THE CLIMATIC FACTOR IN WHEAT FARMING ON THE SOUTHERN GREAT PLAINS

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The principal factors controlling land use on the Southern Great Plains are rainiall, evaporation, surface contours, soil fertility, and the prospective market value of the anticipated crops. The most variable of these factors, and the one over which man has no control, is rainfall.

The Southern Great Plains region is centered near the southwest corner of Kansas. It includes more than 100,000 square miles extending into Western Oklahoma, Northwestern Texas, Eastern New Mexico, and Southeastern Colorado.

Many crops in their turn have supplanted native grasses on these plains. Corn, cotton, grain sorghums, oats, barley, and wheat all have been grown with varying degrees of success. Wheat has successfully routed other competitors and emerged as the predominant agricultural crop.

Variability of rainfall distribution is characteristic here. Two successive years seldom receive a similar distribution or amount. Soil characteristics and the rate of evaporation are of such a nature that about twenty inches of rainfall are required annually for successful agriculture. Between 1936 and 1941, the yearly 20 inch isohyet migrated completely across the Southern Great Plains, placing the entire region within a zone of marginal agriculture.

Submarginal crops or complete failures are frequently compensated by a bumper yield of wheat the succeeding year. Within this subhumid region, soil nitrogen becomes available for growing plants in restricted quantities. In contrast to more humid areas, this plant food is not leached away, but accumulates in the soil for future use.

Because of the irregularity and uncertainty of rainfall, wheat seems to be the most adaptable plant after the native grasses have been destroyed. Its growing season extends from late autumn to early summer. It escapes the intense heat of summer and uses the accumulated soil moisture before evaporation becomes excessive. Dry weather during June and July, which may be disastrous to other crops, is ideal for ripening and harvesting wheat.

A favorable profit in comparison to other farm commodities stimulated a steady increase in wheat acreage after World War I, until a high of 30.4 mil-

lion acres was reached in 1937. The blowing dust and crop failures of the early 1930's did not change this trend, as the farmers tried desperately each year to anchor the soil with a new crop of wheat.

The Federal Government inaugurated the Wheat Acreage Allotment Plan in 1937, which succeeded in reducing the area seeded to wheat through the succeeding years to a low of 19.5 million acres in 1943. Restrictions were lifted at this time because of the demands of World War II. Wheat acreage of the Southern Great Plains immediately skyrocketed, reaching 33.5 million acres in 1947. Preliminary reports for 1948 indicate a five per cent increase over last year.

Wheat has proven to be peculiarly adaptable to the variable climate and gentle terrain of the Southern Great Plains. Its yield per acre fluctuates somewhat with rainfall, but dry periods do not tend to reduce the acreage seeded for the following year.

Governmental control has been the only effective means of reducing wheat acreage on the Southern Great Plains. Wheat farming will likely continue to be a major agricultural occupation in spite of occasional droughts, dust storms, and crop failures.