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## Pod Setting Pattern during and after Low Temperature and the Mechanism of Cold-Weather Tolerance at the Flowering Stage in Soybeans

[Hideki Kurosaki](#)<sup>1)</sup>, [Setsuzo Yumoto](#)<sup>1)</sup> and [Isao Matsukawa](#)<sup>1)</sup>

1) Tokachi Agricultural Experiment Station

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**Abstract:** The effects of short-term exposure to a low temperature [two weeks, at 18°C/13°C(day/night)] and long-term exposure to a low temperature [four weeks, at 18°C/13°C(day/night)] from the beginning of flowering on pod setting were examined in one of the most cold-weather tolerant variety cv. Hayahikari and a standard sensitive variety cv. Toyomusume.

The short-term exposure to a low temperature did not decrease the total number of pods even in Toyomusume. However, pod setting ability during the low temperature exposure was higher in Hayahikari than in Toyomusume. After the short-term exposure to a low temperature, pod setting showed recovery from the cold-weather damage by compensative pod setting after the low temperature treatment in both varieties. The long-term exposure to a low temperature significantly decreased the total number of pods in Toyomusume. But Hayahikari showed a greater capacity for pod setting during the low temperature. And the mechanism of tolerance was related to a superior fertilization ability during the low temperature.

**Keywords:** [Cold-weather tolerance](#), [Fertilization](#), [Flowering stage](#), [Low temperature](#), [Pod setting pattern](#), [Pollination](#)



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