THE EFFECT OF UNIFORMITY OF SPACING SEED ON 
THE DEVELOPMENT AND YIELD OF BARLEY

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For the past 25 years investigations have been conducted throughout the United States by numerous workers to determine the optimum quantity of seed required for a given area of land. The large number of separate tests conducted on the problem are ample evidence of a general understanding that the optimum rate of seeding for any crop varies both with the characteristics of the crop (and variety) and the environment in which it is grown. Obviously, the ultimate goal is the complete utilization of the environment by the crop in question, using final yield as the index of that utilization.

In general, the reports of experiments on rates of seeding of small grains for the various regions of the country have indicated that there is a rather definite limit beyond which heavier seeding rates fail to produce increases in yield of crop. Thus, Thatcher (11) has reported the results of continuous tests for 22 years on seeding rates and average yields of winter wheat in Ohio as follows: 3-peck rate, 25.7 bushels per acre; 4-peck rate, 27.3 bushels; 5-peck rate, 27.8 bushels; 6-peck rate, 28.3 bushels; 7-peck rate, 28.3 bushels; 8-peck rate, 29.1 bushels; 9-peck rate, 28.9 bushels, and 10-peck rate, 28.5 bushels.

Under humid conditions, the quantity of seed planted per acre for spring grains, such as barley, usually is larger because of reduced opportunity for tillering, but the principle is similar to that noted for wheat. For example, four years of testing spring barley in Ontario gave the following yields: for 6 pecks of seed, 47.8 bushels; for 8 pecks, 50.3 bushels; and for 10 pecks, 48.5 bushels. It is apparent from these data, which may be taken as representative of that secured with small grains by other workers, that there is no advantage in increasing the average number of plants per unit of area beyond a certain definite limit. The limit itself is determined by the conditions of soil and climate and the characteristics of the crop, but in all cases it represents a condition where the soil and atmosphere are being utilized as completely as possible by the particular variety of the crop planted.

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3Reference by number is to "Literature Cited," p. 533.