

INTRODUCTION

The introduction of mechanical power has brought many striking changes to our farms during the last 3 or 4 decades. The tractor has supplied a major part of this power. Motor-trucks, automobiles, and electricity have also been sources of farm power of growing importance during the last quarter of a century. The increases in these new sources of power have been accompanied by large scale reductions in animal work power on farms. With the increased use of new sources of power, the number of farmworkers required to produce food and fiber for a rapidly increasing population has declined significantly. Farm mechanization has had important influences not only upon the number of farmworkers and the output per worker but also upon the amount of agricultural land used to supply the food and fiber needs of the Nation. This report summarizes the important changes in farm mechanization since 1920, indicates the present status of mechanization, and summarizes the effects of increased use of mechanical power and equipment on farms.

Since 1920, the Censuses of Agriculture taken at 5-year intervals have provided information on machinery and facilities on farms. The farm machinery and facility items for which Census statistics have been collected include a considerable number that are used for the farm business, some that are used in the farm operator's home as well as for the farm business and others such as television sets that are used primarily in the farmer's home. Farm machinery was enumerated on the farm on which it was located at the time of the Census. The X's in the following tabular statement indicate the items for which the nationwide Censuses of Agriculture have obtained information during the period, 1920 to 1954.

The number of machines as reported by the Census represents the number on farms. It does not include machines not on farms. In the case of automobiles, the number includes automobiles owned by the farm operator and members of his family and also those owned by hired employees living on the farm.

Source and reliability of data.—The maps and charts presented in this report are based upon statistical data published in the reports of the 1954 and prior Censuses of Agriculture. The data presented in tables 2 to 33 of this chapter and used for the preparation of a number of maps and charts were obtained from a special tabulation of data for a sample of 5 percent of the specified and 1 percent of the remaining farms for the 1954 Census of Agriculture. (For a description of specified farms, reference may be made to the Introduction to Volume II of the reports of the 1954 Census of Agriculture.) As the data given in Tables 2 to 33 are estimates based upon data for a sample of farms, they differ slightly from data for the same items published in other reports of the 1954 Census of Agriculture. The estimates given in these tables are subject to sampling errors. Table 1, page 63, provides measures of the sampling reliability for the data in Tables 2 to 33.

DEFINITIONS AND EXPLANATIONS

The maps, charts, and text employ terminology consistent with the 1954 Census of Agriculture. Definitions and explanations are given for only a few items. For more detailed definitions and explanations of items related to the Census of Agriculture, reference may be made to the Introduction of Volume II of the reports for the 1954 Census of Agriculture.

FARM FACILITY AND EQUIPMENT ITEMS FOR WHICH AN INQUIRY WAS INCLUDED IN THE CENSUS OF AGRICULTURE: 1920 TO 1954

Item on Census questionnaire	1954	1950	1945	1940	1935	1930	1925	1920	Item on Census questionnaire	1954	1950	1945	1940	1935	1930	1925	1920
Telephone.....	X	X	X	X		X		X	Grain combines.....	X	X	X			(1)		
Running water.....	X		X			X		X	Corn pickers.....	X	X						
Electric water pump.....		X							Pick-up balers.....	X	X						
Water piped into a bathroom.....						X			Field forage harvesters.....	X							
Electric hot water heater.....		X															
Kitchen sink with drain.....			X														
Electricity.....	X	X	X	X		X			Automobiles.....	X	X	X	X		X		X
Power line.....		X		X					Year of newest model.....		X	X	X				
Amount of last monthly bill.....		X		X					Motortrucks.....	X	X	X	X		X		X
Home plant.....		X		X					Year of newest model.....		X	X	X				
Gas or electric light.....								X	Tractors.....			X	X		X	X	X
Electric distribution line.....			X	X					Year of latest model.....				X				
									Wheel tractors other than garden or crawler.....	X	X	X					
Television set.....	X								Year of newest model.....		X	X					
Radio.....	X		X				X		Garden tractors.....	X	X	X					
Home freezer.....		X	X						Crawler tractors.....	X	X	X					
Mechanical refrigeration.....			X						Year of newest model.....		X						
Electric washing machine.....		X															
Power-driven washing machine.....			X						Artificial ponds, reservoirs, and earth tanks.....	X							
Electric motors for farmwork.....			X			X			Upright silos.....		X						
									Pit or trench silos.....		X						
Milking machine.....	X	X	X						Kind of road surface.....		X	X	X		X	X	
Electric chick brooder.....		X							Distance to trading center.....		X				X	X	
Electric pig brooder.....	X								Value of implements and machinery.....		X	X	X		X	X	X
Power feed grinder.....	X																
Electric power feed grinder.....		X															
Stationary gasoline engines.....			X			X											

¹ Inquiry asked for number of "combines" on this farm. Data requested were for grain combines used for harvesting and threshing grains or seeds in one operation however, many types or combinations of equipment were reported instead of the type desired and the results of this inquiry were considered not satisfactory for publication.