THE RELATION BETWEEN BUSHEL WEIGHT AND MATURITY IN CORN

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MATURITY is extremely important in corn grown under short-season conditions, such as those found in northern Colorado. It would be an advantage to the farmer to be able to detect immaturity in the seed he purchases through some simple test. Work conducted at the Colorado Experiment Station over a 3-year period indicates that the bushel-weight test may be used as an index of maturity in corn. This seems to be the case even though the bushel-weight determinations may be made several months after the corn is harvested.

LITERATURE REVIEW

There has been very little work published on the relation of bushel weight to maturity in corn, although bushel weight is regarded as a quality factor in the federal grain standards (1). These standards require the following minimum bushel weights for grades 1 to 5, inclusive: 54, 53, 51, 48, and 44 pounds, respectively, per Winchester bushel. Lyon and Montgomery (2) early pointed out that deep-kerneled corn varieties grown under short-season conditions would produce comparatively deep but light-weight kernels. The bushel-weight requirements were made to discourage the sale of light-weight corn.

Robertson, et al. (3), reported that weight per measured bushel gave an indication of maturity in corn. They found that corn planted after May 10 gave progressively lower bushel weights after harvest as the season advanced. The corn from the later plantings was immature at the time of harvest. Their average bushel weights over a 4-year period were as follows for the April 20, May 1, May 10, May 20, May 30, and June 10 dates of planting: 57.8, 56.8, 55.2, 54.0, 51.6, and 45.5 pounds, respectively. Higher grain quality, as indicated by the bushel weight, characterized the corn planted at the earlier dates.

MATERIALS AND METHODS

Two field varieties of yellow dent corn, a Golden Glow selection and Pride of the North, were used in the test which was conducted over a 3-year period, 1931 to 1933. The first variety was grown all 3 years, while the second was used only in 1931 and 1933. Both varieties were planted each year between May 1 and 10, the optimum planting time for full-season corn at the Colorado Experiment Station. Golden Glow matured in the field each year on or about September 15, while Pride of the North matured a few days earlier.

Individual ears were harvested at five different dates, 10 days apart. These dates were August 22, September 1, September 11, September 21, and October 1. Sixty ears were harvested consecutively from a random place in the row for each