TWINN CROP TRIAL

Irrigated Rice, Moshi, Tanzania, 2008

KEY RESULT

A single application of TwinN plus 50% of normal N application (100 kg urea) showed no significant difference in yield compared to the standard N treatment (200 kg urea) in an independent replicated trial. TwinN applied without any added N produced a decreased yield compared to the standard N treatment.

TREATMENTS

T1 Control (no fertilizer material applied)
T2 FYM (Farm Yard Manure) alone (10t/ha)
T3 FYM (10t/ha) + 50% recommended N from urea (100 kg/ha)
T4 TwinN alone (recommended rate)
T5 TwinN (recommended rate) + 50% recommended N from urea (100 kg/ha)
T6 Azolla (500 kg/ha) alone
T7 Azolla (500 kg/ha) + 50% recommended N from urea (100 kg/ha)
T8 100% recommended N from urea (200 kg/ha)

Rice Cultivar: IR 64

TRIAL RESULTS: Grain Yield & Mean Values of Other Parameters

Treatment	Yield T/ha	Panicles/m^2	Grain No. per Panicle	1000 Grain Wt (g)	Plant Height (cm)	No. of Tiller/hill	Ripening Ratio (%)
T1	3.8	329.2	64.7	64.7	74.6	15.3	71.6
T2	4.0	329.2	65.8	65.8	75.0	16.0	70.3
T3	5.5	350.8	81.8	81.8	77.7	17.3	63.6
T4	4.0	330.0	62.4	62.4	75.5	13.3	70.6
T5	6.0	400.8	84.4	84.4	81.2	21.7	59.3
T6	3.8	323.3	68.9	68.9	76.8	16.0	63.4
T7	5.2	413.3	67.5	67.5	79.0	17.7	63.9
T8	6.2	455.0	87.6	87.6	83.7	22.0	55.8
CV(%)	16.2	12.1	10.5	9.8	4.5	17.8	8.7
F-Test	*	*	**	ns	ns	*	*
LSD 5%	1.0	63.8	11.0	-	-	4	8.1
LSD 1%	1.5	95.1	16.0	-	-	7	4

* Significance at 5% in F-test **Significance at 1% in F-test ns = not significant.

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The highest yield (6.2 t/ha) was obtained in plots which received a recommend rate of N fertiliser (T-8, 200 kg urea/ha) from a chemical fertiliser (T-8). This was not significantly different to plots in which TwinN was sprayed and supplemented by 50% recommended rate of nitrogen from urea (T-5, 6.0 t/ha). FYM application at 10t/ha with fertiliser at 100kg N/ha (T-3) came third in terms of yield (5.5 t/ha). TwinN alone resulted in decreased yield compared to the full rate of N application.

TRIAL SUMMARY

Trial Performed & Analysed By: Crop Science and Production Section, KATC-Moshi
Trial Design: RCBD design, with 3 replications, 8 treatments

CONCLUSIONS

- **Application of TwinN to rice enabled a 50% reduction in urea application to produce comparable yield to 200 kg urea/ha (100% rate).**
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- **Application of TwinN with no urea did not show a significant yield increase indicating that it should be applied with either some nitrogen fertiliser or an alternative source of organic nitrogen.**