

# 1964 UNITED STATES CENSUS OF AGRICULTURE

FARMS  
FARM CHARACTERISTICS  
LIVESTOCK AND PRODUCTS  
CROPS  
FRUITS  
VALUES



VOLUME II CHAPTER 9

## Irrigation, Land Improvement Practices, and Use of Agricultural Chemicals

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# Chapter 9. Irrigation, Land Improvement Practices, and Use of Agricultural Chemicals

**Introduction**—Farm production, particularly crop production, is affected significantly by water supply, the supply of plant nutrients, the control of plant insects and diseases, the control of weeds, and other cultural practices. In some parts of the United States, there is inadequate precipitation for the production of most crops and crop production is possible only because water is supplied by irrigation. In other parts of the United States, the water supply for maximum plant growth is not adequate during some parts of the growing season because of the variation in rainfall or inadequate rainfall. Irrigation and water management are important factors in securing satisfactory crop yields. Contour cultivation is used to conserve moisture by creating ridges and trenches which temporarily retain water, allowing more time for the water to infiltrate the soil and thus reduce water run off. Stripcropping in which alternate strips of close growing crops and intertilled crops or bands of fallow land are grown with rows at right angles to the slope, slows down the movement of water, filters out silt, permits greater water infiltration, and helps prevent soil blowing.

The application of dusts and spraying for the prevention and control of insects and diseases has become widespread and is an important practice for maintaining and improving crop production. The elimination of weeds in crops through the use of chemicals is a relatively new farm practice. Weeds compete with crops for soil nutrients, water, and light. The weed problem is important in all climates or areas of the United States. In arid regions where irrigation is used, the water toll taken by weeds is large. In semi-arid areas, the elimination of poor quality herbage and useless shrubs is important for the improvement of grazing lands. Until recently the control of weeds depended upon the use of machinery, animal energy, and human energy. Recently, chemical herbicides have partially replaced mechanical weed control for many crops and in many areas.

The increased use of fertilizer and lime has been an important factor in increasing crop yields and crop

production. The use of fertilizer and lime and the more effective use of water have continued to increase the efficiency of plant nutrients and water by increasing the amount of vegetation above ground, reducing water run off, increasing water infiltration, reducing water evaporation, hastening the maturity of crops which is very important in semi-arid areas and overall by significantly increasing yields.

This chapter presents data obtained in the 1964 Census of Agriculture relating to the extent of the use of the farm management practices of irrigation, use of contour farming, use of stripcropping, use of sprays and dusts for the control of insects and diseases, use of herbicides, the control of insects on livestock by spraying, dusting, or other methods, and the use of fertilizer and lime. Data on the use of sprays and dusts for the control of insects and diseases on crops, on the use of herbicides, and in the treatment of livestock for the control of insects were obtained in 1964 for the first time in any nationwide census of agriculture.

The statistics on use of irrigation were collected for all farms. The data for the use of agricultural chemicals, fertilizer, lime, contour farming, and stripcropping were collected for a sample comprising all farms with 1,000 acres or more, all farms with less than 1,000 acres and with a value of all farm products sold of \$100,000 or more, and one-fifth of the remaining farms. The statistics for items for which information was collected for a sample of farms represents estimates for all farms. For a more detailed description of the sample, the procedures used in making estimates for all farms based upon data for the sample, and for a statement of the reliability of the estimates, reference should be made to the introduction to this volume.

This chapter has three parts— part 1 contains data relating to irrigation; part 2 contains data relating to the use of fertilizer and lime; and part 3 contains statistics relating to contour farming, stripcropping, and the use of agricultural chemicals, except fertilizer and lime.

## Part 1—Irrigation

**Introduction**—Irrigation of agricultural land is important in all areas of the United States and is particularly important in the western part where precipitation is not adequate for the production of many crops without the use of irrigation.

Questions regarding irrigation of farm and ranch lands have been included in each decennial census of agriculture beginning with 1890, and in each mid-decennial census beginning with 1935. The kinds of irrigation information in each census of agriculture is summarized briefly below:

### Census of—Information obtained

- 1890. . Total acres irrigated  
Number of artesian wells flowing
- 1900. . Acres irrigated by water
  - (a) from natural streams and
  - (b) from pumped or artesian wells
- 1910. . Acres of land irrigated  
Acres of pasture irrigated

- 1920. . Acres of land irrigated  
Expenditure for irrigation water
- 1930. . Acres of irrigated cropland and  
acres and quantity of each crop  
harvested on irrigated land
- 1935. . Total acres from which irrigated  
crops were harvested
- 1940. . Acres of land from which irrigated crops  
were harvested and total acres of irrigated  
land used only for pasture
- 1945. . Total acres of land irrigated
- 1950. . Total acres of land irrigated and acres  
irrigated by sprinklers
- 1954. . Total acres irrigated
- 1959. . Total acres irrigated and acres  
irrigated by sprinklers
- 1964. . Total acres irrigated  
Acres of irrigated land used only for  
pasture or grazing  
Acres of cropland harvested irrigated  
Quantity of selected crops harvested from  
irrigated land  
Acres of each crop harvested from irrigated  
land