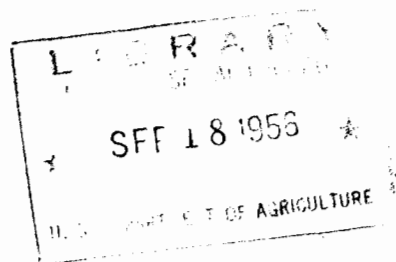


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# Liquid Petroleum Fuel



**consumption  
for farm  
purposes**

**Statistical Bulletin No. 188**

**Agricultural Research Service  
Agricultural Marketing Service**

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# LIQUID PETROLEUM FUEL CONSUMPTION FOR FARM PURPOSES

by

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Use of refined petroleum products on farms was first reported in the United States less than a century ago. From the beginning of use through the early years of the 20th century, farm consumption of liquefied petroleum fuel was largely for household purposes, chiefly as fuel for lamps. During these early years, kerosene was the principal petroleum product used on farms.

Farmers began to use internal-combustion engines at about the turn of the 20th century. By 1910, it was estimated that there were 50,000 automobiles and about 1,000 tractors with internal-combustion engines on farms. The number of motor vehicles increased rapidly during World War I years and in the immediate postwar period. Census reports show that on January 1, 1920, there were 2,146,000 automobiles, 246,000 tractors, and 139,000 motortrucks on farms (table 1).

Numbers of tractors and motortrucks are now at record high levels, and more than 1,700 percent above the numbers in 1920. From 1920 to 1930, automobiles on farms about doubled in number, but since 1930 numbers have changed little. Census reports show that since January 1, 1920, the number of farms has decreased by about 1,666,000, or about 26 percent. Of this decline, about two-thirds has occurred since 1945. A change in the definition of a farm, effective in 1950, eliminated many rural residences previously classified as farms. Many units no longer classified as farms have automobiles and some have motortrucks and tractors, especially those of the garden type.

Along with the increasing number of power machines has come a large and continuing decline in the number of horses and mules on farms. In 1920, the number of these animals on farms was near peak level at about 26,000,000. By January 1, 1956, the number had declined to fewer than 4 million horses and mules on farms.

## BASES OF ESTIMATES

This report contains estimates of farm consumption of liquid petroleum motor fuel and liquid petroleum fuel, other than motor fuel, motor oil, and grease, for 1953, with comparative data for other years.

The estimates for 1953 are based largely on information supplied by about 25,000 voluntary crop correspondents of the United States Department of Agriculture, in February 1954. At that time, the correspondents reported the number and kind of tractors, the number of automobiles, motortrucks, self-propelled machines, stationary and mounted internal-combustion engines, chain saws, power lawnmowers, and the number of other power machines with internal-combustion engines on their farms or ranches on January 1, 1954. For each kind of machine, they supplied information concerning the quantity and kind of motor fuel consumed in 1953.

For their wheel and crawler tractors, they supplied additional information so that tractors could be classified according to the type of fuel principally used.

The crop correspondents supplied information also concerning the quantity and kind of liquid petroleum fuel used on their farms in 1953 for household purposes, for brooding poultry and livestock, for drying and curing crops, for controlling weeds and brush, and for other farm uses. They reported also the principal kind of fuel used on their farms for household heating purposes.

Information obtained from the crop correspondents was tabulated and summarized by seven size-of-farm groups within each State. The data by size-of-farm groups were weighted by appropriate weights from the 1950 Census of Agriculture to derive State estimates. Consumption figures by States of motor fuel used by tractors, automobiles, and motortrucks were developed by using weights indicative of the distribution of the specified machines according to size-of-farm groups, as shown by reports of the 1950 census.

This procedure is believed to have eliminated a substantial part of the bias resulting from the fact that the farms included in the survey were above average in size. Even so, the estimates of this report can be considered only as approximations.

The material from the crop correspondents was edited, tabulated, and summarized in the Production Economics Research Branch, Agricultural Research Service. Preliminary findings of the survey were submitted to the various State agricultural statisticians of the Agricultural Marketing Service for review and appraisal.

In February 1948, crop correspondents supplied material concerning uses of liquid petroleum fuels on their farms in 1947. Findings of this study were published in the processed reports F.M. 72, "Fuel and Motor Oil Consumption and Annual Use of Farm Tractors" and F.M. 73, "Farm Consumption of Liquid Petroleum Fuels and Motor Oil," issued by the former Bureau of Agricultural Economics. The estimates of motor fuel consumption in this report for 1947 and 1948 are revisions of the figures published in F.M. 72 and F.M. 73 which resulted from revisions in the estimates of numbers of farm power machines.

In February 1950, crop correspondents supplied material concerning the quantity and cost of the L.P. gas used on their farms in 1949. The results of this study were published in the processed report F.M. 87, "Farm Consumption of Liquefied Petroleum Gases," issued by the former Bureau of Agricultural Economics. L.P. gas as sold for use is chiefly propane, butane, or a mixture of these gases. It is a liquid only under pressure. In areas where L.P. gas is handled in bulk, it is sold by the gallon. In many areas, however, it is delivered to users in cylinders and is either sold by the pound or metered. In the latter areas, it is sold under various trade names, but it is commonly called bottle or cylinder gas.

#### TOTAL FARM CONSUMPTION

Farm consumption of liquid petroleum fuel, including L.P. gas, was estimated at 8.8 billion gallons in 1953, or 24 percent more than the 7.1 billion gallons estimated for 1947. These estimates do not include motor oil, greases, or natural gas used by farm power machines or for other farm purposes (tables 2 and 3). Tractors were the largest users of liquid petroleum fuel in both 1947 and 1953. However, in 1940 and earlier years, automobiles used more motor fuel than tractors.

From 1947 to 1953, consumption of motor fuel by tractors increased 16 percent, by motortrucks 27 percent, by automobiles 22 percent, and by all other power machines 30 percent. Consumption of liquid petroleum fuel for household and miscellaneous farm uses amounted to about 2,033 million gallons in 1953. This was an increase of 574 million gallons, or about 40 percent, above consumption in 1947.

