

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.64 , No.3(1995)pp.601-606

[\[ Full-text PDF \(648K\) \]](#) [\[ References \]](#)

#### Differences in Amylose Content, Amylographic Characteristics and Storage Proteins of Grains on Primary and Secondary Rachis Branches in Rice

Yuji MATSUE, Koji ODAHARA and Michikazu HIRAMATSU

- 1) Fukuoka Agricultural Research Center
- 2) Fukuoka Agricultural Research Center
- 3) Faculty of Agriculture, Kyushu University

[Received: 1994/10/31]

[Published: 1995/09/05]

[Released: 2008/02/14]

#### Abstract:

The amylose content, amylographic characteristics and storage proteins of milled rice grains on the primary and secondary rachis branches were investigated. The amylose content of grains on the primary rachis branches with superior palatability was higher than that on the secondary rachis branches. Grains on the primary rachis branches showed higher maximum viscosity and breakdown values, and lower gelatinization temperature than those on the secondary rachis branches. These results suggested that the palatability of cooked rice of grains with high amylose content and amylogram values was superior to that with low amylose content and amylogram values within a cultivar under the same cultural conditions. In terms of protein fraction in the starchy endosperm, there was little difference in prolamin content and in albumin + globulin content between grains on primary and those on secondary rachis branches, whereas total protein content and glutelin content of grains on the primary rachis branches were noticeably lower than those on the secondary rachis branches for all the cultivars. Total protein, glutelin and prolamin content of a good palatability cultivar, Koshihikari were lower than those of moderate palatability cultivars Nipponbare and Reihou. These results indicate that, among storage proteins, glutelin and prolamin play important roles in rice palatability and that it is possible to use glutelin as an indicator of palatability within a single cultivar and prolamin as an indicator of palatability among cultivars.

#### Keywords:

Amylographic characteristics, Amylose, Glutelin, Palatability, Prolamin, Rachis branch, Storage proteins, Rice

[\[ Full-text PDF \(648K\) \]](#) [\[ References \]](#)

