

Vital Earth Resources

706 East Broadway, Gladewater, Texas 75647
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2005 Crop Results

Vitazyme on *Stylosanthes Hamata* Cook (a forage legume)

Studies in Six African Countries

Researcher: Soudan A. Musa
Tchad, and Burkina Fasso
unknown

Location: Cameroon, Nigeria, Central African Republic, Niger,
Variety: *Stylosanthes hamata* Verano **Soil types:**

Experimental design: Four fertility regimes with six replications were applied to experimental plots (4 m²) in six African countries, all with Vitazyme with the exception of an untreated control. Effects on nodulation were used to evaluate the product.

1. Vitazyme alone
2. Vitazyme + phosphorus fertilizer (P)
3. Vitazyme + nitrogen fertilizer (N)
4. Vitazyme + farmyard manure (FYM)
5. Control

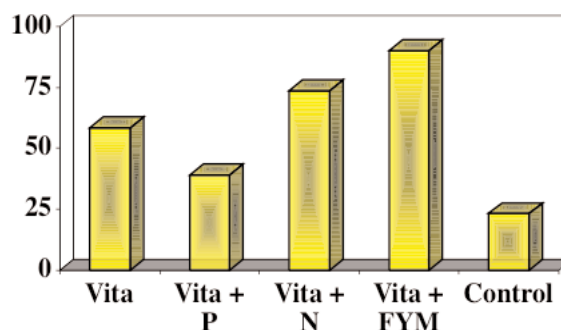
Fertilization: 100 kg/ha N (urea, 100 kg/ha P₂O₅ (SSP), and 100 kg/ha dairy manure

Vitazyme applications: 20 ml of Vitazyme was added to 250 g of seed for each 4 m² plot of Treatments 1, 2, 3, and 4.

Treatment	Cameroon	Nigeria	Central African Rep.	Niger	Tchad	Burkina Fasso	Mean
----- nodules/m ² -----							
1. Vitazyme	40	60	70	60	60	60	58.3
2. Vita + P	35	35	55	35	30	45	39.2
3. Vita + N	60	76	60	85	80	80	73.5
4 Vita + FYM	75	95	90	100	90	90	90.0
5. Control	20	20	40	20	20	20	23.3

Nodulation results: Nodules were counted in one square meter of plants for each determination. Vitazyme alone increased root nodulation by 150% over the control. In combination with nitrogen and farmyard manure, Vitazyme greatly boosted nodulation, though with phosphorus the nodulation was slightly depressed.

Conclusions: Vitazyme applied with farmyard manure and nitrogen in this six-country African trial greatly boosted the nodulation of this tropical forage legume, by up to 286% above the control. Vitazyme alone more than doubled nodulation. The product shows great promise in increasing legume forage production in these African countries.



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2005 Crop Results

Vitazyme on *Stylosanthes Guinensis* Cook (a forage legume)

Studies in Six African Countries

Researcher: Soudan A. Musa
Tchad, and Burkina Fasso

Location: Cameroon, Nigeria, Central African Republic, Niger,
Variety: *Stylosanthes guinensis* Cook Soil _____ types:

Experimental design: Four fertility regimes were applied to experimental plots (4 m²) in six African countries, all with Vitazyme with the exception of an untreated control. Effects on nodulation were used to evaluate the product.

1. Vitazyme alone
2. Vitazyme + phosphorus fertilizer (P)
3. Vitazyme + nitrogen fertilizer (N)
4. Vitazyme + farmyard manure (FYM)
5. Control

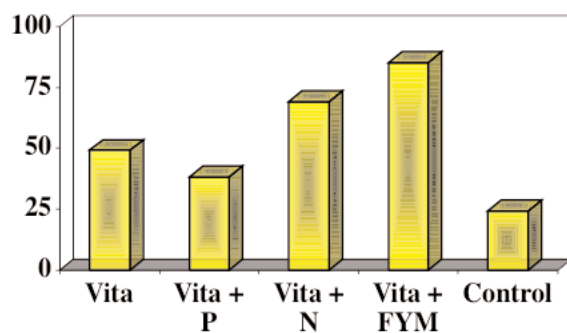
Fertilization: 100 kg/ha N (urea), 100 kg/ha P₂O₅ (SSP), and 100 kg/ha dairy manure

Vitazyme applications: 20 ml of Vitazyme was added to 250 g of seed for each 4 m² plot of Treatments 1, 2, 3, and 4.

Nodulation results: Nodules were counted in one square meter of plants for each determination.

Nodules Per Square Meter

Treatment	Cameroon	Nigeria	Central African Rep.	Niger	Tchad	Burkina Fasso	Mean
1. Vitazyme	40	40	75	40	60	40	49.2
2. Vita + P	35	35	60	25	40	35	38.3
3. Vita + N	75	55	70	50	100	65	69.2
4 Vita + FYM	90	65	80	65	130	80	85.0
5. Control	15	20	50	20	30	10	24.2



Vitazyme alone increased legume nodulation by 103% over the control. All other treatments exceeded the control as well, especially the nitrogen and farmyard manure treatments with Vitazyme. Phosphorus plus Vitazyme did not produce as great an increase as did the other treatments.

Conclusions: In this six country African trial, Vitazyme performed admirably by inducing a 103% increase in forage legume nodulation. In combination with nitrogen and farmyard manure the increases were even greater, from 186 to 253% above the control, showing an excellent synergism between these materials. Vitazyme has been proven by this study to be an excellent stimulator of forage legume nodulation, and thus of legume growth potential in tropical countries.