

111. 생장조절제 HOE78784가 벼 도복에 미치는 영향

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Effect of the New Plant Growth Regulator HOE78784 on Lodging in Rice

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To determine the plant growth regulator that can prevent lodging and examine the relationship between lodging resistance and specific morphological characters.

The experiment was conducted in IRRI using IR36, IR42, IR64 and IR21820-154-3-2-2-3. The experiment was laid out in a split-plot design with four replications, with the rice variety as the main plot and application time as the subplot. Plots measured 5.5x3.75 m with hill spacing at 20x20 cm. Hoe 78784 was applied at 30 DAT, booting and heading stage at different concentration.

Hoe 78784 at 150 kg ai/ha prevented lodging and significantly increased grain yield of IR 21820-154-3-2-2-3 when applied at booting stage. But when applied at 30 DAT, Hoe 78784 gave significantly shorter panical and, consequently, low grain yields in all varieties, although resistance to lodging was increased. Further, internode length was reduced. Hoe 78784 applied at heading did not increase yield nor did it prevent lodging. K and Si content were higher than control when Hoe 78784 was applied at booting stage.

Table 2. Lodging percentage of test rices as affected by Hoe 78784 application in different concentrations and timing. IRRI, 1986 WS.

CONCENTRATION (g ai/ha)	APPLICATION TIME	LODGING (%) <sup>a</sup>			
		IR36	IR42	IR64	IR21820-154- 3-2-2-3
150	Booting	0 a	0	0	8 bc
150	Heading	20 b	0	0	16 bc
300	30 DT	0 a	0	0	0 a
300	Booting	0 a	0	0	4 ab
300	Heading	16 b	0	0	18 c
Control		20 b	0	0	60 d

<sup>a</sup>In a column, treatment means having a common letter(s) are not significantly different at the 5% level by DMRT.

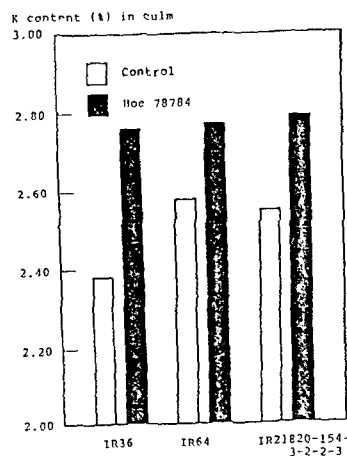


Fig. Culm K content of three rices as affected by Hoe78784. Within a variety or line, bars with a common letter are not significantly different at the 5% level by DMRT.

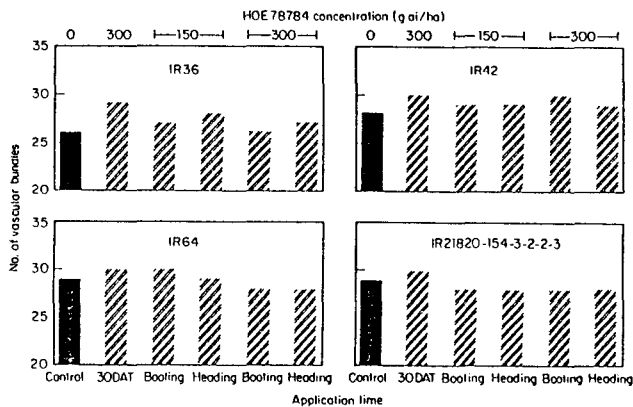


Fig. 1. Number of vascular bundles of third internode of four rices as affected by Hoe 78784 application in different concentrations and timing. IRRI, 1986 US.

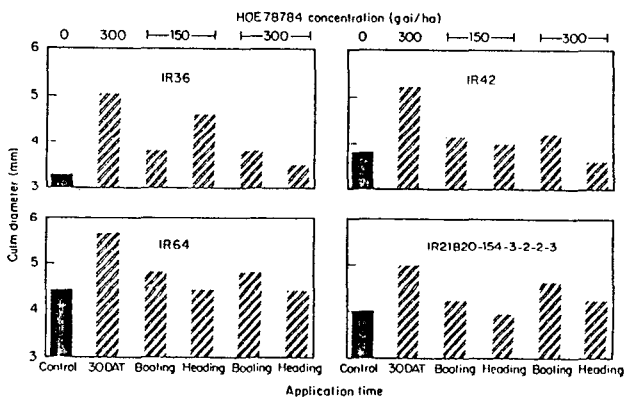


Figure. 2. Culm diameter of third internode of four rices as affected by Hoe 78784 application in different concentrations and timing. IRRI, 1986 US.

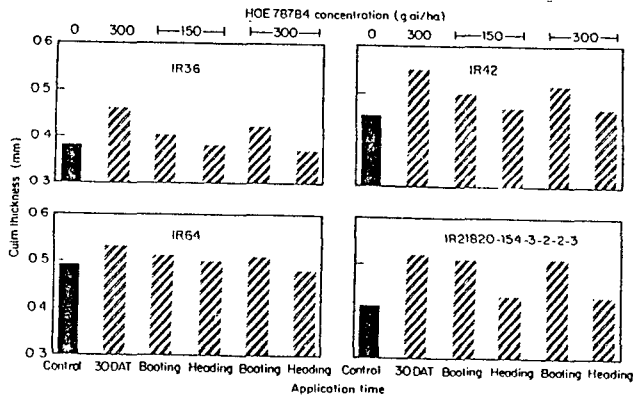


Figure. 3. Culm thickness of third internode of four rices as affected by Hoe 78784 application in different concentrations and timing. IRRI, 1986 US.

Table. Grain yield of test rices as affected by Hoe 78784 application in different concentrations and timing. IRRI, 1986 US.

CONCENTRATION (g ai/ha)	APPLICATION TIME	GRAIN YIELD (t/ha) <sup>a</sup>	
		IR36	IR21820-154-3-2-2-3
150	Booting	3.3 a	4.5 ab
150	Heading	3.2 ab	4.7 a
300	30 DT	2.8 b	3.8 c
300	Booting	3.1 ab	4.0 c
300	Heading	3.1 ab	4.2 bc
Control		3.1 ab	4.2 bc
		3.7 ab	3.5 b
		4.0 a	3.9 ab
		3.5 b	4.1 a
		3.8 a	3.8 ab

<sup>a</sup>In a column, means having a common letter(s) are not significantly different at the 5% level by DMRT.

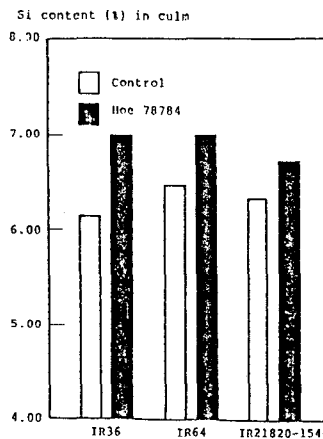


fig. 4. Culm Si content of three rices as affected by Hoe78784. Within a variety or line, bars with a common letter are not significantly different at the 5% level by DMRT.