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Agricultural Productivity

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Agricultural Productivity is one of a series of pamphlets intended to provide Indiana's citizens with information about the agricultural food production, processing and marketing system which supplies our huge variety of safe and nutritious food on a daily basis.

Source of data: U. S. Dept. of Agriculture statistics.

A better tomorrow in our ability to produce food efficiently is not automatic. In fact, continued progress probably will come with increasing difficulty. On the world scene, efficiency of agricultural production in other countries will tend to catch up. The current loss of the international competitive efficiency advantage of many segments of American industry is a sober fact to ponder. A better tomorrow can pass away unless we vigorously and continuously work today.

NEW 5/83
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AGRICULTURAL PRODUCTIVITY
by R. L. Kohls, Department of Agricultural Economics



**PURDUE UNIVERSITY • COOPERATIVE EXTENSION SERVICE
AGRICULTURAL EXPERIMENT STATION • SCHOOL OF AGRICULTURE
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When conversation swings around to the topic of productivity, farmers speak with pride. And well they should! The American farmers' record of production efficiency is the envy of other domestic industries and of the world.

Let's examine some of the details in this productivity picture over the past 40 years. The figures are averaged in 5-year spans and then presented by decades since the end of World War II. This evens out some of the variations from year to year.

In the overall picture of efficiency, all of the inputs—land, labor, machinery, chemicals—are lumped together. The outputs of farmers—all crops and all livestock products—are also lumped together.

Farm Output per Unit of Input	
Period	Percent change
1947-51 to 1957-61	+23
1957-61 to 1967-71	+20
1967-71 to 1977-81	+17
1947-51 to 1977-81	+73

Since the end of World War II, farm output per unit of total input has increased 73 percent. On the other hand, these data show a declining rate of improvement. This is disturbing.

It is interesting to look inside agriculture at some of the ingredients of this continued increase in production efficiency. The following table shows the progress of crop production against two of the major input factors—land and labor.

Crop Production		
Period	Percent change per acre	Percent change per labor hour
1947-51 to 1957-61	+16	+ 90
1957-61 to 1967-71	+23	+ 81
1967-71 to 1977-81	+17	+ 59
1947-51 to 1977-81	+75	+450

Crop production from each acre of land has increased 75 percent during this period. This is largely the result of the contribution of new science and technology: improved seeds, improved fertilization, improved weed and disease control and management.

Even more dramatic has been the change in what 1 hour of labor can produce. This has increased 450 percent during these years. These are the results of the tremendous improvements in machinery and the harnessing of increased amounts of horsepower to serve each man.

The productivity picture in meat animals, poultry, and dairy also shows similar trends.

Livestock Production		
Period	Percent change per acre	Percent change per labor hour
1947-51 to 1957-61	+23	+ 94
1957-61 to 1967-71	+22	+ 72
1967-71 to 1977-81	+ 9	+ 98
1947-51 to 1977-81	+63	+561

Our ability to get more pounds of meat and milk from each individual breeding unit has increased 63 percent over these years. Here again are the dramatic results of improved nutrition, genetics and disease control. Also, as with crops, the output of an hour of labor has increased sharply. Here we see the results of such things as the improved mechanization of the dairy, feed handling, waste management, housing and management.

Such efficiency improvement has meant a continuous decline in the number of people farming. It also helps explain why Americans have spent a declining portion of their incomes for food and why we can sell so much of our farm products abroad. However, it is disturbing to see evidence of a slow-down in improvement rates.