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Phosphate uptake and agronomic characteristics in *OsPT* transgenic rices

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Objectives

We have generated transgenic rice over-expressing each *OsPT* (*Oryza sativa* phosphate transporter) by *Agrobacterium* mediated transformation. And we tried to investigate the Pi uptake and agronomic characteristics of these transgenic lines in the P-deficient paddy soils.

Materials and Methods

1. Material

Plant - *OsPT* transgenic rices over-expressing each *OsPT1*, *OsPT4*, *OsPT7*, and *OsPT8* gene cv. Dongjinbyeo.

2. Methods

Pot experiments were carried out to analyze the characteristics of phosphate uptake and agronomic traits in the P-deficient paddy soils.

Results and Discussion

We have analyzed total phosphate and nitrogen contents of the *OsPT* transgenic rice plants in the harvesting stage at P-sufficient paddy soil. Total phosphate content in the *OsPT* transgenic rice was 39~57% higher than that of non-transgenic rice. But the content of total nitrogen in the *OsPT* transgenic rice was 13~53% lower than that of wild type in the field condition.

Currently, we are processing investigation of the response of these transgenic lines in Pi deficient soils. The plant height of these transgenic lines at twenty days after transplanting was 12~32% higher than that of wild type, Dongjinbyeo. Further analysis of phosphate contents in these transgenic lines at P-deficient soil should be investigated. This study may provides the possibilities of practical uses for these transgenic lines.

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