

Author: [ADVANCED](#)Volume Page Keyword: [TOP](#) > [Available Issues](#) > [Table of Contents](#) > [Abstract](#)

ONLINE ISSN : 1349-1008

PRINT ISSN : 1343-943X

Plant Production Science

Vol. 11 (2008) , No. 2 178-183

[\[PDF \(635K\)\]](#) [\[References\]](#)

Effects of Day Length and Air Temperature on Stem Growth and Flowering in Sesame

[Tadashi Kumazaki](#)¹⁾, [Yuko Yamada](#)²⁾, [Shusaku Karaya](#)²⁾, [Takashi Tokumitsu](#)²⁾, [Tatsuya Hirano](#)²⁾, [Satoko Yasumoto](#)³⁾, [Masumi Katsuta](#)³⁾ and [Hiroyasu Michiyama](#)²⁾

1) Graduate School of Agriculture, Meijo University

2) Faculty of Agriculture, Meijo University

3) Department of Field Crop Research, National Institute of Crop Science

(Received: January 24, 2007)

Abstract: The effects of day length and air temperature on the growth and flowering of sesame (*Sesamum indicum* L.) were examined to analyze the effect of seeding date on the seed yield. Short day (10-h light/14-h darkness) treatment decreased the final stem-length relative to natural day length (14.1—13.4-h), although it hardly affected the length of the stem-elongation period. The short-day treatment shortened the duration to the first flower and lowered the first flowering-node. It prolonged the flowering period, but decreased the flowering-node number on the main stem resulting from the slower rate of increase in nodes with flowers. Under a low day/night temperature condition (23/18°C), the stem growth was very slow and flowering did not occur. As compared with a high temperature (30/23°C), a low temperature (22/15°C) during 15 days after emergence suppressed the seedling growth temporarily, but the seedlings resumed growth after the temperature treatment. The growth and flowering behavior after the treatment were unaffected by a low temperature during the seedling stage. On the other hand, a low temperature during the flowering period decreased the flowering-node number resulting from the slower rate of increase in nodes with flowers, although it prolonged the flowering period. In this study, the decrease in the flowering-node number by short days and low temperature was smaller than that by delay of seeding date as observed in our previous study. Thus, the effects of day length and air temperature were not the sole factors responsible for the effect of seeding date on the flowering-node number.

Keywords: [Flowering](#), [Growth](#), [Sesame](#), [Short day length](#), [Temperature](#)

To cite this article:

Tadashi Kumazaki, Yuko Yamada, Shusaku Karaya, Takashi Tokumitsu, Tatsuya Hirano, Satoko Yasumoto, Masumi Katsuta and Hiroyasu Michiyama: "Effects of Day Length and Air Temperature on Stem Growth and Flowering in Sesame". *Plant Production Science*, Vol. **11**, pp.178-183 (2008) .

doi:10.1626/pps.11.178

JOI JST.JSTAGE/pps/11.178

Copyright (c) 2008 by The Crop Science Society of Japan

