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# SPECTRAL INPUT TO AN AGROMETEOROLOGICAL CROP PHENOLOGY MODEL

R.B. POLLOCK, J.A. ARTLEY

Lockheed Engineering and Management Services Company, Inc.  
Houston, Texas

## ABSTRACT

A technique was developed to estimate the emergence of spring wheat. The technique uses limited Landsat acquisitions combined with information about the climatology and physiology of spring wheat.

The data used to develop this emergence estimation technique consisted of seven segments comprising of 85 fields. Ground truth of emergence was provided by the Statistical Reporting Service (SRS) enumerators interviewing the farm operators.

The technique employs a minimum of two acquisitions that occur before heading. A quadratic curve fitting procedure using the Kauth-Thomas greenness transformation of Landsat MSS data was employed. The date that peak greenness occurs was fixed using phenological information from the Doraiswamy-Thompson spring wheat model.

The analysis of the estimation procedure indicated that the technique produces an estimate of emergence that would be adequate for most modeling purposes.

Robert Brooks Pollock is a scientist for Lockheed Engineering and Management Services Company in the Earth Observations Department. He was born in Wichita, Kansas and received his B.S. and M.S. degrees in Agronomy from Kansas State University. He has worked for Superior Farms of California working with water and soil management. He has also held a staff position with Purdue Agronomy Department working with the National Soil Erosion Laboratory. He is currently working on the AgRISTARS project using satellite data for crop inventory and assessment.

Judith Anne Artley is employed by Lockheed Engineering and Management Services Company for two and a half years in Crop Stage Model Development Group of the Earth Observations Department. She is a native of Elkhart, Indiana. She received her Bachelor of Science degree with distinction in 1977 from Purdue University with a concentration in Agricultural Meteorology. Cornell University conferred her Master of Science degree in 1980 in Atmospheric Sciences.