

HOME

About Journal@rchive

Journal List

Journal/
Society Search

GO

News



Science Links Japan

JST Japan Science and Technology Agency

Japanese journal of crop science

The Crop Science Society of Japan [Info](#) [Link](#)[TOP](#) > [Journal List](#) > [Available Issues](#) > [Table of Contents](#) > [Abstract](#)

ONLINE ISSN: 1349-0990

PRINT ISSN: 0011-1848

Japanese journal of crop science

Vol.65 , No.2(1996)pp.277-281

[\[Full-text PDF \(623K\) \]](#) [\[References \]](#)

Grain Filling Mechanisms in Spring Wheat : IV. Effects of shadings on number and size of spikes, grains, endosperm cells and starch granules in wheat

Tadashi TAKAHASHI and Toshinari KANAZAWA

1) Faculty of Agriculture, Hokkaido University:(Present address)Faculty of Agriculture, Yamaguchi University

2) Faculty of Education, Iwate University

[Received: 1995/05/29]

[Published: 1996/06/05]

[Released: 2008/02/14]

Abstract:

Changes in the number and size of spikes, grains, endosperm cells and starch granules was examined in relation to the limited assimilates caused by shading treatments. Spring wheat canopy (*Triticum aestivum* L. cv. Haruyutaka) was covered with a 95% shading cloth so as to cause failure in the assimilation at the initial, early and late grain filling phases; initial shading, from two days before anthesis until seven days after anthesis; early shading, from seven days until 14 days after anthesis; and late shading, from 14 days until 21 days after anthesis. The grain yield decreased (11% as compared to no shading) due to a decrease in the number of grains (17%), especially decreasing (62%) at the third floret position in the initial shading, while a decrease of one grain weight at all floret positions resulted in 20% and 16% decreases in the grain yield in early and late shadings, respectively. The reduction of grain weight was not due to a decrease in the number of endosperm cells, but to a decrease in the size of large starch granules. Differences in the effects of shading on changes in sink characters could be explained in terms of the physiological process of grain formation.

Keywords:

Endosperm cell, Floret position in spikelet, Grain filling phase, Grain yield and yield component, Shading, Sink formation, Spring wheat, Starch granule

[\[Full-text PDF \(623K\) \]](#) [\[References \]](#)

