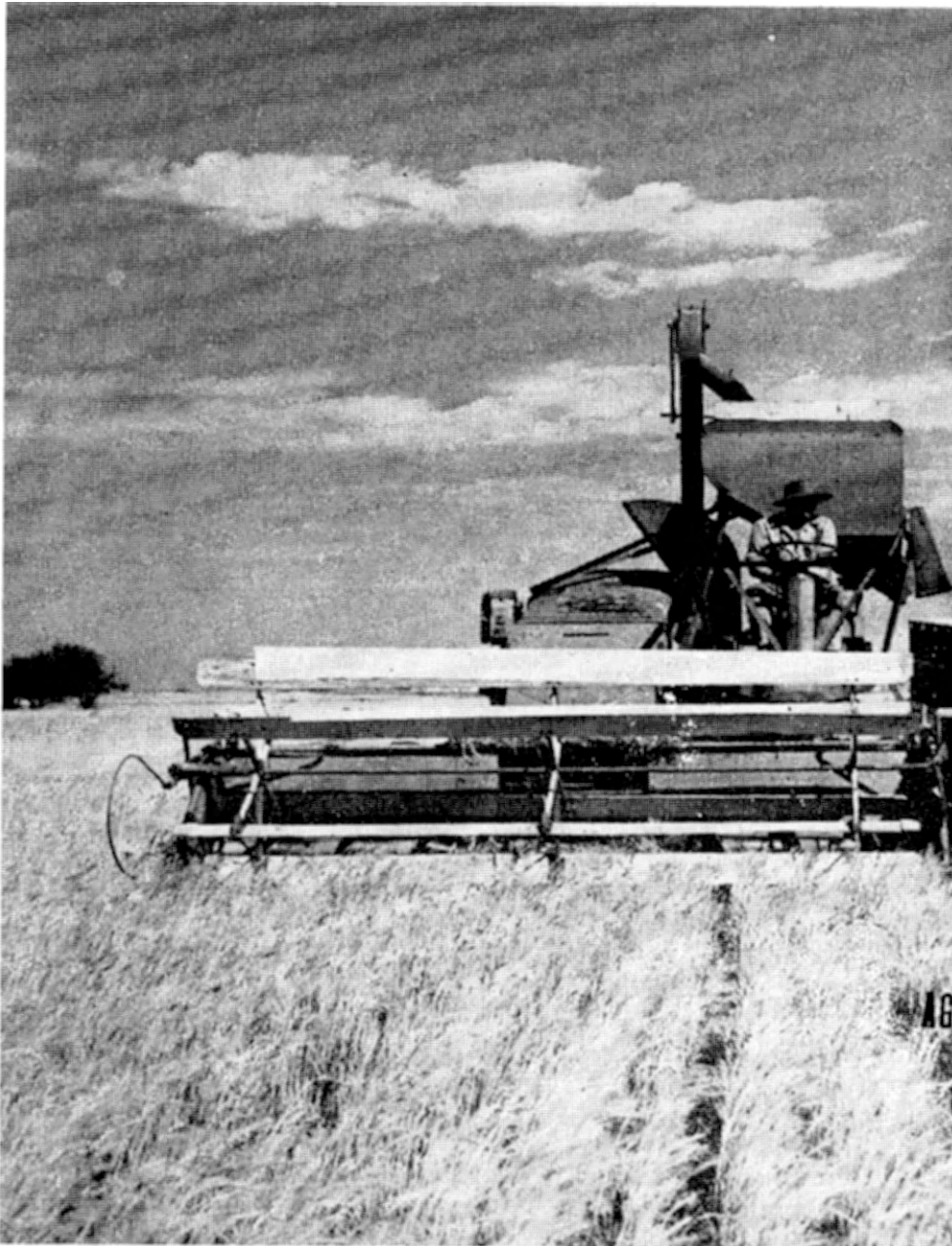


Wheat Harvesting Losses

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Wheat Harvesting Losses

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There are two principle types of losses due to harvesting wheat too wet. The most familiar one of these is recognized through such grain grading terms as tough, heat, and total damage. All of these degrading quality factors are a direct result of harvesting the wheat too wet, causing it to become out of condition while in storage. This type of loss costs farmers and grain dealers many thousands of dollars each year.

The second type of loss is that caused by starting the combine early in the morning before the wheat is sufficiently dry. When the straw is moist and tough, separation of the grain from the chaff is difficult; and, as a result, some of the grain remains in the heads after they have passed through the combine. This proves costly to the farmer, since losses of grain are often high and harvesting expense is usually greater.

In order to determine the percentage of loss of grain from early morning harvesting before the wheat is dry, tests were conducted in 1949 on the Dellis Nelson farm near Goultry in Garfield County and the Rex Peacock farm near Jefferson in Grant County. Losses of grain due to lodging were not included in this study.

It was observed that all of the grain which was being lost in harvesting remained in the heads. No loose or threshed grain was found to be coming out with the straw. Consequently, the percentage of loss could be determined by comparing the average number of kernels remaining in heads which had passed through the combine with the average number of kernels in unthreshed heads.

Test in Garfield County

The test in Garfield County was made on the morning of June 16, 1949. Samples of 100 threshed heads were taken at 8:20 a.m. and at 10:30 a.m. The number of kernels left in each sample was determined. For purposes of comparison, the number of kernels in 100 heads of unthreshed grain was also determined. The results of the test are shown in the following table:

TABLE I.—Percentage of Wheat Lost in Harvesting
(Dellis V. Nelson Farm, Garfield County, June 16, 1949)

Sample	No. Kernels in 100 Heads	Av. No. Kernels Per Head	Percent Moisture	Percent Loss
Unthreshed	2003	20.03		
Sample Combined at 8:20 a. m.	312	3.12	14.05	15.57
Sample Combined at 10:30 a. m.	218	2.18	12.90	10.88

The test showed that 15.57 percent of the wheat was being left in the heads by the combine at 8:30 a. m. compared to a loss of only 10.88 percent at 10:30 a. m. The moisture content of the grain was 14.05 percent at 8:30 a. m. and 12.90 percent two hours later.

Test in Grant County

The test in Grant County was made on June 27, 1949. Representative samples of 100 threshed heads each were taken at two-hour intervals beginning at 7:30 a.m. A sample of 100 unthreshed heads was also taken for comparison. The results are shown in Table II.

TABLE II.—Percentage of Wheat Lost in Harvesting.
(Rex Peacock Farm, Grant County, June 27, 1949)

Sample	Moisture Content	No. Kernels in 100 Heads	Percentage of Loss
Unthreshed		2115	
Sample Combined at 7:30 a. m.	13.98%	223	10.54
Sample Combined at 9:30 a. m.*	15.49%	250	11.82
Sample Combined at 11:30 a. m.	14.58%	109	5.15
Sample Combined at 1:30 p. m.	12.75%	64	3.02

* Atmospheric Humidity increased from 64 at 6:30 a. m. to 78 at 9:30 a. m.

The loss of grain varied from 10.54 percent at 7:30 a.m. to 5.15 percent at 11:30 a.m. The loss of grain was negligible when harvesting was delayed until early in the afternoon.

Summary and Conclusion

A definite relationship was found to exist between the moisture content of the grain and straw and the percentage of grain lost in harvesting. Losses of grain were considerably higher when

harvesting was started early in the morning while the straw was moist and tough.

It is best to delay starting the combine in the morning until the grain and straw are sufficiently dry so that conditions are favorable for harvesting. In this way, losses of grain in harvesting will be greatly reduced. Since the moisture content of the grain will be lower, it will also remain in better condition when placed in storage.

Acknowledgment

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