#### Motor Fuel

Of all liquid petroleum fuel used on farms in 1953, about 77 percent was used as motor fuel (table 2). About 48 percent of the motor fuel was used by tractors, 31 percent by automobiles, 16 percent by motortrucks, and 5 percent by all other power machines. Tractors, automobiles, and motortrucks together accounted for 95 percent of the motor fuel used in 1953, and for about 73 percent of total farm consumption. Consumption of motor fuel by tractors, automobiles, and motortrucks in 1953 was more than  $7\frac{1}{2}$  times consumption in 1920.

Since 1920, the percentage increase in farm consumption of all liquid petroleum fuel other than motor fuel has probably been as large as or larger than the increase in consumption of motor fuel. Of all motor fuel used in 1953, gasoline accounted for about 90 percent, diesel fuel for 3.5 percent, L.P. gas for about 3 percent, and all other fuels for 3.5 percent (table 4). Texas, Iowa, Illinois, Minnesota, and California each had an estimated consumption in excess of 300 million gallons. Together, these 5 States used about 30 percent of the total.

### Tractors

From January 1, 1920, to January 1, 1954, the number of farm tractors increased from 246,000 to 4,243,000, or more than 1,600 percent. Consumption of motor fuel by tractors in 1953 was estimated at 3,271 million gallons. In 1920, the estimated consumption was 271 million gallons.

In 1953, gasoline accounted for about 84 percent of all tractor fuel used. This was a higher percentage than for any previous year (tables 5 and 6). In 1920 and 1930, fuel other than gasoline accounted for about 60 percent of all tractor fuel used. In these years, kerosene was the leading tractor fuel. The kind of fuel used by tractors varies with the type of tractor. Gasoline is the leading motor fuel for wheel tractors in all States, and in 1953, it accounted for about 87 percent of the total motor fuel used by such tractors (table 7). Diesel fuel, which accounted for 3 percent of the fuel used for wheel tractors in 1953, was most important in the Great Plains, the West, the Delta, and the Southeastern States. L.P. gas accounted for almost 3 percent of the motor fuel used by wheel tractors in 1953. It is of above average importance in the southern and central Great Plains and in the Delta States. All other fuels, which consist largely of power fuel, tractor fuel, kerosene, and other distillates, accounted for 7 percent of the motor fuel used by wheel tractors in 1953. These fuels are of most importance in the Delta and Southeastern States.

Reports from crop correspondents indicate that nearly 90 percent of the wheel tractors on farms on January 1, 1954, used gasoline; more than 2 percent used diesel fuel; more than 1 percent used L.P. gas; and nearly 7 percent used other fuels (table 8). Wheel tractors that use diesel fuel are above average in size, and fuel consumption per tractor is above average. Consumption of L.P. gas per tractor is also substantially above average, partly because the liquefied gas is much lighter per gallon than the other fuels. More than 55 percent of the crawler tractors on farms on January 1, 1954, used principally diesel fuel, and they used about three-fourths of the motor fuel used by crawler tractors in 1953 (tables 8 and 9). In the Mountain and Pacific Coast States, more than two-thirds of the crawler tractors burned diesel fuel in 1953. In areas east of the Mountain States, however, most of the crawlers used mainly gasoline as a motor fuel.

Garden tractors accounted for about 7 percent of all tractors on farms on January 1, 1954, but used only 0.2 percent of the motor fuel used by tractors in 1953. All garden tractors use gasoline (table 8).

#### Automobiles

In 1940 and earlier years, automobiles ranked first among the users of liquid petroleum fuel on farms. They consumed a total of 2,073 million gallons of motor fuel in 1953 (table 10). Motor fuel used per automobile averaged about 490 gallons in 1953 and 400 gallons in 1947. Practically all of the fuel was gasoline.

#### Motortrucks

The number of motortrucks on farms on January 1, 1954, was about  $2\frac{1}{2}$  times the number in 1940. Since 1945, the average annual increase in number of motortrucks has exceeded 100,000 units. In 1953, total consumption of motor fuel by motortrucks was higher than for any previous year of record (table 2). About 99.7 percent of the motor fuel used by motortrucks in 1953 was gasoline (table 10). Small quantities of diesel fuel and L.P. gas were used also.

#### Other Power Machines

Motor fuel used by internal-combustion engines other than those in motor vehicles was estimated at 362 million gallons in 1953 and 278 million gallons in 1947. Of the motor fuel used by these engines in 1953, 58 percent was gasoline, 7 percent was diesel fuel, 34 percent was L.P. gas, and 1 percent was made up of all other fuels. Gasoline was of above average importance in most Northern and Eastern States. L.P. gas was of first importance in Oklahoma and Texas, but it was used extensively in the Delta and Mountain States also. Much of the L.P. gas and diesel fuel was consumed by large stationary engines, which supply power for pumping irrigation water. Small mounted engines used for stationary work, self-propelled machines, chain saws, and power lawnmowers use gasoline almost exclusively, according to the reports of crop correspondents.

### All Other Petroleum Fuels

Farm consumption of liquid petroleum fuel, other than motor fuel, was estimated at 2,033 million gallons in 1953. This includes L.P. gas but does not include motor oil, or natural gas (table 11). From 1947 to 1953, consumption of liquid petroleum fuel for these uses increased by about 40 percent (table 2). Of the liquid petroleum fuel other than motor fuel used on farms, about 30 percent was L.P. gas, 20 percent was kerosene, and 50 percent was fuel oil and other distillates. About 78 percent of these fuels was used in farm homes, 7 percent for brooding farm animals, 9 percent for curing and drying crops, and 3 percent for controlling weeds and brush. An additional 3 percent was used for orchard heating, in milkhouses, and for all other purposes (table 12).

#### Household

Household use of liquid petroleum fuel in 1953 was estimated at 1,577 million gallons. About 14 percent of the total was kerosene, 34 percent was L.P. gas, and 52 percent was made up of fuel oil and other distillates (table 13). Kerosene was of above average importance in the Appalachian and southeastern areas and in the Northeastern States. Some L.P. gas was used on farms in all States, but in the Southern Plains and the Delta States, it accounted for around 80 percent of the liquid fuels used in farm homes. Fuel oil and other distillates together accounted for most of the fuel used in farm homes in most northern areas.

