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EFFECT OF PHOSPHORUS AND LIME APPLICATION ON RICE VARIETY -I. R. 8.

Experiments conducted elsewhere with high yielding varieties have shown positive response to phosphorus application: (Mahapatra 1969) Liming is also reported to influence the availability and uptake of phosphorus. Hence, an investigation was conducted to study the effect of graded doses of phosphorus and lime on I. R. 8 under the Veilayani conditions during 1968. The treatments consisted of 4-levels of P_2O_5 (0, 50, 100, 150 kg/ha) and 2-levels of lime (0, 3275 kg/ha) fitted in a randomised block design. Lime was given based on lime requirement. Nitrogen and potash were applied at 136 and 90 kg/ha respectively in addition to 5000 kg/ha of Farm yard Manure,

Results presented in Table 1 show that phosphorus and lime had no effect on tiller production. Percentage of filled grains was not influenced by phos-

Table 1

Effects of levels of P_2O_5 and lime on yield attributes of I. R. 8.

Treatments	Tillers/hill			% productive tillers			% of filled grain			1000 grain weight		
	C ₀	C ₁	Mean	C ₀	C ₁	Mean	C ₀	C ₁	Mean	C ₀	C ₁	Mean
0 kg P_2O_5 /ha	7.1	6.8	7.0	74.6	72.1	73.3	92.1	95.0	93.5	31.10	31.99	31.55
50 kg P_2O_5 /ha	6.4	6.4	6.4	70.7	70.7	70.7	92.5	95.3	93.9	32.09	32.07	32.03
100 kg P O /ha	7.5	6.7	7.1	71.9	71.3	71.6	93.6	95.8	94.7	31.66	32.39	32.03
150 kg P_2O_5 /ha	6.8	7.7	7.3	72.8	78.8	75.8	93.3	95.3	94.2	31.90	31.87	31.89
•Mean	7.0	6.9		72.7	73.2		92.9*	95.3*		31.69*	32.08*	—

*C. D. at 5% between levels of C

1.21

0.30

C₁ = 3273 kg/lime/ha.

phorus while calcium had a significant influence on this character. Calcium also significantly increased 1000 grain weight. The grain and straw yield presented in Table 2 reveals that there is no response to phosphorus. The lack of response to added phosphorus might be attributed to the adequate amount of available phosphorus present in the soil (36 kg P_2O_5 /ha) It is also likely that flooding would have brought about solubility of native phosphorus, (Basak and Bhattacharya-1962). However, calcium gave a significant increase in grain yield probably due

Table 2

Effect of levels of P_2O_5 and lime on yield of I. R. 8

Treatments	Straw yield kg/ha			Grain yield kg/ha		
	C ₀	C ₁	Mean	C ₀	C ₁	Mean
0 kg P_2O_5 /ha	2224	2058	2141	1780	1952	1866
50 kg P_2O_5 /ha	1990	2085	2038	1830	2000	1915
100 kg P_2O_5 /ha	2168	2219	2194	1875	2025	1950
150 kg P_2O_5 /ha	1988	2167	2078	1775	2007	1891
Mean	2093	2132	—	1815*	1996*	—

*C. D. at 5% between levels of C

101

C₁ = 3273 kg lime/ha.

to its beneficial effect on yield attributes such as percentage of filled grain, and 1000 grain weight, as revealed in Table-1.

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