EFFECT OF DATE OF SEEDING OF WINTER WHEAT ON PLANT DEVELOPMENT AND ITS RELATIONSHIP TO WINTERHARDINESS

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INTRODUCTION

With the continual advance of winter wheat culture into the northern United States there has come a great demand for wheat strains which are sufficiently hardy to withstand the vicissitudes of the climate, together with the inherent qualities capable of producing high yield and yet meet the demands of the miller. The importance of this problem has attracted the attention of both agronomists and geneticists, with their efforts directed largely in the search of new strains and varieties by hybridization and selection. Until very recently (23) the task of locating winter hardy strains and varieties was a very difficult and time-consuming process, which ended frequently in disappointment. With the development of new methods for measuring the hardiness of a plant, it has become possible to determine with some degree of accuracy the capacity of varieties or strains to withstand cold weather.

Aside from the problem of producing hardy strains, various cultural practices have been employed in the production of winter wheat which have for their aim the ameliorating of plant growth so that the winter mortality may be reduced to the minimum. A review of literature (1, 2, 5, 6, 7, 9, 10, 16, 19, 24) on dates of seeding of winter wheat indicates that the stage of development of the wheat plant previous to the time it enters the dormant condition in the fall is of considerable importance and may determine its survival over winter. These investigations clearly indicate that the date at which winter wheat is sown in the fall greatly affects the winter mortality of the plant as well as the resumption of active growth in the spring. It appears that from a date of seeding standpoint a certain period must elapse from the seeding date till dormancy, during which time the plant must develop in preparation for the winter.

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3Reference by number is to "Literature Cited," p. 464.