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CENTER FOR RESEARCH, INC.
UNIVERSITY OF KANSAS
ERTS DETAILED IMAGE INTERPRETATION REPORT

CRINC
DIIR No. 2264-1
Date
Prepared 3 Jan 73

CR-131282

Subject: Monitoring corn harvest progress from ERTS-1, southern Finney County, Kansas.

Subject Geographic Coordinates 37-50N 100-55W NASA Test Site No. N/A

NASA Image Descriptors: Corn, Agriculture

Report Summary: Comparison of ERTS-1 imagery of three dates reveals that corn harvesting is detectable by observing tonal change associated with the change from photosynthetically active plants to bare ground.

(E73-10472) MONITORING CORN HARVEST
PROGRESS FROM ERTS-1, SOUTHERN FINNEY
COUNTY, KANSAS (Kansas Univ./Center for
Research, Inc.) 2 p HC \$3.00 CSCL 02C

N73-21309

Unclas
G3/13 00472

Imagery References

CRINC Image No.	NASA Image ID Block	Subject Image X	Coordinates Y	Cloud Cover	Image Quality
MP00019	E-1006-16511-5	(9.5) 36	54	0	Good
MP00279	E-1024-16511-5	(9.5) 34	84	0	Good
MN00113	E-1061-16570-5	(7) 46	13	0	Good

Map References: USGS NJ14-7 Scale 1:250,000

Digital Data Used Yes No

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Tones of fields in the southern Finney County test area were optically compared on three MSS5 images, acquired 29 July 1972, 16 August 1972, and 22 September 1972.

Fifty-six fields in the test area were planted to corn, according to the ground truth. All of these fields were irrigated.

All fifty-six corn fields appeared dark gray or black on the film positive of 29 July 1972. These dark tones are associated with high absorption of red light by the photosynthetically active corn.

All except one of these fields also appeared dark gray or black on 16 August 1972. The one exception had a dark band oriented east-west through the center of the field. Both the northern and southern parts of the field were light gray. The light gray tone is associated with bare sandy soil in Finney County.

On 22 September 1972, eight of the corn fields, including the one observed on 14 August 1972, were completely light gray. Subsequent ground truth verified that these fields had been harvested.

Of 13 grain sorghum fields in the test area, none had been harvested by 22 September 1972. Grain sorghum, particularly when grown under irrigation, is rarely harvested before the first killing frost.

One alfalfa field was being mowed on 22 September 1972. The mown portion appeared medium gray.

On the basis of the facts presented above, it is inferred that all fields in southern Finney County which had been dark gray or black in July and were light gray in September were corn fields which had been harvested by 22 September 1972. The images were compared under this inference and the following conclusions were drawn: (1) 15 fields had been completely harvested and (2) harvesting was in progress in four other fields.

Direct cost was 1.5 hours interpreter time, plus \$1.50 nonexpendable supplies.