

Estimation of Harvested Cabbage Area Using Multi-temporal Satellite Imagery

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Cabbage is one of the major winter vegetables in Taiwan. Due to the cold weather in winter, the flat farmland can support cabbage growth, resulting in an excessive planting area and low prices. In this study, a multi-temporal Sentinel-2 data set was utilized for the classification of cabbage harvest area prediction in every month from October to March. The cabbage harvest area were classified with a user's accuracy ranging from 92.1% to 98.7%. This study predicts the cabbage harvest area for the upcoming month. It generates distribution maps depicting cabbage harvest patterns and offers insights into data verification accuracy. Additionally, it compiles the historical planting area and market prices of cabbage over several years. This information aids in forecasting the percentage fluctuations in crop production and wholesale market prices. By establishing correlations between these factors, the study creates early warning signals regarding potential overproduction in the cabbage cultivation area. This enables relevant agricultural authorities to promptly implement appropriate measures.

Keywords: Multi-temporal Image, Cabbage, Sentinel-2