

Soil and Crop Management

Sources and methods of N application for drilled, rainfed lowland rice

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We evaluated sources and methods of N application for rainfed lowland rice on a clay loam soil at Raipur Research Farm (see table). Soil had pH 6.7 and 0.65% organic carbon. Sumridhi (R-2384), a 125-d, gall midge-resistant variety, received 40 kg N/ha in all treatments.

The number of panicles/m² was not significantly affected by treatments. However, panicles/m² and grain yield were maximum with urea supergranules (USG) placed manually between alternate rows under shallow water after first weeding or 30 d after seeding (DS), followed by urea applied in a single dose

Grain yield and panicles of rice with different N application methods, Raipur, India.

Treatment	Panicles/m ² (no.)	Grain yield (t/ha)
No N (control)	215	1.8
Urea broadcast and incorporated as basal dose before seeding	232	2.0
Urea applied in plow furrow and seed drilled in alternate rows	250	2.0
USG applied in plow furrow and seed drilled in alternate rows	255	2.2
Urea and seed drilled in same furrow	251	2.1
USG and seed drilled in same furrow	251	2.1
Urea applied in single dose after first weeding, before land submergence	258	2.2
USG placed manually between alternate rows under shallow water, after first weeding	267	2.4
CD (0.05)	ns	0.3

after first weeding. Applying N 30 DS was more effective than application at seeding. Applying urea at seeding gave

yields equivalent to those of the no N check plot, indicating the magnitude of N loss. *J*

Effect of nursery bed nutrient management and seed treatment on rice grain yield

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We studied the effect of nursery bed nutrient management and seed treatments in a sandy loam soil. Test varieties were TKM9 and IR20. The experiment was in a factorial randomized block with three replications. The treatments are in the table.

Applying diammonium phosphate (DAP) significantly increased rice yield (see table). ZnSO₄ seed treatments produced significantly higher grain yield than other treatments. Seed treatment affected TKM9 more than it did IR20. *J*

Effect of nursery nutrient management and seed treatment on TKM9 and IR20 grain yield, Tamil Nadu, India.

	Yield (t/ha)	
	TKM9	IR20
<i>Nursery nutrient management</i>		
No added fertilizer	5.8	3.1
DAP	6.1	4.0
CD	0.4	0.22
<i>Seed treatment</i>		
Potassium chloride 1%	5.7	3.6
Manganese sulfate 4%	5.9	3.8
Ferrous sulfate 4%	6.0	3.8
Zinc sulfate 4%	6.4	3.8
Control	5.8	3.8
CD	0.4	ns

Yield response of IR36 and IR42 to N application under nonsubmerged conditions

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We evaluated the yield response of IR36 and IR42 grown under nonsubmerged conditions. Soil was a Ustic Dystropept, sandy clay loam with pH 5.2, 2.78% organic matter, 178 ppm available P (Bray II), and 0.9 meq exchangeable K (NH₄Ac extract) per 100 g.

Both varieties yielded significantly

Mean grain yield at 14% moisture of IR36 and IR42 as affected by N application, Maros, Indonesia.

Treatment (kg N/ha)	Grain yield ^a (t/ha)	
	IR36	IR42
0	1.4 d	0.8 d
30	2.9 c	1.7 c
60	4.0 b	2.4 b
90	4.1 b	3.7 a
120	4.9 a	4.2 a
150	4.9 a	4.3 a
CV (%)	11.8	12.6

^a Means followed by the same letter are not significantly different at 5% level by Duncan multiple range test.