RELATIONS OF GRAZING TO WHEAT SMUT AND TILLERING

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A series of experiments designed primarily to study the effects of seed treatment upon stand and smut control at the Panhandle Agricultural Experiment Station, Goodwell, Oklahoma, has afforded an opportunity for some observations on the effects of seedbed conditions, grazing, and rate of stand upon the amount of stinking smut found in wheat and the tillering of sound and diseased plants. Fifty nursery plats were used in the experiment which consisted of three drill rows each, the plats being 2 feet wide and 10 feet long. The average number of plants per plat was 78.3.

DERIVATION OF VARIABLES

Number of plants per plat.—When harvested, the wheat was pulled up and the plants carefully separated by hand in order to secure a correct count of the number of plants.

Number of heads per plat.—In counting the heads per plat, all heads formed were included regardless of whether they contained grain or not. Separate counts were made of smutted and sound plants.

Soil moisture.—The moisture was determined from single core samples taken from each plat to a depth of 1 foot. Eight of the block divisions were planted under dry farm conditions in which it will be noted a fairly uniform moisture condition prevailed. Two blocks were irrigated immediately after sowing in order to provide excessive moisture conditions during the germination period.

Grazing.—All grazing was done when the topsoil was dry but firm, the soil conditions being considered ideal for the permission of grazing with the least damage to stands. In each case the entire block pastured was cropped close to the ground upon the date indicated, care being taken to trample the plats as little as possible.

Maturity.—The date of maturity was roughly determined from daily notes covering the maturity period from which a date was selected on which the majority of heads were completely turned in color, although in all cases a few of the younger heads remained green. This was especially the case in those plats where maturity was delayed by pasturing.

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