Cite this as: Jing WANG, Jing-feng Huang, Xiu-zhen WANG, Meng-ting JIN, Zhen ZHOU, Qiao-ying GUO, Zhe-wen ZHAO, Wei-jiao HUANG, Yao ZHANG, Xiao-dong SONG, 2015. Estimation of rice phenology date using integrated HJ-1 CCD and Landsat-8 OLI VI time-series images. *Journal of Zhejiang University-Science B (Biomedicine & Biotechnology)*, **16**(10):832-844. [doi:10.1631/jzus.B1500087]

Estimation of rice phenology date using integrated HJ-1 CCD and Landsat-8 OLI VI time-series images

Key words: Phenological parameters, Intercalibration, Vegetation index, HJ-1 CCD, Landsat-8 OLI

Research Summary

This research mainly focused on phenology extraction of the single-cropped rice in spatial scale from remote sensing data. The main methods used are summarized here:

- **The ordinary least-squares (OLS) was used to intercalibrate images from two sensors.**
- **The agreement analysis technique was used to compare the efficiencies between vegetation indices (VIs).**
- **The extremum and maximum slope methods were used to extract phenological stages of the single-cropped rice.**

Innovation points

- **Showed** that by integrating HJ-1 CCD and Landsat-8 OLI data using OLS, the phenological parameters of the single-cropped rice can be estimated more accurately.

- **Compared** the efficiencies between VIs using agreement analysis.

- **Extracted and validated** the phenologies of the single-cropped rice in spatial scale.

