
Multispectral Scanner for Monitoring Plants

John F. Kennedy Space Center, Florida

A multispectral scanner has been adapted to capture spectral images of living plants under various types of illumination for purposes of monitoring the health of, or monitoring the transfer of genes into, the plants. In a health-monitoring application, the plants are illuminated with full-spectrum visible and near infrared light and the scanner is used to acquire a reflected-light spectral signature known to be indicative of

the health of the plants. In a gene-transfer-monitoring application, the plants are illuminated with blue or ultraviolet light and the scanner is used to capture fluorescence images from a green fluorescent protein (GFP) that is expressed as result of the gene transfer. The choice of wavelength of the illumination and the wavelength of the fluorescence to be monitored depends on the specific GFP.

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