Crop correspondents reported also the principal kind of fuel used for heating their homes in 1953. Around 38 percent of all farm homes were heated chiefly with wood, 28 percent with coal and coal products, 20 percent with fuel oil, kerosene, and other distillates, 9 percent with L.P. gas, 4 percent with utility or natural gas, and about 1 percent with other fuels, including electricity (table 14).

#### Brooding

In 1953, around 145 million gallons of liquid petroleum fuel was used as brooder fuel. Of the total, about 37 percent was L.P. gas, 34 percent was kerosene, and the remaining 29 percent was made up of fuel oil and other distillates (table 13).

Use of L.P. gas as a brooder fuel was reported in all areas. It accounted for more than 60 percent of the total in the Delta States, Southern Plains, and the Pacific Coast States.

Fuel oil and other distillates were used in all areas, but they were of above average importance in the Northeast, the Lake States, and the Northern Plains.



### Curing and Drying Crops

In 1953, farmers used an estimated 191 million gallons of liquid petroleum fuel to cure and dry their crops. The Appalachian and the Southeastern States together accounted for more than 80 percent of the total. In these State groups, liquid petroleum fuel is used almost exclusively for curing tobacco. Liquid petroleum fuel is used also for curing tobacco in other States, especially in the New England States.

About 12 percent of the fuel for curing and drying crops was used in the Pacific States, chiefly for drying fruit. Kerosene accounted for more than two-thirds of the fuel used for curing and drying crops. This fuel accounted for about 80 percent of the total in the major tobacco areas.

### Weed and Brush Control

Farmers used an estimated 60 million gallons of oil to control weeds and brush in 1953. This includes the liquid aromatic oils used for spraying, oils used as solvents for herbicides, and weed-burner fuel.

More than 70 percent of all fuel used in controlling weeds and brush was used in California, where polycyclic aromatic oils are used extensively, especially in citrus groves and on land adjacent to irrigation ditches.

Use of aromatic oil sprays is important only in California and Arizona. In other States, most of the liquid petroleum fuel was used as a solvent for herbicides. However, all of the L.P. gas and some kerosene and other distillates were used as fuel for weed burners.

### All Other Uses

Crop correspondents' reports indicate that in 1953, farmers used about 60 million gallons of liquid petroleum fuel for all other uses. Of this total, more than 60 percent was used in California, mainly for orchard heating (table 13). In the remaining States, liquid fuels were used chiefly to heat water in milkhouses and in barns, and as a cleaning fluid.

### Liquefied Petroleum Gas

In February 1950, crop correspondents reported the total quantity of L.P. gas used on their farms in 1949. In February 1954, they reported the quantity of L.P. gas used in 1953 for household purposes, motor fuel, brooding animals, drying and curing crops, destroying weeds and brush, and for miscellaneous uses.

Farm consumption of L.P. gas in 1949 was estimated at about 510 million gallons. Consumption in 1953 was more than 60 percent above the 1949 figure. According to crop correspondents' reports, consumption has increased since 1949 in all areas except the Pacific States. About 65 percent of the L.P. gas used in 1953 was used in farm homes, 25 percent as motor fuel, 7 percent as brooder fuel, and 3 percent in curing and drying crops, destroying weeds and brush, and for all other uses (table 15).

Table 1.- Number of farms and number of motor vehicles and horses and mules on farms, United States, specified years

Item	1920 census Jan. 1	1930 census April 1	1940 census April 1	1945 census Jan. 1	1950 census April 1	1955 census (Nov. 1954)
	Thousands	Thousands	Thousands	Thousands	Thousands	Thousands
Farms.....	6,448	6,289	6,097	5,859	5,382	4,782
Number on farms:						
Tractors 1/...	246	920	1,567	2,354	3,399	4,345
Automobiles...	2,146	4,135	4,144	4,148	4,207	4,258
Motortrucks...	139	900	1,047	1,490	2,209	2,701
Horses and mules 2/....	25,742	19,124	14,478	11,950	7,781	4,171
Farms reporting:						
Tractors 1/...	229	851	1,410	3/ 1,965	2,433	2,773
Automobiles...	1,980	3,650	3,542	3,630	3,390	3,392
Motortrucks...	132	845	944	1,299	1,840	2,213
Horses and mules 2/....	---	5,025	4,362	3,842	2,905	1,800
Number per 100 farms:	<u>Number</u>	<u>Number</u>	<u>Number</u>	<u>Number</u>	<u>Number</u>	<u>Number</u>
Tractors 1/...	4	15	26	40	63	91
Automobiles...	33	66	68	71	78	89
Motortrucks...	2	14	17	25	41	56
Horses and mules 2/....	399	304	238	204	145	87

1/ Excludes garden tractors.

2/ Agricultural Marketing Service estimates for January 1.

3/ Estimate from census data.

Table 2.- Farm consumption of liquid petroleum fuel, by use, United States, specified years 1/

Year	Motor fuel consumed by -					House- hold and miscella- neous	All uses
	Tractors	Auto- mobiles	Motor- trucks	All other	Total		
	Mil. gal.	Mil. gal.	Mil. gal.	Mil. gal.	Mil. gal.	Mil. gal.	Mil. gal.
1920...	271	514	53	<u>2/</u>	<u>2/</u>	<u>2/</u>	<u>2/</u>
1930...	748	1,388	341	<u>2/</u>	<u>2/</u>	<u>2/</u>	<u>2/</u>
1940...	1,399	1,538	397	<u>2/</u>	<u>2/</u>	<u>2/</u>	<u>2/</u>
1947...	2,820	1,695	845	278	5,638	1,459	7,097
1953...	3,271	2,073	1,069	362	6,775	2,033	8,808

1/ Does not include motor oil or other lubricants, natural and utility gas.

2/ Not available.

