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About Journal@rchive

Journal List

Journal/  
Society Search

GO

News



Science Links Japan

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## 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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#### Effects of Soybean Raceme-Order on Pod Set and Seed Growth in Three Cultivars

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#### Abstract:

The characteristics of pod set and seed growth as affected by raceme order were investigated to determine the yield-determining process of soybean. Observations of racemes were made on the 4th, 7th, 10th, 13th and terminal nodes of the main stem of three cultivars (Indeterminate type : Harosoy ; Determinate types : Enrei, Tamahomare). Pod-setting ratio and dry seed weight reduced in higher-order racemes, while the number of seeds in a pod did not vary among raceme orders. The lower seed weight of higher-order racemes was due to the short seed growth period. Compound leaves of secondary racemes enhanced the seed growth but not the pod-setting. With the highest node of determinate types, seed dry weight and rate of dry matter accumulation (RDA) of primary racemes exceeded those of terminal racemes, suggesting that more competition for assimilates among racemes occurred in terminal racemes. The results indicate that, regardless of growth habits, the lower the raceme order, the higher the number of pods and the pod-setting ratio. Seeds derived from lower-order racemes accounted for the majority of the yield. Hence, pod-setting and seed growth of lower-order racemes are more important than those of higher-order racemes in determining soybean yield.

#### Keywords:

Dry seed weight, Inflorescence, Pod-setting ratio, Raceme order, Soybean (*Glycine max* (L.) Merr.)

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