

A2 Change of SOD · POD activity on leaves in Rice
(*Oryza sativa* L.) Varieties at the Nitrogen application level
 Konkuk Univ. : J. O. Lee · I. M. Chung* · J. K. Ahn · K. H. Kim

벼 (*Oryza sativa* L.) 품종의 질소시비수준에 따른 잎의 SOD · POD 활성 변화
 건국대학교 : 이진옥 · 정일민* · 안종국 · 김광호

OBJECTIVES

To test antioxidative activity by the two methods of antioxidative activity in Korean native and foreign rice varieties at the nitrogen application level.

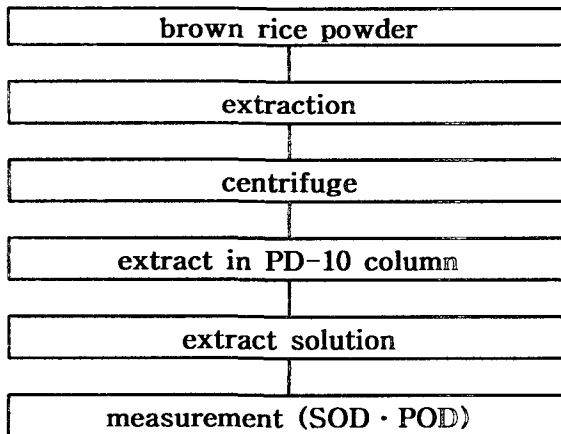
MATERIALS AND METHODS

MATERIALS

- Korean native rice varieties (seven) and foreign rice varieties (ten).
- Nitrogen application level (50%, 100%, and 150%)

METHODS

- Antioxidative Activity Test



RESULT AND DISCUSSION

- In SOD activity, AC 1423 (colored foreign rice, mean 12.8%, 14.5%, and 16.3%) was the highest value at first heading in all N application level.
- In POD activity, Tono Brea 439 (common foreign rice, mean 93.9%, 96.2%, and 96.3%) was the highest value at first heading in all N application level.

Table 1. Comparison of SOD activity on leaves in Korean native and foreign rice varieties at the nitrogen application level.

N-application level	Type	1st [♠]	2nd [♢]	3rd [♣]
-----Activity (%) -----				
50%	Colored rice	8.6b	8.1	7.8
	Common rice	10.8a	9.0	9.5
CV (%)		56.7	53.6	74.0
LSD (0.05)		2.24	1.82	2.51
100%	Colored rice	9.7	7.2b	7.8
	Common rice	10.2	10.1a	7.8
CV (%)		54.7	49.8	67.1
LSD (0.05)		2.19	1.67	2.09
150%	Colored rice	10.5	7.8	7.7b
	Common rice	12.9	9.3	10.0a
CV (%)		59.3	57.1	61.0
LSD (0.05)		2.73	1.92	2.10

♠, first heading; ♢, heading stage; ♣, full heading

Table 2. Comparison of POD activity on leaves in Korean native and foreign rice varieties at the nitrogen application level.

N-application level	Type	1st [♠]	2nd [♢]	3rd [♣]
-----Activity (%) -----				
50%	Colored rice	93.6	92.6	92.7
	Common rice	94.1	93.5	92.4
CV (%)		2.9	3.5	3.0
LSD (0.05)		1.08	1.32	1.12
100%	Colored rice	94.7	91.0b	91.5
	Common rice	94.9	93.6a	91.9
CV (%)		2.5	6.2	8.8
LSD (0.05)		0.94	2.28	3.23
150%	Colored rice	94.0	91.3	91.4b
	Common rice	94.3	93.3	93.3a
CV (%)		3.4	5.9	3.2
LSD (0.05)		1.29	2.18	1.19

♠, first heading; ♢, heading stage; ♣, full heading