More than four-fifths of the wheat grown in this area is produced on cash-grain farms.

This is largely a spring wheat area because, in most parts, the winters are generally too severe for winter wheat to survive. The severity of the winters is the main distinguishing feature between the hard spring and hard winter wheat area. (In central Montana the Triangle Area in subregion 105, is mainly a winter wheat area. This includes the following counties: Teton, Chouteau, Cascade, Judith Basin, and Fergus. The counties directly north of this group also produce some winter wheat, but the spring wheat acreage predominates. The mountainous topography gives the Triangle Area enough protection to permit winter wheat to succeed.)

The spring wheat area produces both the hard red spring wheat and durum wheat although the former predominates. For the 10-year period, 1941–50, an average of 16 million acres of hard red spring wheat and 2.6 million acres of durum wheat were produced in the United States.[2] More than 80 percent of all durum wheat was produced in North Dakota, with South Dakota and Minnesota contributing significant quantities.

The soils of the hard spring wheat area are fertile and deep. The Red River Valley soils (subregion 89), are deep, fine-textured, alluvial soils. Most of the soils in subregions 90 and 91 belong to the Northern Chernozem group. These are dark, deep, fine-textured soils, well adapted for wheat. The soils in subregion 105 belong in the Chestnut soil group which are not quite so heavy or so deep as the Chernozem soils but are, nevertheless, good for wheat production. As in the hard winter wheat region, wheat is produced mainly on the silt and silty clay loams that are fairly deep. In the World War periods, under the influences of high prices for wheat, the farmers extended wheat production into areas of coarser textured soils and shallower soils where yields fluctuate greatly. In periods of relatively low prices or in years of unfavorable moisture, farmers in these marginal areas often find their costs exceeding their income.

The topography in the spring wheat region is typical of the Great Plains—fairly level to undulating. The rainfall in the hard spring wheat area is slightly less but evaporation rates are lower than in the hard winter wheat area. Rainfall averages from 10 to 25 inches annually. In subregions 89 and 91 the annual rainfall varies between 20 and 25 inches. Subregion 90 is slightly drier, the average precipitation varying from 15 to 20 inches. The driest part of this region is subregion 105 where the annual precipitation averages from 10 to 20 inches. In all of the hard wheat region, the rainfall and humidity are sufficiently low, especially in the maturing period, to produce a hard kernel. About three-fourths of the rainfall occurs during the growing season; the rainfall is much heavier in the spring and early summer than during the harvest period in late summer.

The low annual rainfall usually necessitates summer-fallowing. Considering evaporation and run-off, 10 to 15 inches of rainfall is not enough to produce satisfactory yields. In many instances, farmers can double the yields by summer-fallowing. But it is not necessary to double the yield to make fallowing profitable. Under this practice wheat harvesting is required only once in 2 years. The fallowing practices serve as seedbed preparation. Operating costs for the 2 years, 1 year of fallow and 1 year of wheat, will exceed the operating costs for 1 year of continuous cropping, but will usually be considerably less than the operating costs for 2 years of continuous wheat. This is important to the wheat farmer in the low-rainfall area. He increases the chance of producing a crop and at the same time reduces the cost of operation.

[2] Source: Agricultural Statistics - 1953, U. S. D. A.

The wheat and summer-fallow acreages on cash-grain farms by subregions for 1954 were as follows:

	Subregion				
	89	*90*	*91*	*105*	*Total*
Wheat (1,000 acres)	1, 063	3, 875	964	4, 229	10, 131
Summer fallow (1,000 acres)	645	2, 459	206	4, 462	7, 772

Not all the summer-fallow land is used to grow wheat; some is used for other small grains.

Marketing and transportation facilities are adequate here. As in the hard winter wheat area, mainline railroads and hard-surfaced highways transect the country and farm-to-market roads are adequate for hauling the grain to market. Storage and handling facilities are short of the needs during the peak harvest seasons, but storage space has increased sharply in the period following World War II.

Many characteristics of the wheat farms in the hard spring wheat region are similar to those of the hard winter wheat regions. The farms in this region can be described as large family-type units with a high average investment per farm.

But there are significant differences. A comparison of the hard winter wheat farms with the hard spring wheat farms shows that the spring wheat farms have a slightly lower average total investment due largely to higher land values per acre. A considerably larger proportion of the farms had gross sales of less than $5,000 in most of the spring wheat subregions.

Farms in the spring wheat region have higher machinery investment, more land, more available labor (see table 31), more tractors, trucks, and combines. The cash-grain farmers in the winter wheat area specialized in wheat, in 1954, to a higher degree than spring wheat farmers with the exception of those in subregion 105. Flax, barley, and corn are among the other important cash and feed grains produced in this region.

Table 30.—A Comparison of the Cash-Grain Farms in the Hard Winter and Hard Spring Wheat Subregions: 1954

Item	Hard winter wheat subregions			Hard spring wheat subregions			
	93	94	103	89	90	91	105
Total acres per farm	358	362	820	435	696	569	1, 304
Crop acres per farm	258	264	607	378	535	442	769
Capital investment per farm (dollars):							
Land and buildings	33, 745	44, 520	55, 367	31, 144	23, 926	25, 503	45, 177
Livestock	2, 817	2, 283	3, 040	1, 710	2, 856	3, 513	3, 927
Machinery	8, 023	7, 949	10, 832	11, 748	11, 663	10, 624	12, 220
Total	44, 585	54, 752	69, 239	44, 602	38, 445	39, 640	61, 324
Man-equivalent per farm	1. 2	1. 1	1. 3	1. 4	1. 4	1. 3	1. 3
Percent of gross sales from wheat	40	75	54	29	38	31	74

In comparing the subregions within the spring wheat region, and the farmers in subregion by economic class, it is again necessary to consider the influence of yields. The 5-year average yields of wheat were as follows:

	Subregion			
	89	*90*	*91*	*105*
5-year average yield (1949–1953) (bushels per acre)	16. 5	11. 2	9. 8	18. 0
1954 yield (bushels per acre)	14. 6	8. 0	9. 9	15. 5

The lower than average yields in 1954 for all but one subregion had some effect on the distribution of farmers by economic class of farm.