



Oil Palm Crop Report Directory

Recommended Application Rates For Oil Palm

**2004 African oil palm, hybrid cv.
 Santo Domingo, Ecuador**



Crop Recommendations for Oil Palm

Nursery plants:

- Apply at the rate of 1 liter/hectare (13-16 oz/acre) or use a 1% solution to new transplants
- Apply at the rate of 1 liter/hectare (13-16 oz/acre) or use a 1% solution every 30-60 days, and each time the plants are moved to a larger container

Established plants:

- Apply 1 liter/hectare (13-16 oz/acre) either as a foliar spray or a ground application every 30-60 days

Vitazyme can be tank mixed with all farm chemicals, including herbicides, insecticides, fungicides, and fertilizers.

Added benefit: when mixed with herbicide, Vitazyme will stimulate weed growth, thereby enhancing herbicide efficacy

Vital Earth Resources

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2004 Crop Results

Vitazyme on Oil Palm (Nursery Plants)

Asociacion Nacional de Cultivadores de Palma Africana (ANCUPA)

Researcher: Ing. Francisco Chavez M.
 Domingo, Ecuador

Location: ANCUPA Experimental Station, Santo Domingo, Ecuador

Soil type: unknown

Variety: African oil palm, hybrid cv.

Planting time: 2003

Experimental design: A variety of biostimulant materials were evaluated in an oil palm plantation nursery to evaluate their effects on oil palm seedling rooting, and then their potential to improve early growth and reduce the time to field planting. Only results for Vitazyme will be reported in this summary.

1. Control

2. Vitazyme

Fertilization: unknown

Vitazyme application: 3 cc per plant, diluted in water, sprayed in a 1 meter radius around the plant at trial initiation in May and June

Root and growth results: During 2003, at initiation of the oil palm seedling study, the oil palm seedlings were analyzed for root number, weight, and percent dry matter. This process was repeated in July and again sometime later.

Root Weight*

Treatment	Root wet weight, g			Root dry weight, g		
	Initial	Eval. 1	Eval. 2	Initial	Eval. 1	Eval. 2
Vitazyme	72.70	90.90 (+25%)	178.07 (+145%)	23.07	37.25 (+61%)	60.87 (+164%)
	[Eval. 1 vs. Eval. 2 +96%]			[Eval. 1 vs. Eval. 2 +63%]		
Control	61.40	68.90 (+12%)	50.45 (-18%)	17.62	26.85 (+52%)	15.40 (-13%)
	[Eval. 1 vs. Eval. 2 -27%]			[Eval. 1 vs. Eval. 2 -43%]		

*Methodology for this determination is not known.

Overall increase in root wet weight: 145%
Overall increase in root dry weight: 164%

Root Number*

Total Roots	Primary root number			Secondary root number				
	Initial	Eval. 1	Eval. 2	Initial	Eval. 1	Eval. 2	Initial	Eval. 2
Vitazyme	7.75	10.50 (+35%)	10.00 (+29%)	32.50	69.50 (+114%)	64.75 (+99%)	40.25	74.75 (+86%)
	[Eval. 1 vs. Eval. 2 -5%]			[Eval. 1 vs. Eval. 2 -7%]				
Control	7.50	5.75 (-23%)	4.50 (-40%)	39.00	32.50 (-17%)	30.75 (-21%)	46.50	35.25 (-24%)
	[Eval. 1 vs. Eval. 2 -22%]			[Eval. 1 vs. Eval. 2 -5%]				

*Methodology for this determination is not known.

Increase in primary root number: 29%
Increase in secondary root number: 99%
Overall increase in root number: 86%

Root Dry Matter

Treatment	Dry matter in roots, %		
	Initial	Eval. 1	Eval. 2
Vitazyme	37.73	40.98 (+29%)	57.50 (+81%)
		[Eval. 1 vs. Eval. 2 +40%]	
Control	28.70	38.97 (+36%)	24.50 (-15%)
		[Eval. 1 vs. Eval. 2 -37%]	

Overall increase in root dry matter percentage: 81%

Conclusions: Vitazyme had a profound positive effect on the growth and development of young oil palm plants in this ANCUPA nursery trial in Ecuador. Both wet and dry root weights were increased during both the first and second growth intervals, but especially during the second period. Overall weight increases were 145% (wet) and 164% (dry). The untreated control, on the other hand, actually experienced root weight reductions for the same period, of -18% (wet) and -13% (dry).

Root number responded excellently to Vitazyme as well, especially the smaller, finer, secondary roots. Primary roots increased by 29% over the test period, while secondary roots increased by 99%, giving a total increase of 86%. At the same time, the untreated control lost root numbers, losing 22% of the primary roots and 5% of the secondary roots.

The percentage of dry matter in the roots increased markedly with Vitazyme, rising from 31.73 to 57.50% over the test period, at the same time that the percentage of dry matter in the roots of the untreated control dropped from 28.70% to 24.50%.

Vitazyme is clearly a very effective root growth enhancer for young oil palm plants. Three other treatments among the sixteen in this study also performed quite well, but **Vitazyme was overall the most consistent performer of all products tested.**