GROWTH OF WHEAT DURING THE HEADING PERIOD

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Agronomists and farmers alike are interested in the growth and development of crops. Those agronomists who observe varieties closely realize the need for more information on habits of growth to assist in interpreting differences in production. The rapid exsertion of the spike from the sheath of wheat at Moscow, Idaho, as compared with the same phenomenon observed in other localities, attracted the attention of the writers and led to the growth study presented herein.

The data were secured in the experimental field of the Agronomy Division of the University of Idaho at Moscow in 1931, 1932, and 1933. The main objects were to determine the daily increase in height of culm, the exsertion of the spike from the sheath, and the relation of growth to blooming in several of the more important winter and spring wheat varieties during the heading stage.

MATERIAL AND METHODS

Ten varieties of fall-sown wheat were used for the experiment in 1931, six (Ridit, Hybrid 128, Mosida, Triplet, Turkey, and Albit) having a winter habit and four (Federation, Baart, Marquis, and Jenkin) a spring habit of growth. Four additional spring varieties (Hard Federation, Vernal emmer, White Polish, and Kubanka) were grown in 1932. In 1933, nine fall-sown and seven spring-sown varieties were used. Only one of the fall-sown spring varieties, Federation, survived the winter with sufficient stand to permit study.

The wheat was sown by hand in 5-foot rows. Plants to be measured were selected to avoid border effect in so far as possible.

Increase in height of the culm from first heading until elongation ceased was determined by daily measurements at the tip of the spike and at the ligule of the top leaf or sheath. Plant measurements were taken on a single culm except in a few cases. With a few exceptions, 10 plants of each variety were measured in 1931 and 1932 and 15 plants in 1933.

First heading, except in the club wheats, was regarded as that stage of development at which the tip of the spike was just emerging from the sheath, or when the tip of the spike and the ligule of the top leaf were at the same level. In the club wheats the spike usually breaks out at the side of the sheath, and for these varieties plants were selected on...