

Azolla growth in mud pots in summer, Tamil Nadu, India.

Pot capacity (litre)	Pot surface area (cm ²)	Mean azolla growth in water (g)	Mean azolla growth in soil extract (g)
2	176.8	21	23
3	314.3	23	25
5	452.6	25	26
8	616.0	14	19
10	804.5	13	14
CD		1.867	2.146

storage (see figure). The mud pots were made of fine alluvial soil and fired for 3 to 4 d. Similar pots are used to store and cool water in the local villages.

The soil extract was prepared by mixing 1 kg of clay soil with 1 litre of water and then filtering through muslin, Five ppm superphosphate was added to water and 10 ppm to soil with 20 ppm of carbofuran and carbendazim. Each pot

was inoculated with 20 g fresh azolla fronds, and kept in sunlight. Temperature was 35 to 39 °C. The biomass was recorded 10 d after inoculation. The 3- and 5-litre pots encouraged azolla growth (see table). Black rot developed in 8- and 10-litre pots because of the cooling effect. Pots with soil extract solutions were best for azolla maintenance at high temperatures. □

Yield response of rice to phosphorus

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We studied yield response of rice to P application at the Government Seed Farm, Rakh Mangan, in Dera Ismail Khan. Soil was a clay with 15% CaCO₃, pH 7.7, 0.8% organic matter, 5 ppm Olsen P, 150 ppm available K, and 0.04% N. Pretreatments were 0, 10, 20, or 30 ppm of fertilizer P to ensure that soils varied in initial available P content.

P treatments were in a randomized complete block design with 3 replications in 5- × 2-m plots. P was thoroughly mixed into the surface soil with basal doses of N and K. Plant height, panicles/m², and grain and straw yield were recorded and a combined analysis of the data was done by keeping soil types in main plots and P treatments in subplots.

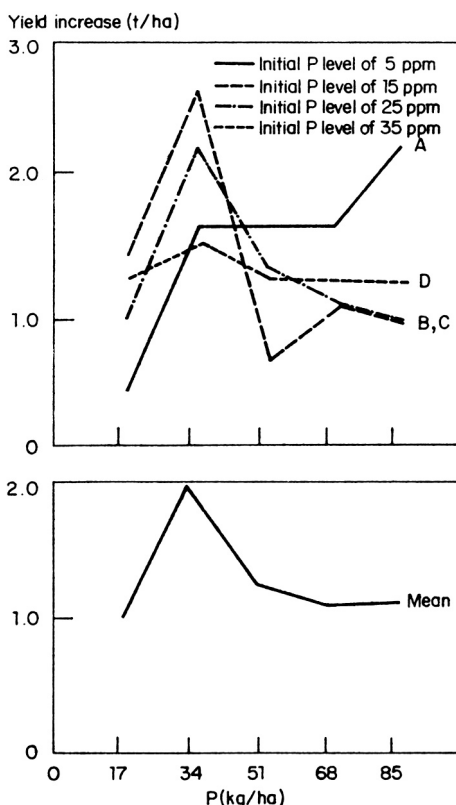
Rice yielded significantly highest (7.4 t/ha) with 34 kg P/ha + NK (see table). Soil and treatment interactions also were significant. Straw yield and plant height were not significantly affected by P. Effect on number of panicles/m² was significant, and highest at 85 kg P/ha. The response to P treatment at initial soil P level was somewhat linear. As the initial soil P level increased, response to P treatment beyond 34 kg P/ha decreased (see figure). □

Response curves of P for rice at different initial soil P levels, Dera Ismail Khan, Pakistan.

Yield response of rice to P, Dera Ismail Khan, Pakistan.

Treatment (kg/ha)			Grain yield (t/ha) at P content of				Mean yield (t/ha)	Mean straw yield (t/ha)	Mean panicles/m ²	Mean plant height (cm)
N	P	K	5 ppm	15 ppm	25 ppm	35 ppm				
0	0	0	4.4	4.1	4.8	3.3	5.1 d	7.7 b	248 c	100
100	0	75	5.5	5.1	5.5	5.5	5.4 c	12.4 a	325 ab	111
100	17	75	5.9	6.5	6.5	6.7	6.4 b	13.1 a	305 b	109
100	34	75	7.1	7.7	7.7	7.0	7.4 a	12.8 a	320 ab	111
100	51	75	7.1	6.1	6.8	6.7	6.7 b	12.9 a	320 ab	114
100	68	75	7.1	5.8	6.5	6.7	6.5 b	13.4 a	301 ab	115
100	85	75	7.7	5.5	6.4	6.7	6.6 b	13.7 a	331 a	112
Mean			6.40 a	5.82 b	6.31 ab	6.08 b				
Fertilizer					Significant			Significant	Significant	ns
Interactions					Significant			ns	Significant	ns
(fertilizer × soils)										
Soils					Significant			ns	ns	ns

Means followed by similar letters do not differ significantly from one another.



Management of aged seedlings of medium-duration rices

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We studied the response of 50-d-old IR20 seedlings in a factorial randomized block

Management of 50-d-old IR20 seedlings, Aduthurai, India, 1983-84 thaladi.

Basal N (kg/ha)	Grain yield (t/ha)		
	10 × 10 cm	15 × 10 cm	20 × 10 cm
50	3.0	2.8	2.9
62.5	3.1	3.0	3.1
75	3.3	3.4	3.7
Mean	3.1	3.1	3.2

CD (P = 0.05)

Spacing : NS
Nitrogen : 0.34
S × N : 0.58