

Monitoring the Sugarcane Phenology Through Time Series of Sentinel-2 in the Northeastern of Thailand

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Abstract: Sugarcane is an important economic crop which is grown extensively in several parts across the Northeastern of Thailand. Many agronomies try to understand phenological development because it can be linked to the yield estimation. However, gathering the information about a sugarcane practice in the field is always laborious, time-consuming and uses lots of farmers. This study utilized the advantages of multi-temporal data from Sentinel-2 satellite to generate the time series data. The NDVI was constructed during the cropping period from October 2016 to December 2017. Then, the NDVI time series of reference plots were established and used to train in the study area. The result from the data analysis revealed that using the time series of NDVI from the Sentinel-2 data exhibited a significant correlation between the NDVI and phenological development. Moreover, the sugarcane which planted in January and February showed the highest match with the reference data. Nevertheless, the differences in cultivars and planting dates have also affected the accuracy of results.

Keywords: sugarcane, phenology, Sentinel-2, time series, Thailand