Table 3.- Farm consumption of liquid petroleum fuel, by States, 1953 1/

Area and State	Motor fuel consumed by -					Household : and : miscellaneous:	All uses
	Tractors	Auto- mobiles	Motor- trucks	Other motors	Total		
	Mil. gal.	Mil. gal.	Mil. gal.	Mil. gal.	Mil. gal.	Mil. gal.	Mil. gal.
<b>Northeast:</b>							
New England States...	32	41	27	4	104	86	190
New York.....	77	57	27	7	168	58	226
New Jersey.....	16	14	9	2	41	19	60
Pennsylvania.....	82	67	28	6	183	48	231
Delaware.....	5	3	2	1	11	12	23
Maryland.....	24	17	8	1	50	24	74
Total.....	236	199	101	21	557	247	804
<b>Corn Belt:</b>							
Ohio.....	127	95	26	6	254	60	314
Indiana.....	126	78	27	5	236	71	307
Illinois.....	210	96	34	9	349	90	439
Iowa.....	234	113	29	8	384	118	502
Missouri.....	125	72	33	5	235	76	311
Total.....	822	454	149	33	1,458	415	1,873
<b>Lake States:</b>							
Michigan.....	98	67	24	5	194	46	240
Wisconsin.....	135	79	28	8	250	60	310
Minnesota.....	191	88	29	10	318	84	402
Total.....	424	234	81	23	762	190	952
<b>Northern Plains:</b>							
North Dakota.....	127	34	21	12	194	28	222
South Dakota.....	97	37	15	8	157	41	198
Nebraska.....	125	64	24	15	228	66	294
Kansas.....	166	68	41	16	291	80	371
Total.....	515	203	101	51	870	215	1,085
<b>Appalachian:</b>							
West Virginia.....	7	15	11	1	34	5	39
Kentucky.....	43	54	28	2	127	29	156
Tennessee.....	45	51	31	3	130	23	153
Virginia.....	38	46	24	3	111	47	158
North Carolina.....	61	86	36	2	185	152	337
Total.....	194	252	130	11	587	256	843
<b>Southeast:</b>							
South Carolina.....	34	42	16	1	93	43	136
Georgia.....	64	52	34	2	152	49	201
Florida.....	24	23	16	6	69	13	82
Alabama.....	40	39	30	2	111	23	134
Total.....	162	156	96	11	425	128	553
<b>Delta States:</b>							
Mississippi.....	54	45	41	2	142	23	165
Louisiana.....	39	34	25	8	106	31	137
Arkansas.....	58	31	34	6	129	37	166
Total.....	151	110	100	16	377	91	468
<b>Southern Plains:</b>							
Oklahoma.....	94	50	38	8	190	60	250
Texas.....	267	144	91	113	615	144	759
Total.....	361	194	129	121	805	204	1,009
<b>Mountain:</b>							
Montana.....	50	19	16	6	91	18	109
Idaho.....	38	21	13	5	77	12	89
Wyoming.....	15	7	7	2	31	6	37
Colorado.....	58	26	20	6	110	24	134
New Mexico.....	12	9	10	8	39	11	50
Arizona.....	14	8	8	6	36	5	41
Utah.....	13	11	9	2	35	6	41
Nevada.....	3	2	2	1	8	2	10
Total.....	203	103	85	36	427	84	511
<b>Pacific:</b>							
Washington.....	37	38	22	5	102	28	130
Oregon.....	36	31	18	7	92	21	113
California.....	130	99	57	27	313	154	467
Total.....	203	168	97	39	507	203	710
<b>United States....</b>	<b>3,271</b>	<b>2,073</b>	<b>1,069</b>	<b>362</b>	<b>6,775</b>	<b>2,033</b>	<b>8,808</b>

1/ Does not include motor oil, other lubricants, natural gas, and utility gas.

Table 4.- Farm consumption of motor fuel by kind of fuel, by States, 1953 1/

Area and State	Total consumption	Percentage distribution of -			
		Gasoline	Diesel fuel	L. P. gas	All other
	Mil. gal.	Percent	Percent	Percent	Percent
Northeast:					
New England States.....	104	98	1	---	1
New York.....	168	97	2	---	1
New Jersey.....	41	98	1	---	1
Pennsylvania.....	183	98	1	---	1
Delaware.....	11	98	1	---	1
Maryland.....	50	98	1	---	1
Total.....	557	97.7	1.3	---	1
Corn Belt:					
Ohio.....	254	98	1	---	1
Indiana.....	236	97	1	2/	2
Illinois.....	349	95	2	1	2
Iowa.....	384	97	1	2/	2
Missouri.....	235	96	1	1	2
Total.....	1,458	96.7	1.2	.4	1.7
Lake States:					
Michigan.....	194	97	1	---	2
Wisconsin.....	250	97	1	2/	2
Minnesota.....	318	93	2	1	4
Total.....	762	95.7	1.4	.3	2.6
Northern Plains:					
North Dakota.....	194	88	5	1	6
South Dakota.....	157	90	3	1	6
Nebraska.....	228	76	3	3	18
Kansas.....	291	87	4	4	5
Total.....	870	85.0	3.6	2.5	8.9
Appalachian:					
West Virginia.....	34	99	1	2/	2/
Kentucky.....	127	98	2/	2/	2
Tennessee.....	130	93	1	2/	6
Virginia.....	111	99	1	2/	2/
North Carolina.....	185	97	1	2/	2
Total.....	587	97.0	.7	.1	2.2
Southeast:					
South Carolina.....	93	96	1	---	3
Georgia.....	152	91	3	2	4
Florida.....	69	77	12	---	11
Alabama.....	111	87	3	2/	10
Total.....	425	88.8	3.9	.7	6.6
Delta States					
Mississippi.....	142	89	2	1	8
Louisiana.....	106	82	5	5	8
Arkansas.....	129	76	3	4	17
Total.....	377	82.6	3.1	3.2	11.1
Southern Plains					
Oklahoma.....	190	89	2	7	2
Texas.....	615	76	3	20	1
Total.....	805	78.7	2.9	17.0	1.4
Mountain:					
Montana.....	91	84	11	1	4
Idaho.....	77	88	12	2/	2/
Wyoming.....	31	83	6	1	10
Colorado.....	110	88	7	3	2
New Mexico.....	39	74	2	21	3
Arizona.....	36	75	12	11	2
Utah.....	35	89	8	2/	3
Nevada.....	8	85	11	2/	4
Total.....	427	84.3	8.8	4.1	2.8
Pacific:					
Washington.....	102	86	13	---	1
Oregon.....	92	89	10	2/	1
California.....	313	78	18	3	1
Total.....	507	81.9	15.5	1.8	.8
United States.....	6,775	89.9	3.5	3.1	3.5

1/ State figures are revisions of previously published preliminary estimates. Includes liquid motor fuels used by all internal-combustion engines on farms. Does not include lubricating oils or natural gas.

