RELATION OF SEED SIZE TO THE YIELD OF SMALL GRAIN CROPS

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INTRODUCTION

Studies concerning the relation of seed grades to the grain yields of small grain crops have been so varied and of such long duration at the Nebraska Agricultural Experiment Station that a summary of results would seem to be of general interest. It is the purpose of this paper to develop the principles involved in this problem, and to summarize all the data which are available to date.

The practical significance of such investigations depends upon the degree to which the methods of comparison approach applicability to farm conditions. Those field comparisons are probably of greatest importance which include the practice most commonly in vogue among crop producers. A sound recommendation regarding the principle of the mechanical grading of seed can hardly be made from a mere comparison of extremes. The vital question is, how does the graded compare with the ungraded seed. A matter of only second interest is the comparative performance of relatively light weight seed resulting from unfavorable growth conditions with seed of normal development. Correct information on these points may be of material value to the farmer.

The methods which have been reported in the literature for selecting seed grades may be classified as follows: (1) hand selection, (2) fanning mill separation, (3) specific gravity separation by use of a salt solution, and (4) choice of distinct grades resulting from difference in the favorableness of growth conditions.

The rate of spacing of the seed has varied greatly in different experiments which may be classified as follows: (1) those in which seed are spaced far apart to permit maximum development of individual plants, and (2) those in which seed are planted close, testing the grades in either, (a) equal numbers, (b) equal weights, or (c) equal volumes per acre.

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