

TWINN CROP TRIAL



*Non-irrigated Sugarcane, Commercial Evaluation,
Kilombero, Tanzania, 2008-09*

The trial was performed by Kilombero Sugar Company to evaluate TwinN on their sugar estate in Tanzania. Statistical analysis of the data was performed by BSES (Australia). The trial suffered significant water stress resulting in low yields overall.

KEY RESULTS

An independent trial in dryland sugarcane showed:

- ♦ Two applications of TwinN plus 50% of the normal application of nitrogen (N) gave a higher yield than the standard 100% N fertiliser treatment with no TwinN applied (62.3 T/ha versus 58.2 T/ha), although there was no statistical difference in yields.
- ♦ Use of TwinN has substantially reduced the carbon footprint of the production system.

TREATMENTS

Treatment No.	T1 Standard	T2 TwinN	T3 TwinN	T4 Zero N
N (kg/ha)	153	75	75	0
P (kg/ha)	30	30	30	30
K (kg/ha)	150	150	150	150
TwinN applications	0	1	2	0

Source of N was urea and DAP (di-ammonium phosphate); KCl = potassium chloride

TRIAL DESIGN

The trial consisted of 4 treatments that were replicated 3 times. Plot size was 0.5 hectares (15 cane rows of 250m length with inter-row spacing of 1.5m).

TWINN APPLICATION PROCEDURES

First application of TwinN was made at 15 cm crop height by knapsack sprayer 2 weeks after N top dressing.

Second application of TwinN was made by knapsack sprayer 3 weeks after first application.

Both applications of TwinN were made under damp, humid conditions.

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TRIAL RESULTS

Average of TC/ha	Treatment 1	Treatment 2	Treatment 3	Treatment 4
	58.2	55.7	62.3	46.2
Average of Pol %	Treatment 1	Treatment 2	Treatment 3	Treatment 4
	16.55	16.14	17.08	16.38
Average of Fib %	Treatment 1	Treatment 2	Treatment 3	Treatment 4
	12.8	13.1	14.6	12.9
Average of Brix %	Treatment 1	Treatment 2	Treatment 3	Treatment 4
	19.9	19.5	19.4	19.6
Average of Moist %	Treatment 1	Treatment 2	Treatment 3	Treatment 4
	66.3	67.4	66.0	67.5
Average of Purity %	Treatment 1	Treatment 2	Treatment 3	Treatment 4
	83.4	82.6	87.9	83.6
Average of SUCR %	Treatment 1	Treatment 2	Treatment 3	Treatment 4
	12.83	12.39	13.84	12.75

CONCLUSIONS

- ♦ Two applications of TwinN plus 50% N fertiliser (T3) gave the highest yield of cane harvested (62.3 T/ha) in the trial with the standard 100% fertiliser treatment (T1) slightly lower (58.2 T/ha). The zero N control (T4) yielded only 46.2 T/ha.
- ♦ Two applications of TwinN plus 50% N fertiliser (T3) also gave the highest average of sucrose % (13.84% versus 12.83% for T1).
- ♦ Use of TwinN enabled reduction of N applications to 50%, which reduced input costs and increased profitability.
- ♦ Additional benefits include a useful reduction in carbon footprint for the production system by reducing the application of urea, which has a very large carbon footprint.

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