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Analysis of Nationwide Soil Chemical Trait for the Application of Standard Nitrogen Level in Rice Cultivation

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[Abstract]
When 7 kg·10a^{-1}, which is less than the nitrogen standard application amount of 9 kg·10a^{-1}, is applied, the protein content is lowered and the palatibility is improved. In order to examine the applicability of nitrogen fertilization of 7 kg·10a^{-1} nationwide, soil samples were collected from 240 paddy fields in 8 provinces in 2021, and the organic matter content, effective phosphoric acid, and effective silicic acid were analyzed for each sample. As a result of one-way ANOVA analysis between samples collected for each province, there was no significant difference in the content of organic matter, effective phosphoric acid, and effective silicic acid except for some provinces. The contents of organic matter was higher than the appropriate level(25 ~30 g·kg^{-1}) except for Gyeongsangbuk-do, the effective phosphoric acid was higher than the appropriate level(80 ~120 mg·kg^{-1}) in all provinces, and the effective silicic acid was lower than the appropriate level(157 ~180 mg·kg^{-1}) except for Gyeonggi-do, Jeollanam-do and Gyeongsangnam-do. As a result of analyzing the recommended fertilization amount based on the nitrogen application amount of 7 kg·10a^{-1}, 68.3% of the 240 samples were able to give nitrogen fertilizer less than 7.5 kg·10a^{-1}, and the rest had to be given more than that to satisfy the standard fertilization amount.
As a result of this study, 68.3% of rice paddies nationwide can be cultivated with a standard fertilization amount of 7 kg·10a^{-1}, however it was thought that continuous nutrient management would be required for other paddies.

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