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Changes in Rice Yield and Quality According to the Levels of Phosphate and Potassium Fertilization Under Reduced Nitrogen Fertilizer Condition

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[Abstract]

In order to investigate changes in rice yield and quality according to phosphate and potassium fertilization levels when nitrogen fertilizer was applied at $7 \text{ kg} \cdot 10\text{a}^{-1}$, a field experiment was conducted at National Institute of Crop Science of Korea in 2021. Three Korean rice varieties were grown in paddy fields, and phosphate and potassium fertilizer were treated at three levels (N-P-K $7-4.5-5.7 \text{ kg} \cdot 10\text{a}^{-1}$, $7-3-3 \text{ kg} \cdot 10\text{a}^{-1}$, $7-0-0 \text{ kg} \cdot 10\text{a}^{-1}$). When phosphate and potassium fertilizers were not treated, the yield of Ilpum and Chilbo was significantly reduced, and there was no significant difference in Hopyung. The head rice ratio was significantly lower in the untreated plot of Hopyung and Chilbo, but there was no significant difference in the Ilpum. Protein content was significantly decreased in the untreated plot of Chilbo, and there was no significant difference in other varieties.

As a result of this study, it was confirmed that yield, head rice ratio, and protein content were lowered when phosphate and potassium fertilizers were not treated, and the degree of decrease was different depending on the variety.

[Acknowledgement]

본 연구는 농촌진흥청 연구사업(사업번호: PJ013487)의 지원에 의해 이루어진 결과로 이에 감사드립니다.

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