2/ Less than 0.5 percent. Included in State group total.

Table 5.- Consumption of motor fuel by farm tractors, United States, specified years

Year	Gasoline	Diesel	Kerosene	L.P. gas	All other	Total fuel	Percent- age gasoline is of total
	Mil. gal.	Mil. gal.	Mil. gal.	Mil. gal.	Mil. gal.	Mil. gal.	Per- cent
1920	108	0	<u>1</u> /	0	163	271	40
1930	314	0	<u>1</u> /	0	434	748	42
1940	965	<u>2</u> /	84	<u>2</u> /	350	1,399	69
1947	2,245	121	180	79	195	2,820	80
1953	2,738	216	<u>2</u> /	85	232	3,271	84

1/ Included with all other fuels, but kerosene was an important tractor fuel in these years.

2/ Included with all other fuels.

Table 6.- Farm tractors: Number on farms and consumption of motor fuel, by States, 1953

Area and State	Number of tractors, Jan. 1, 1954 1/	Total fuel 2/ Mil. Gal.	Percentage distribution of -			
			Gasoline	Diesel fuel	L.P. gas	Other
	Thousands		Percent	Percent	Percent	Percent
<b>Northeast:</b>						
New England States...	62.0	32	96	3	---	1
New York.....	127.6	77	97	2	---	1
New Jersey.....	24.8	16	97	2	---	1
Pennsylvania.....	134.3	82	96	2	---	2
Delaware.....	7.6	5	97	2	---	1
Maryland.....	34.9	24	97	2	---	1
Total.....	391.2	236	96.4	2.3	---	1.3
<b>Corn Belt:</b>						
Ohio.....	194.3	127	96	2	3/	2
Indiana.....	172.3	126	94	2	3/	4
Illinois.....	260.4	210	93	2	1	4
Iowa.....	290.1	234	95	2	3/	3
Missouri.....	163.4	125	92	3	2	3
Total.....	1,080.5	822	94.1	2.2	.7	3.0
<b>Lake States:</b>						
Michigan.....	163.5	98	95	2	3/	3
Wisconsin.....	208.8	135	95	2	3/	3
Minnesota.....	244.2	191	89	3	1	7
Total.....	616.5	424	92.3	2.6	.4	4.7
<b>Northern Plains:</b>						
North Dakota.....	111.3	127	81	7	2	10
South Dakota.....	106.4	97	84	4	2	10
Nebraska.....	156.2	125	62	5	3	30
Kansas.....	166.1	166	79	6	5	10
Total.....	540.0	515	76.5	5.8	3.2	14.5
<b>Appalachian:</b>						
West Virginia.....	17.7	7	95	3	3/	2
Kentucky.....	81.0	43	94	1	3/	5
Tennessee.....	81.5	45	81	3	1	15
Virginia.....	62.7	38	96	2	3/	2
North Carolina.....	114.6	61	93	2	3/	5
Total.....	357.5	194	91.1	2	.3	6.6
<b>Southeast:</b>						
South Carolina.....	42.8	34	88	3	3/	9
Georgia.....	82.4	64	81	6	3	10
Florida.....	30.9	24	52	16	3/	32
Alabama.....	60.0	40	65	7	1	27
Total.....	216.1	162	74.1	7.0	1.7	17.2
<b>Delta States:</b>						
Mississippi.....	76.5	54	71	5	2	22
Louisiana.....	48.0	39	67	7	5	21
Arkansas.....	77.2	58	51	6	7	36
Total.....	201.7	151	62.2	5.8	4.6	27.4
<b>Southern Plains:</b>						
Oklahoma.....	101.2	94	79	4	12	5
Texas.....	264.2	267	83	5	10	2
Total.....	365.4	361	81.6	4.8	10.5	3.1
<b>Mountain:</b>						
Montana.....	52.8	50	71	21	2	6
Idaho.....	48.6	38	76	23	3/	1
Wyoming.....	18.2	15	63	13	3	21
Colorado.....	58.5	58	80	13	3	4
New Mexico.....	16.5	12	68	7	16	9
Arizona.....	13.0	14	69	18	10	3
Utah.....	18.7	13	71	19	1	9
Nevada.....	4.2	3	67	23	1	9
Total.....	230.5	203	73.5	17.3	3.5	5.7
<b>Pacific:</b>						
Washington.....	56.2	37	61	36	---	3
Oregon.....	53.6	36	72	26	3/	2
California.....	133.8	130	54	41	4	1
Total.....	243.6	203	58.0	37.2	3.0	1.8
<b>United States..</b>	<b>4,243.0</b>	<b>3,271</b>	<b>83.7</b>	<b>6.6</b>	<b>2.6</b>	<b>7.1</b>

1/ Excludes garden tractors.

2/ Includes 5,000,000 gallons of gasoline used by an estimated 370,000 garden tractors.

3/ Less than 0.5 percent. Included in State group total.



