



Trial Summary - Cotton



Trial date: 2012

Report: The effect of two microbial amendments, Eco-T and eNrich on the yield of cotton

Trial type: 2 x 2 x 2 factorial experiment in a randomized complete block design with 4 replications (Plot size 3m x 5m).

Product: C active foliar (Branded eNrich)

Country: Ghana

Institution: CSIR-Savannah Agricultural Research Institute,

Location: Tamale

Publication: Advanced Crop Science Vol3 729-735

Crop: Cotton

Variety:

Previous crop: Cotton

Soil type: Sandy loam

Irrigation: Rain fed

Fertiliser: 100% - NPK 250 kg/Ha + Sulphate of ammonia 125 kg/Ha
65% - NPK 162.5 kg/Ha + Sulphate of ammonia 81.3 kg/Ha
(NPK = 23:10:5) (Sulphate of ammonia – 21% nitrogen)

Application: Foliar applied at knee height at 5.00pm

Influence of

Conditions: The area experiences a unimodal rainfall pattern with the main rains falling from May to October with a peak occurring in September and an average annual rainfall of 1022mm. On this occasion the trial experienced high rainfall and waterlogging.

Results:

TABLE 1: Effect of treatments on cotton greenness score

Fertiliser	Eco-T	eNrich	Greenness Score
100%	0	0	0.375
100%	1	0	0.625
100%	0	1	1.000
100%	1	1	0.875
65%	0	0	0.125
65%	1	0	0.375
65%	0	1	1.000
65%	1	1	0.750



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TABLE 2: Effect of treatments on cotton plant height

Fertiliser rates	Eco-T	eNrich	Seedling height at 25 DAE	Seedling height at 40 DAE	Seedling height at 55 DAE
100%	0	0	12.55	25.6	51.4
100%	1	0	15.66	36.5	64.6
100%	0	1	16.11	33.3	61.0
100%	1	1	17.45	36.7	71.5
65%	0	0	14.65	28.3	54.0
65%	1	0	16.97	34.4	63.8
65%	0	1	16.52	32.1	61.3
65%	1	1	16.55	31.2	61.3

DAE – Days after emergence

TABLE 3: Effect of Treatment on Seed Cotton and Haulm Yield and Harvest Index 2012

Fertiliser rates	Eco-T	eNrich	Seed cotton	Cotton Haulm Kg/Ha	Harvest index Kg/Ha %
100%	0	0	400	1220	24.6
100%	1	0	887	1203	42.7
100%	0	1	837	1183	41.7
100%	1	1	1770	1317	57.6
65%	0	0	350	847	29.8
65%	1	0	783	1003	44.9
65%	0	1	753	1070	41.9
65%	1	1	1647	1167	58.8



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Yield: At 100% fertiliser rate eNrich increased seed cotton by 437 Kg/Ha
At 60% fertiliser rate eNrich increased seed cotton yield by 353 Kg/Ha
Seed cotton yields were significantly increased in comparison to the control

Economics: Estimated farm gate seed cotton value - \$0.5 per kg
At 100% fertiliser rate eNrich increases seed cotton yield by \$218.50/Ha
At 60% fertiliser rate eNrich increased seed cotton by \$176.50

Conclusion: There were significant differences between treatments with regard to greenness scores. The highest greenness score was recorded in plots that received eNrich with or without Eco-T (Refer to table 1).

The growth and yield of cotton plants were improved with the application of both Eco-T and eNrich. The inoculants increased seed cotton yield irrespective of whether or not plants received the full recommended or reduced dose of nitrogen fertiliser. The highest yields increases were in treatments with both inoculants. An additional trial that measures the components of yield is needed to understand with more accuracy how these products increased yield to such high levels.

Full trial reports can be supplied on request.



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GENERAL ENQUIRIES, SALES, ADMINISTRATION & FINANCE

Lisa Anderson

Tel: 042 700 3881

lisa@thinkbio.com.au

Head Office

thinkbio

47 Moncur St

Woollahra, NSW 2025

Australia

PO Box 595

Waverley NSW 2024

Australia

TECHNICAL, R&D AND PRODUCTION ENQUIRIES

Kyle Merritt

Tel: 040 08 85199

kyle@thinkbio.com.au

Laboratory

thinkbio

3 Bearing Avenue

Warana QLD 4575

Australia

PO Box 828

Cotton Tree QLD 4558

Australia