

United States Department of Agriculture
Statistical Reporting Service
Standards and Research Division
Washington, D. C.

Comparison of 1964 Objective and Reported Corn Yields
From Weighed and Non-weighed Fields

This study was made to determine if an under reporting bias is present in farmer reported yields for corn fields from which the harvested grain was weighed. Using 1964 objective yield data, comparisons were made between the yield computed for the harvested sample units and the farmer reported yield (obtained by a post-harvest interview) for the same field.

The hypothesis tested was that no differences exist between farmer reported yields and objective yield estimates when the production from the sample field had been weighed. Since the number of sample fields actually weighed within any given State was small, the sample fields were pooled to a regional level. Region 1 included 11 North Central States and 12 Southern States were assigned to Region 2. There was a total of 54 fields in Region 1 and 57 fields in Region 2, for which the farmer indicated the field had been weighed out at an elevator.

The following table gives a summary of the comparisons made.

Yield Comparisons for Fields Weighed Out at Elevator

Region	Number of fields	Average yield objective samples	Average yield reported by farmer	Difference	Standard error of difference	t value
		(\bar{x}_1)	(\bar{x}_2)	$(\bar{x}_1 - \bar{x}_2)$	$S(\bar{x}_1 - \bar{x}_2)$	
1	54	82.0	73.9	8.1	2.10	3.86**
2	57	62.9	64.9	- 2.0	3.09	- 0.65

**Highly significant.

It is apparent that a real difference exists in Region 1 between the objective yield estimate and the farmer reported yield. When earlier studies, which show that the objective yield procedure has no more than a small amount of upward bias are taken into account, it seems clear that the farmer reported yields are, based upon weighed grain, low by about 10 percent in Region 1. It should be pointed out that the yield computed from the objective samples assumes an 8-percent harvest loss whereas the farmer reported yield should reflect true harvest loss. Based on all samples for which post-harvest gleanings were made in 1964, an average harvest loss of 8 percent would appear to be about right.

There were 279 additional sample fields in Region 1 for which yield comparisons were made. For these fields, the grain was not weighed and the method most used by the farmer to estimate production was that of counting the number of wagon or truck loads. The average yield computed from objective samples from these fields was 74.3 bushels per acre compared with 69.8 bushels reported by the farmer. For 277 similar fields in Region 2 the objective sample average was 43.3 bushels while reported yield was 40.5 bushels. In both Regions the yields reported by the farmer for these fields averaged about 6 percent below that indicated by the objective samples.

The levels of objective yield do not seem to be associated with yields reported from fields from which grain was weighed. As a matter of fact, in Region 1 the difference between objective and reported yields were greater in the weighed fields than in those not weighed. These comparisons suggest that the explanation for the disparity between objective and reported yields lies elsewhere.