Table 7.- Wheel tractors: Number on farms and consumption of motor fuel, by States, 1953

Area and State	Number of	Total	Percentage distribution of -			
	wheel tractors, January 1, 1954	fuel	Gasoline	Diesel	L.P. gas	All other
	Thousands	Mil. gal.	Percent	Percent	Percent	Percent
Northeast:						
New England States...	58.7	29				
New York.....	122.0	73				
New Jersey.....	23.8	15				
Pennsylvania.....	129.0	79				
Delaware.....	7.5	5				
Maryland.....	34.0	24				
Total.....	375.0	225	97.5	1.2	---	1.3
Corn Belt:						
Ohio.....	191.0	124				
Indiana.....	170.0	124				
Illinois.....	257.0	207				
Iowa.....	288.0	232				
Missouri.....	161.0	123				
Total.....	1,067.0	810	94.6	1.6	.7	3.1
Lake States:						
Michigan.....	160.0	95				
Wisconsin.....	206.0	133				
Minnesota.....	240.0	189				
Total.....	606.0	417	93.1	1.7	.4	4.8
Northern Plains:						
North Dakota.....	109.0	125				
South Dakota.....	105.0	96				
Nebraska.....	154.0	123				
Kansas.....	163.0	163				
Total.....	531.0	507	77.5	4.6	3.2	14.7
Appalachian:						
West Virginia.....	17.0	7				
Kentucky.....	80.0	42				
Tennessee.....	80.0	44				
Virginia.....	61.0	37				
North Carolina.....	113.0	60				
Total.....	351.0	190	92.1	1.1	.3	6.5
Southeast:						
South Carolina.....	42.0	33				
Georgia.....	81.0	63				
Florida.....	29.0	22				
Alabama.....	59.0	39				
Total.....	211.0	157	75.9	4.7	1.8	17.6
Delta States:						
Mississippi.....	75.0	53				
Louisiana.....	47.0	38				
Arkansas.....	76.0	57				
Total.....	198.0	148	62.6	5.0	4.7	27.7
Southern Plains:						
Oklahoma.....	100.0	92				
Texas.....	260.0	263				
Total.....	360.0	355	82.7	3.7	10.5	3.1
Mountain:						
Montana.....	48.0	44				
Idaho.....	44.0	29				
Wyoming.....	17.0	13				
Colorado.....	55.0	53				
New Mexico.....	16.0	12				
Arizona.....	11.0	12				
Utah.....	17.3	11				
Nevada.....	3.7	2				
Total.....	209.0	176	82.5	7.1	3.9	6.5
Pacific:						
Washington.....	43.0	22				
Oregon.....	43.0	24				
California.....	92.0	71				
Total.....	178.0	117	89.1	4.6	3.6	2.7
United States...	4,086.0	3,102	86.9	3.0	2.7	7.4

Table 8.- Tractors on farms, January 1, 1954, distributed by kind of fuel principally used, by areas

WHEEL TRACTORS EXCLUDING GARDEN					
Area	Number	Percentage using principally -			
	Jan. 1, 1954	Gasoline	Diesel	L.P. gas	Other
	Thousands	Percent	Percent	Percent	Percent
Northeast.....	375	97.0	1.0	---	2.0
Corn Belt.....	1,067	95.0	1.5	0.5	3.0
Lake States.....	606	93.0	1.5	.2	5.3
Northern Plains..	531	77.0	4.0	2.0	17.0
Appalachian.....	351	94.0	.8	.2	5.0
Southeast.....	211	79.0	4.0	1.0	16.0
Delta States.....	198	72.0	4.0	2.0	22.0
Southern Plains..	360	88.0	3.0	6.0	3.0
Mountain.....	209	87.0	5.0	2.0	6.0
Pacific.....	178	93.0	3.0	2.0	2.0
United States :	4,086	89.4	2.4	1.3	6.9
CRAWLER TRACTORS					
Mountain.....	21	25	73	1	1
Pacific.....	66	32	66	1	1
All other.....	70	58	39	1	2
United States :	157.0	42.6	55.0	1.0	1.4
GARDEN TRACTORS					
United States :	337	100	---	---	---

Table 9.- Crawler tractors: Number on farms and consumption of motor fuel, by areas, 1953

Area	Number	Total	Percentage distribution of -			
	Jan. 1, 1954	fuel	Gasoline	Diesel	L.P. gas	Other
	Thousands	1,000 gal.	Per cent	Per cent	Per cent	Per cent
Mountain.....	21	27	14	84	1	1
Pacific.....	66	84	15	82	2	1
All other.....	70	53	41	55	2	2
United States:	157	164	23	74	2	1

Table 10.- Automobiles, motortrucks, and miscellaneous power machines: Number on farms, January 1954, and motor fuel consumed, by States, 1953

