Estimating fodder crops area using multi-date high resolution satellite data- a case study in Madhya Pradesh, India

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Abstract

In India, the adequate availability of green fodder is crucial for better milk production. However, the supply and demand gaps are huge for green fodder. To address this issue, an assessment of *rabi* fodder crops was conducted in Madhya Pradesh state of India. Satellite based assessment technique was used for fodder crops acreage estimation using a hybrid approach of classification method for *rabi* season crops (2019-20). Hierarchical decision rule method followed by, ISODATA (Iterative self-organizing data analysis technique) clustering approach were used for estimating fodder crops. Multi-date NDVI was derived from the imagery to generate temporal spectral profile for different crops using ground truth (GT) data. Total 510 GT points were collected and used for validation purposes by calculating the accuracy assessment of the classified image and overall, 81% accuracy of classification was obtained. Among the study areas, Rajgarh had the highest area under fodder cultivation, whereas lowest area was in Agar-Malwa district.

Keywords: Acreage estimation, Fodder crops, ISODATA, NDVI, Remote sensing, Unsupervised classification