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NUMERICAL ANALYSIS OF LANDSAT MSS DATA OF THE COLOMBIAN COFFEE GROWING REGION

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ABSTRACT

The most important commodity of Colombia and its most important source of income is the coffee (Coffea arabica L.). Coffee is grown in Colombia using two kinds of agricultural systems:

A) Traditional Coffee plantations. Coffee plants are shadowed with taller trees. The spectral response of these fields is determined mainly by the forest canopy. The species component of the forest varies within the fields and this condition creates a great variability in the spectral response of this cover type. The coffee plant population density is 1,000 to 3,400 plants per hectare.

B) Technified coffee plantations. In this system the coffee plants are grown almost without tree shadow, and the spatial arrangement of the plantation follows the contour intervals of the field. The plant population density is 4,000 to 4,500 plants per hectare. The spectral response is determined by the coffee plants and the soil. In some cases these kinds of plantations are associated with bananas (Musa paradisiaca L.).

In addition to the above, other land-use/land-cover types are present in the Colombian coffee region: temperate forest, sugar cane plantations, grasslands, mango plantations, urban areas and intensive agricultural areas.

Using a Landsat-2 MSS data set, a multispectral classification was performed to identify the cover types present in the area, especially the coffee plantations.

AUTHOR BIOGRAPHICAL DATA

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