Area and State	Automobiles		Motortrucks		Miscellaneous power machines 3/				
	Number,	Motor fuel:	Number,	Motor fuel:	Motor fuel:	Percentage distribution of -			
	Jan. 1, 1954	used in 1953 1/	Jan. 1, 1954	used in 1953 2/	used in 1953	Gasoline	Diesel	L.P. gas	All other
	Thou- sands	Mil. gal.	Thou- sands	Mil. gal.	Mil. gal.	Per- cent	Per- cent	Per- cent	Per- cent
<b>Northeast:</b>									
New England States.....	89.5	41	68.1	27	4				
New York.....	124.0	57	71.5	27	7				
New Jersey.....	28.6	14	24.4	9	2				
Pennsylvania.....	146.0	67	71.0	28	6				
Delaware.....	7.1	3	5.0	2	1				
Maryland.....	37.8	17	22.0	8	1				
Total.....	433.0	199	262.0	101	21	87	13	---	---
<b>Corn Belt:</b>									
Ohio.....	199.0	95	75.0	26	6				
Indiana.....	162.0	78	75.0	27	5				
Illinois.....	191.0	96	98.0	34	9				
Iowa.....	226.0	113	81.0	29	8				
Missouri.....	161.0	72	92.0	33	5				
Total.....	939.0	454	421.0	149	33	99	1	---	---
<b>Lake States:</b>									
Michigan.....	158.0	67	68.0	24	5				
Wisconsin.....	180.0	79	85.0	28	8				
Minnesota.....	192.0	88	87.0	29	10				
Total.....	530.0	234	240.0	81	23	100	---	---	---
<b>Northern Plains:</b>									
North Dakota.....	72.0	34	64.0	21	12				
South Dakota.....	75.0	37	46.0	15	8				
Nebraska.....	121.0	64	69.0	24	15				
Kansas.....	130.0	68	108.0	41	16				
Total.....	398.0	203	287.0	101	51	81	3	10	6
<b>Appalachian:</b>									
West Virginia.....	37.0	15	26.5	11	1				
Kentucky.....	122.0	54	66.0	28	2				
Tennessee.....	118.0	51	71.0	31	3				
Virginia.....	99.0	46	57.0	24	3				
North Carolina.....	179.0	86	81.5	36	2				
Total.....	555.0	252	302.0	130	11	96	1	---	3
<b>Southeast:</b>									
South Carolina.....	88.0	42	38.0	16	1				
Georgia.....	109.0	52	75.0	34	2				
Florida.....	45.0	23	36.0	16	6				
Alabama.....	82.0	39	63.0	30	2				
Total.....	324.0	156	212.0	96	11	54	44	---	2
<b>Delta States:</b>									
Mississippi.....	95.0	45	74.0	41	2				
Louisiana.....	62.0	34	46.0	25	8				
Arkansas.....	66.0	31	75.0	34	6				
Total.....	223.0	110	195.0	100	16	42	21	34	3
<b>Southern Plains:</b>									
Oklahoma.....	91.0	50	83.0	38	8				
Texas.....	251.0	144	182.0	91	113				
Total.....	342.0	194	265.0	129	121	14	5	81	---
<b>Mountain:</b>									
Montana.....	37.5	19	47.0	16	6				
Idaho.....	42.5	21	37.0	13	5				
Wyoming.....	13.8	7	14.6	7	2				
Colorado.....	47.3	26	47.0	20	6				
New Mexico.....	15.9	9	19.0	10	8				
Arizona.....	14.7	8	13.0	8	6				
Utah.....	22.9	11	17.6	9	2				
Nevada.....	3.4	2	3.8	2	1				
Total.....	198.0	103	199.0	85	36	62	7	30	1
<b>Pacific:</b>									
Washington.....	74.0	38	55.0	22	5				
Oregon.....	61.0	31	46.0	18	7				
California.....	173.0	99	126.0	57	27				
Total.....	308.0	168	227.0	97	39	85	8	6	1
<b>United States.....</b>	<b>4,250.0</b>	<b>2,073</b>	<b>2,610.0</b>	<b>1,069</b>	<b>362</b>	<b>58</b>	<b>7</b>	<b>34</b>	<b>1</b>

1/ Of the total, 99.9 percent was gasoline.

2/ Of the total, 99.7 percent was gasoline.

3/ Includes principally engines mounted on farm machines, engines used for stationary work, self-propelled harvesting machines, chain saws, power lawnmowers, and airplanes.

Table 11.- Farm consumption of liquid petroleum fuel other than motor fuel, by kind of fuel, by States, 1953 <sup>1/</sup>

Area and State	Total fuel Mil. gal.	Percentage distribution of -		
		L.P. gas	Kerosene	Fuel oil and all other
		Percent	Percent	Percent
<b>Northeast:</b>				
New England States.....	86	8	19	73
New York.....	58	9	25	66
New Jersey.....	19	7	16	77
Pennsylvania.....	48	8	23	69
Delaware.....	12	30	26	44
Maryland.....	24	12	34	54
Total.....	247	10	23	67
<b>Corn Belt:</b>				
Ohio.....	60	7	13	80
Indiana.....	71	21	7	72
Illinois.....	90	21	7	72
Iowa.....	118	17	5	78
Missouri.....	76	35	13	52
Total.....	415	21	8	71
<b>Lake States:</b>				
Michigan.....	46	4	11	85
Wisconsin.....	60	13	5	82
Minnesota.....	84	19	4	77
Total.....	190	14	6	80
<b>Northern Plains:</b>				
North Dakota.....	28	27	5	68
South Dakota.....	41	31	5	64
Nebraska.....	66	40	9	51
Kansas.....	80	68	6	26
Total.....	215	47	7	46
<b>Appalachian:</b>				
West Virginia.....	5	5	40	55
Kentucky.....	29	22	40	38
Tennessee.....	23	28	57	15
Virginia.....	47	5	42	53
North Carolina.....	152	6	81	13
Total.....	256	9	66	25
<b>Southeast:</b>				
South Carolina.....	43	8	76	16
Georgia.....	49	37	54	9
Florida.....	13	27	56	17
Alabama.....	23	61	35	4
Total.....	128	31	58	11
<b>Delta States:</b>				
Mississippi.....	23	80	17	3
Louisiana.....	31	86	5	9
Arkansas.....	37	70	28	2
Total.....	91	78	18	4
<b>Southern Plains:</b>				
Oklahoma.....	60	81	17	2
Texas.....	144	83	13	4
Total.....	204	82	14	4
<b>Mountain:</b>				
Montana.....	18	24	1	75
Idaho.....	12	11	2	87
Wyoming.....	6	64	3	33
Colorado.....	24	55	6	39
New Mexico.....	11	68	16	16
Arizona.....	5	61	2	37
Utah.....	6	17	1	82
Nevada.....	2	28	1	71
Total.....	84	41	5	54
<b>Pacific:</b>				
Washington.....	28	7	5	88
Oregon.....	21	11	1	88
California.....	154	21	1	78
Total.....	203	18	1	81
<b>United States.....</b>	<b>2,033</b>	<b>30</b>	<b>20</b>	<b>50</b>

<sup>1/</sup> Includes liquid petroleum fuel used in farm households, for brooding purposes, for drying and curing crops, for killing weeds and brush, and for miscellaneous uses.

Production Economics Research Branch, Agricultural Research Service, and Agricultural Marketing Service, U. S. Department of Agriculture.

