C-06 Spectral reflectance study of paddy and sorghum crops

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Spectral reflectance is the basis for remote sensing study of vegetation. It has been established that spectral reflectance from a canopy depends not only upon the canopy itself but also upon the background environment and atmosphere.

This study was carried out to understand the spectral reflectance characteristics of 2 crop canopies paddy and sorghum at their growth. The behaviour of 4 spectral bands blue, green, red and infra-red emulating Thermatic Mapper bands of wave lengths 0.45 - 0.52, 0.52 - 0.60, 0.63 - 0.69 and 0.76 - 0.90 mm were studied with the help of a portable multiband radiometer. The environmental conditions were also recorded at the time of making radiometric measurements in order to study its effect on reflectance. Barium sulphate panel reflectance was observed as the standard irradiance at the time of making each reflectance measurement.

Relationship of spectral reflectance with crop growth and leaf area index (LAI), relationship between band ratios namely, simple ratio IR/R, and normalized difference vegetation index, with crop growth and LAI were studied.

The study revealed positive relationships between band ratios and crop growth, LAI with crop growth and LAI with band ratios. Also, positive lenaer relationships have been established between leaf lengths and leaf area for both the crops.