# [P4] Crop Genetics and Physiology

Thu. Sep 9, 2021 12:15 PM - 2:00 PM Room 4 (Poster) (Crop Genetics and Physiology)

12:15 PM - 1:00 PM

## [P4-21]Morphological Characteristics Related to the Accumulation of Non-Structural Carbohydrates in Stems of Rice at Heading Stage

*Nominated for Presentation Awards

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Non-structural carbohydrates (NSC) stored in stems before heading are the important carbohydrate source for the grain development of rice. In the present study, the dynamics of NSC were analyzed in each part of stems to clarify the morphological factors related to the NSC accumulation in stems at heading stage.

Field experiments were conducted in two consecutive years using "Tequing (*O. sativa* L. spp. *indica*)" and "Momiroman (*O. sativa* L. spp. *japonica*)", which have different accumulation patterns of NSC in stems. From the day of young panicle formation, internodes and leaf sheaths of main stem were divided into five parts based on the node, and internode length, culm diameter, leaf sheath length, and NSC content were measured.

In both varieties, NSC stored in leaf sheath until about 10 days before heading were preferentially used for the elongation of $1^{st}$ and $2^{nd}$ internode than that of $4^{th}$ and $5^{th}$ internodes. The amounts of stem NSC in heading stage were larger in "Tequing" than in "Momiroman". Compared to "Momiroman", length and culm diameter of $4^{th}$ and $5^{th}$ internodes were larger, while length of $1^{st}$ and $2^{nd}$ internodes were shorter in "Tequing". In the case of Momiroman with long upper internodes, NSC accumulation in stems tended to be suppressed for about 10 days before heading. From our studies, it was considered that rice varieties with larger lower internodes and shorter upper internodes are suitable for increasing NSC accumulation in stems at heading stage.