Table 12.- Farm consumption of liquid petroleum fuel other than motor fuel, by use by areas, 1953

Area	Total fuel	Percentage distribution of -				
		House- hold	Brood- ing	Curing and drying crops	Weed and brush control	All other
	<u>Mil. gal.</u>	<u>Per- cent</u>	<u>Per- cent</u>	<u>Per- cent</u>	<u>Per- cent</u>	<u>Per- cent</u>
Northeast.....	247	81	15	1	1	2
Corn Belt.....	415	90	7	1	1	1
Lake States.....	190	92	6	1	1/	1
Northern Plains..	215	94	5	1/	1/	1
Appalachian.....	256	50	5	44	1/	1
Southeast.....	128	50	13	36	1/	1
Delta States.....	91	83	14	1/	2	1
Southern Plains..	204	93	5	1/	1	1
Mountain.....	84	91	3	1/	4	2
Pacific.....	203	44	2	12	22	20
United States :	2,033	78	7	9	3	3

1/ Less than 0.5 percent. Included in other.

Table 13.- Consumption and percentage distribution of liquid petroleum fuel, other than motor fuel, by use and by kind of fuel, by areas, 1953

Area	Total fuel Mil. gal.	HOUSEHOLD Percentage distribution of -		
		Kerosene	L.P. gas	Fuel oil and all other
		Percent	Percent	Percent
Northeast.....	200	22	7	71
Corn Belt.....	375	6	19	75
Lake States.....	175	3	15	82
Northern Plains.....	202	5	48	47
Appalachian.....	128	49	15	36
Southeast.....	65	46	42	12
Delta States.....	76	17	79	4
Southern Plains.....	190	12	85	3
Mountain.....	76	4	44	52
Pacific.....	90	2	32	66
United States...	1,577	14	34	52
BROODING				
Northeast.....	36	24	22	54
Corn Belt.....	30	30	44	26
Lake States.....	10	23	20	57
Northern Plains.....	10	34	19	47
Appalachian.....	13	83	11	6
Southeast.....	17	54	42	4
Delta States.....	13	19	80	1
Southern Plains.....	9	25	62	13
Mountain.....	3	21	38	41
Pacific.....	4	13	74	13
United States...	145	34	37	29
CURING AND DRYING CROPS				
Appalachian.....	112	84	3	13
Southeast.....	46	77	11	12
Pacific.....	24	---	14	86
All other.....	9	10	38	52
United States...	191	68	8	24
WEED AND BRUSH CONTROL				
California.....	43	0.5	0.5	99
All other.....	17	34	8	58
United States...	60	9	2	89
ALL OTHER				
California.....	37	1/	4	96
All other.....	23	26	16	58
United States...	60	10	9	81

1/ Less than 0.5 percent.

Table 14.- Farms distributed by principal kind of fuel used for heating farm households, by areas, 1953

Area	Percentage of farms using principally -					
	Wood	Coal <sup>1/</sup>	Fuel oil, kerosene, and other distillates	L.P. gas	Natural gas and utility gas	All other <sup>2/</sup>
	Per-cent	Per-cent	Per-cent	Per-cent	Per-cent	Per-cent
Northeast.....	25.0	44.0	27.0	0.9	3.0	0.1
Corn Belt.....	20.0	48.0	26.0	3.7	2.0	.3
Lake States.....	34.0	32.0	31.0	2.0	.8	.2
Northern Plains..	12.0	31.0	35.0	16.0	5.0	1.0
Appalachian.....	49.0	36.0	10.0	1.2	3.0	.8
Southeast.....	70.0	13.0	10.0	5.0	1.0	1.0
Delta States.....	66.0	5.0	5.0	18.0	5.5	.5
Southern Plains..	32.0	5.0	10.5	42.0	10.0	.5
Mountain.....	18.0	36.0	29.0	12.3	4.0	.7
Pacific.....	33.0	3.5	33.0	13.0	12.0	5.5
United States	38.0	28.1	19.7	9.5	3.9	.8

<sup>1/</sup> Includes coke.

<sup>2/</sup> Includes electricity, heat, corncobs, and miscellaneous fuels.



Table 15.- Farm consumption of liquefied petroleum gases, by specified States, 1949 and 1953

Area and State	Percentage of farms using L.P. gas		Total farm consumption		Percentage distribution in 1953			
	1949	1953	1949	1953	Farm homes	Motor fuel	Brooding	All other uses
	Per-cent	Per-cent	Mil. gal.	Mil. gal.	Per-cent	Per-cent	Per-cent	Per-cent
Northeast.....	19	19	11	25	55	---	33	12
Corn Belt:								
Ohio.....	16	13	4	4	89	---	10	1
Indiana.....	23	26	4	16	64	3	33	1/
Illinois.....	30	26	8	21	80	12	7	1
Iowa.....	41	41	12	22	88	3	7	2
Missouri.....	24	30	20	29	76	7	16	1
Total.....	27	27	48	92	78.2	6.4	14.4	1.0
Lake States.....	28	25	18	30	84	6	7	3
Northern Plains:								
North Dakota..	42	35	6	10	74	23	2	1
South Dakota..	48	48	9	14	86	11	2	1
Nebraska.....	32	40	16	34	74	23	1	2
Kansas.....	34	47	34	64	83	16	1	1/
Total.....	37	43	65	122	79.8	17.9	1.5	.8
Appalachian.....	9	9	18	24	78	3	6	13
Southeast.....	10	18	20	42	64	7	16	13
Delta States:								
Mississippi....	18	32	18	20	75	7	17	1
Louisiana.....	38	56	19	32	79	17	3	1
Arkansas.....	20	28	19	31	63	17	19	1
Total.....	23	36	56	83	72	15	12	1
Southern Plains:								
Oklahoma.....	40	54	37	62	77	21	2	1/
Texas.....	45	63	132	244	47	51	2	1/
Total.....	43	60	169	306	53.0	44.7	1.9	.4
Mountain.....	25	28	34	52	64	34	2	1/
Pacific.....	25	21	70	46	63	20	6	11
United States...	23	27	509	822	65.5	25.3	6.6	2.6

1/ Less than 0.5 percent. Included in State groups.