

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) **T6** Azolla (500 kg/ha) alone
T2 FYM (Farm Yard Manure) alone (10t/ha) **T7** Azolla (500 kg/ha) + 50% recommended
T3 FYM (10t/ha) + 50% recommended N N from urea (100 kg/ha)
from urea (100 kg/ha) **T8** 100% recommended N from urea (200
T4 TwinN alone (recommended rate) kg/ha)
T5 TwinN (recommended rate) + 50%
recommended N from urea (100 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.

Mapleton Agri Biotech Pty Ltd

137 Obi Obi Road, Mapleton Qld 4560 Australia

Phone: +61 7 5445 7151

Email: TwinN@mabiotec.com

www.mabiotec.com

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).
- ♦ 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.



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