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Differential Developmental Pattern of Tiller Bud in Rice Cultivars

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Abstract:

The initiation of leaves and the width of tiller buds on rice plants were compared between japonica type cv. Musashikogane, Lemont and indica type cv. IR36, Takanari. The number of initiated leaves was defined by the growth pattern of the leaf primordium. In order to elucidate the relationship between the initiation of the leaves of tiller bud and those of the main stem, the index expressed by the difference in the number of initiated leaves of tiller buds against those of the main stem (DIL) were calculated based on Katayama's concept of the tillering system. The DILs of the N-th tiller bud increased while the number of emerged leaves of the main stem increased from (N+0.5) to (N+1.5), and then became constant. All through this period, the DILs were larger in the indica type than the japonica type at most tillering positions on the main stem. The width of the N-th tiller bud against the diameter of the stem to which the tiller bud was attached was larger in the indica type than the japonica type when the number of emerged leaves of the main stem was N. These results imply that the development of tiller buds in comparison with that of the main stem is faster in the indica type than the japonica type, and these varietal differences of the development of tiller buds occur in the early process of the development of tiller buds.

Keywords:

Leaf emergence, Leaf initiation, Rice, Tiller bud, Varietal difference

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