

Characteristics of U.S. Wheat Farming: A Snapshot. By Mir B. Ali, Nora L. Brooks, and Robert G. McElroy. Resource Economics Division, Economic Research Service, U.S. Department of Agriculture. Statistical Bulletin No. 968.

Abstract

Wheat growers' choice of production practices and geographic location were the major determinants of their costs of production, according to the findings of a 1994 survey conducted by the U.S. Department of Agriculture. One-fourth of surveyed farms reported using some form of conservation tillage, especially farms in the North Central, Northern Plains, and Southeast regions. On a per-bushel basis, low-cost farms tended to be small in terms of wheat acreage and total farm acreage. Differences in capitalization, tenure, and the use of custom services accounted for nearly 81 percent of the variation in the cost of producing wheat. Most size economies were realized at around 200 to 300 wheat acres.

Keywords: Wheat, input use, production practices, farm characteristics, farm size, costs and returns, regression, low-cost farms, high-cost farms, cumulative distribution, operator budget.

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Summary

A 1994 survey of U.S. wheat farms showed significant differences in the farm and operator characteristics among regions, by size of the wheat enterprise, and among production cost groups. Yields varied dramatically, from 28 bushels per acre in the Northern Plains to 60 bushels in the Pacific region. Farmers rented about half their wheat acreage, and wheat made up only about one-third of their total cropland. While most acres were treated with chemicals, application rates were considerably lower than on most other crops. Conventional tillage practices are still the most common; conservation tillage methods were used on about one-fourth of the total wheat acreage.

Cash costs of growing the 1994 wheat crop ranged from a low of \$70 per planted acre in the Northern Plains to \$147 in the Pacific, where irrigation was more common. Offsetting the high costs in the Pacific region were higher yields, making the per-bushel costs more comparable. On average, the value of wheat at harvest covered the cash costs of producing the crop in every region. Total economic costs were covered only in the North Central region, where relatively high yields and additional income from wheat straw contributed to positive returns to management and risk.

When the distribution of costs was estimated and ranked based on actual 1994 yields, about 60 percent of surveyed wheat growers had variable costs of production at or below \$1.80 per bushel, representing 64 percent of wheat production. Low-cost producers benefited from yields at or above expectations, while high-cost producers tended to have yields much lower than expected. Compared with high-cost farmers, low-cost farmers were more likely to own their cropland rather than to rent it and to use conservation tillage practices, resulting in much lower fuel expenses. Most low-cost farms were in the North Central region, and most high-cost farms were in the Northern Plains. The survey year (1994) was one of abnormally low yields in the Plains. With more typical yields, the concentration of high-cost farms in the Northern Plains would have been substantially less.

A farm's capitalization (as measured by average machinery investment per wheat acre) had the greatest influence on variations in unit costs, explaining 44 percent of the total variance effect between farms. The use of share rental arrangements and custom work accounted for another 15 percent of the variance, while specialization and hired labor had little influence. The analysis was expanded to compare regions. In general, the use of custom service, share-rent, and cash-rent was significantly different in all regions. Capitalization, which was the most significant variable, was also significantly different among all five regions.