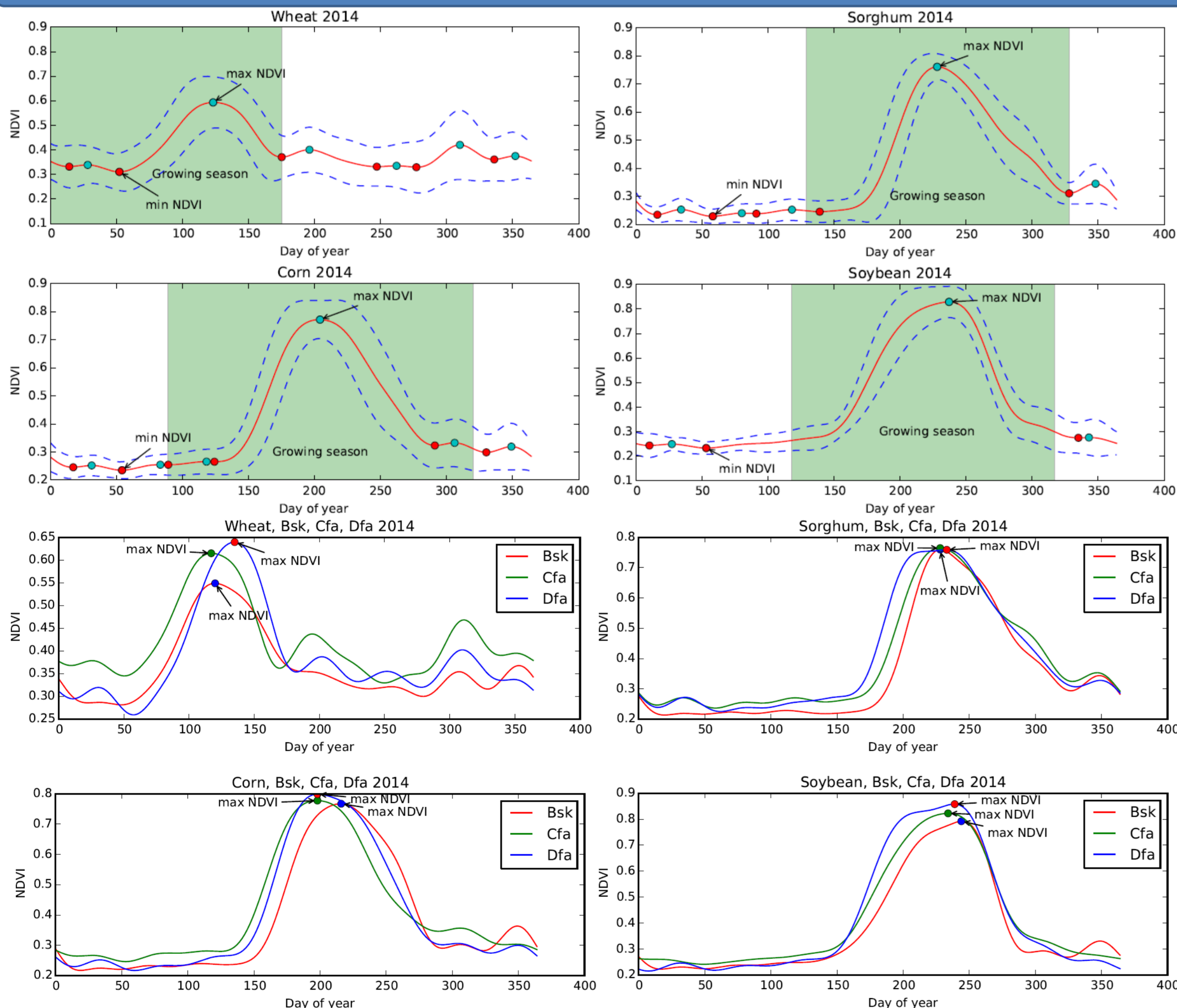


## Methodology

Multi-temporal Normalized Difference Vegetation Index (NDVI) profiles were generated from daily MODIS MOD09GQ satellite images (250 km).



## Results and conclusion



The major transition dates of crop development were extracted:

- greenup onset- day when NDVI starts rapid increase,
- peak NDVI,
- senescence- rapid decrease,
- length of growing season.

- Crops have distinct growth cycle.
- NDVI profiles of the four main crops in Kansas correspond to typical crop calendar and seasonal dynamics from historical information.
- Similarities to previous study in Kansas by Wardlow (2007) were highlighted.
- Transition dates and length of growing season depend on precipitation and climatic condition.
- Higher NDVI values during growing season were detected on crops planted in Dfa.
- Crops planted in Cfa zone had lower or similar NDVI values to Dfa zone.
- In Bsk zone precipitation was low in comparison to other zones and had lower NDVI values.