RELATION OF SIZE OF SAMPLE TO KERNEL-PERCENTAGE DETERMINATIONS IN OATS.¹

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In carrying out the rotation investigation and the varietal test work at University Farm, the farm crops section of the Minnesota station has occasion each year to make a considerable number of determinations of percentage of kernel in oats (a) of the same variety grown in different rotations and (b) of a number of varieties grown under similar soil conditions. For oat varieties, these data are of interest as a basis for comparing true yielding ability and feeding value. Inasmuch as hulling oats by hand is rather expensive, it is highly desirable to minimize the work so far as is compatible with accuracy. The data collected in seeking a solution to this problem are presented herein.

Love (1912)² determined for two crops of oats the bushel weight, the weight per 100 grains, and the percentage of kernel for each of a large number of varieties. The weight per 100 grains was obtained by weighing several composite lots of from 50 to 100 grains and averaging these for each variety. Kernel percentage determinations were made from the weighed samples. Love found a difference of nearly 100 percent in the weight per 100 grains as determined for the different varieties. Comparing the weight per 100 grains within any variety for the 2-year period, the variation was not great. He found a considerable variation in percentage of kernel for the different varieties, but no variety showed a wide variation for the 2-year period.

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² Dates in parenthesis refer to “Literature cited,” p. 142.