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## Evaluating the agronomic characteristics and yield variations of ‘Saemimyeon’ by changing transplanting and harvesting time

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### Abstract

‘Saemimyeon’ a Tongil-type rice variety (Indica x Japonica), which contains high amylose contents is suitable for rice noodle production. Nowadays, the major parts of rice processing industry that includes products like rice flour and noodles are expected to partially replace wheat flour market. The volume of rice noodle market is getting bigger and can contribute to the rice surplus and farmer’s income. This study was carried out to promote productivity and flour-making quality of ‘Saemimyeon’ by finding the most suitable transplanting and harvesting times. The transplanting days used were May 10<sup>th</sup>, May 17<sup>th</sup>, May 24<sup>th</sup>, May 31<sup>th</sup>, June 7<sup>th</sup> and June 14<sup>th</sup> and the planting distance used was 30 x 12cm. In addition, harvesting time was determined by days after heading time (40, 45, 50, 55 and 60 days). The field experiment was conducted at the experimental field in Miryang (Southern plain area of Korea) from 2015 to 2016. Our results suggest that the optimum transplanting days were from May 24<sup>th</sup> to May 31<sup>th</sup> which resulted to an average yield of 748~751kg/10a. Interestingly, yield was sharply decreased below 700kg/10a before May 10<sup>th</sup> and after June 7<sup>th</sup>. The average grain filling rate before May 31<sup>th</sup> was more than 83% but it declined to 75% after June 7<sup>th</sup>. The average temperature ranges from heading time to harvesting time was 21~25°C and the estimated optimal temperature was 23.4°C which is similar to May 24<sup>th</sup> by regression equation. We found that the optimal harvest time was 45~50 days after heading time. It is hypothesized that low temperature at seed maturation time caused the lower grain filling rate therefore ‘Saemimyeon’ need to be transplanted before May 31<sup>th</sup> for higher productivity. We found no statistical variation in amylose contents among experimental plots (28.2~30.4%). We conclude that the productivity of ‘Saemimyeon’ highly depends on temperature that is critical for grain filling stage controlled by transplanting time.

Keywords: cultivation system, grain filling rate, high yielding rice, rice noodle, temperature

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