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Significance of Folwer Differentiation and Development in the Process of Determining Soybean Yield : Relation between the Number of Pods and Flowers

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Abstract:

The soybean cultivar 'Tachisuzunari' was cultivated with 6.3, 12.5 and 25.0 plants per m² in 1992, 1993 and 1994 to elucidate the yield determining process as influenced by the nodal position on the stem and raceme order. Seed yield increased in accordance with increasing density, especially in 1994, due to an increase in the number of pods under higher air temperature and increased hours of sunlight. Negative correlations were found between the number of pods per m², seed per pod, seed size and seed setting. The changing pattern in the number of daily flowers opening was different among years (i.e., in 1994, flowering continued for a long period and the total number of flowers was greatly increased). Flower or pod shedding peaked at the start of pod elongation, irrespective to the plant density and year. The number of pods on the basal raceme order increased with increasing density as compared to the upper raceme orders. The number of pods was closely correlated with total number of floral buds, but not with pod sets. The number of flowers were significantly different among the nodal positions. The pod sets of basal raceme orders were higher than those of upper raceme orders. The total number of floral buds were significantly correlated with the total number of nodes and the number of buds per node. Close correlations were found between the number of buds per node, the number of racemes per node and the number of buds per raceme.

Keywords:

Flowering habit, Number of floral buds, Pod set, Raceme order, Sink abortion, Soybean, Yield

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