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## Enhanced Adaptability and Optimal Transplanting Date of Mid-Late Maturing Rice Cultivar in Mid-Northern Inland and Mid-mountainous Regions of South Korea

Shingu Kang<sup>1\*</sup>, Woonho Yang<sup>1</sup>, Dae-Woo Lee<sup>1</sup>, Mi-Jin Chae<sup>1</sup>, Jong-Seo Choi<sup>1</sup>, Ho-Seob Soh<sup>2</sup>, Youn-Sang Cho<sup>3</sup>, Ye-Ji Yoon<sup>3</sup>, Chae-Young Lee<sup>4</sup>, Ye-Seul Choi<sup>4</sup>, Hyang-Mi Park<sup>1</sup>

<sup>1</sup>National Institute of Crop Science, RDA

<sup>2</sup>Gyeonggi-do Agricultural Research and Extension Services

<sup>3</sup>Gangwon-do Agricultural Research and Extension Services

<sup>4</sup>Chungbuk Agricultural Research and Extension Services

### [Introduction]

A 5-year experiment of transplanting date was conducted from 2018 to 2022 to with the aim of evaluating the adaptability of mid-late maturing rice cultivars in the Mid-Northern Inland and Mid-mountainous regions of South Korea and determining the optimal transplanting dates. Historically, mid-late maturing cultivars were not recommended in these regions due to lower temperatures, which led to low and unexpectable grain yield.

### [Materials and methods]

The experiment aimed to evaluate the optimal transplanting dates for three rice cultivars representing early, mid, and mid-late maturing varieties: Odae (early-maturing), Cheongpum (mid-maturing), and Samkwang (mid-late maturing) at 3 sites that classified into two rice cultivation regions. The study involved transplanting 30-day-old seedlings of each cultivar at 4-5 different time points, with a 10-day interval between transplanting events.

### [Results and discussion]

As a result of global warming, temperatures have increased, enabling mid-late maturing cultivars to adapt to these regions. The study focused on the mid-late maturing rice cultivar, Samkwang, which demonstrated a higher head rice yield compared to early and mid-maturing cultivars. Updated transplanting dates have been proposed for mid-late maturing rice varieties in these regions, and the successful cultivation of Samkwang suggests that other mid-late cultivars could potentially be adapted to these areas as well. The introduction of mid-late maturing rice varieties can provide significant benefits to rice farmers in the regions, contributing to improved agricultural productivity and food security under changing climatic conditions.

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\*Corresponding author: E-mail, sgkang82@korea.kr Tel. +82-31-695-4133