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About Journal@rchive

Journal List

Journal/
Society Search

GO

News



Science Links Japan

JST Japan Science and Technology Agency

Japanese journal of crop science

The Crop Science Society of Japan [Info](#) [Link](#)[TOP](#) > [Journal List](#) > [Available Issues](#) > [Table of Contents](#) > [Abstract](#)

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[\[Full-text PDF \(897K\) \]](#) [\[References \]](#)

The Rate of Leaf Emergence and Its Heritability in Wheat

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Abstract:

Using two varieties of wheat with genetically differing leaf lengths, several parameters concerning leaf growth were examined under controlled environmental conditions. Heritabilities for the parameters of leaf growth were calculated based on measurements of F₂ generation of the hybrid between these two varieties. The rate of leaf emergence (i. e., the speed of leaf emergence per unit time or per unit length) was almost the same between the two parent varieties, although the average length of leaf and average number of days required for the emergence of one leaf were different due to the difference in leaf length. Heritabilities for the average length of leaf and for the days required for the emergence of one leaf were 77.7 and 85.2%, respectively. In F₂ generation, however, no correlation was detected between the two characteristics ($r=0.152$). The heritabilities for the speed of leaf emergence per unit time and unit length were 55.5 and 45.2%, respectively, suggesting that the leaf growth rate (speed of leaf growth per unit time and per unit length) can be changed by selection.

Keywords:

Heritability, Leaf emergence, Wheat

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