

Vital Earth Resources

706 East Broadway, Gladewater, Texas 75647
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2013 Crop Results

Vitazyme on Mums

Researcher: Jean E. Philogene Research organization: Acra Industries, Kenskoff, Oest Department, Haiti

Location: Dolean Michel Farm, Haiti (farm owner) Variety: Puma

Trial initiation: June, 2012

Experimental design: A greenhouse with mums was treated with Vitazyme on one side of the greenhouse, while the other side was left untreated, in an effort to determine the effect of the product on mum growth and development.

1. Control

2. Vitazyme

Vitazyme application: (1) on December 6, 2012, two trays were dipped for 15 minutes in a 1% Vitazyme solution before transplanting to the greenhouse beds; (2) on December 21, 2012, a foliar spray of a 0.5% solution was made 15 days after transplanting.

Growth results: In early 2013, 45 days after transplanting, it was clear that the Vitazyme treated mums were substantially larger than the untreated plants. See the photo below.



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Researcher: Agr. Alejandro Reyes and Agr. Agustin Peralta *Research organization:* Plantamar and Quimica Lucava, Mexico *Trial coordinators:* Agr. Ubaldo Martinez (Plantamar) and Agr. Alejandro Reyes Quimica Lucava) *Location:* Santa Ana, Tenancingo, Mexico *Variety:* chrysanthamum, cv. Hartman
Trial initiation: June, 2012

Experimental design: A greenhouse with mums was treated with Vitazyme on a bed, and results were compared to untreated plants. Applications were made on a regular basis to evaluate the effect of the product on cuttings for propagation.

1. Control

2. Vitazyme

Fertilization: A potassium product was applied to promote better stem thickness.

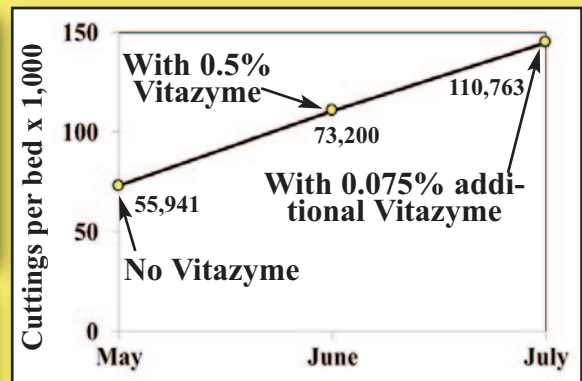
Vitazyme application: (1) 350 ml/70 liters of water (0.5%) on the leaves; (2) 52.5 ml/70 liters of water (0.075%), with a potassium product designed to increase stem diameter

Growth results: In October of 2012, observations showed that Vitazyme made significant improvements:

- Better overall growth and yield of stems and leaves
- Faster growth rate

Treatment	May yield	June yield*	July yield*
	----- cuttings/bedx1,000 -----		
Control	55,941	—	—
Vitazyme	—	73,200 (+31%)	110,736 (+98%)

*Comparisons are made with data from the same bed in May before treatment.



**Cutting increases with Vitazyme:
98%**

Yield results: Better growth and production of cuttings was observed with Vitazyme, from 1,200 cuttings per bed on average that were harvested prior to treatment, it increased by 31% after first application and a further increase of 98% of production of cuttings above the control was achieved after the second application, 15 days from the first, at a much lower rate of Vitazyme, mixed with a product based on potassium to improve stem diameter. Cuttings produced in 30 days: May (previous control) 55,941; June (after 1st application): 73,200 (131%); July (after 2nd application): 110,763 (198%).

Conclusions: Mums treated with either 0.5% Vitazyme solution in a greenhouse setting in Mexico showed a great response, in terms of growth vigor and cutting production. Increases were 31% after one month and 98% after two months. The use of Vitazyme for mum cutting production is highly recommended.



The treated chrysanthamums on the right are considerably larger than the untreated plants on the left, about two months after treatment.

Basic Product Research

Researcher: Paul W. Syltie

Location: Vital Earth Research Center greenhouse, Gladewater, Texas

Date of initiation: November 5, 1996

Variety: Stargazer garden mum (P.P. 5695)

Purpose: To evaluate the effect of Vitazyme, BR-61, and Nutra-Min combined on the development and flowering of a perennial flower such as a mum

Experimental design and treatments: Six mum plants having relatively equal size were purchased at Lowe's of Longview. These plants were potted and paired in a randomized complete block design, three to be treated with the material and three not treated. Pairings were based on relative size of the plants.

Treatment	Vitazyme + BR-61 + Nutra-Min*
1	O
2	X

*This solution contained 0.1% Vitazyme (1 ml/liter), 1 tablespoon/gal of BR-61, and 1 tablespoon/gal of Nutri-Min. Applications were 200 ml of solution per pot of Treatment 2 on a periodic basis, beginning November 5 and continuing November 12, 19, and 26 and December 3, and 20, 1996.

Growth media: Sabine River bottomland clay loam Pot type: 2 gallon

Harvest date and method: The total number of blossoms and buds were counted for each plant on January 3, 1997, and chlorophyll levels of the leaves were measured on January 2, 1997. Chlorophyll for 8 to 10 leaves was averaged using a SPAD meter.

Data analysis: Data were analyzed with ANOVA and general linear model.

Results and discussion:

Leaf Chlorophyll Values

Treatment	Leaf chlorophyll SPAD units
1. Control	49.9b
2. Vitazyme + BR-61 + Nutri-Min	53.8a (+8%)

*Means followed by the same letter are not significantly different at P=0.05. LSD_{0.05}=2.9.

Flowers and Buds

Treatment	Leaf chlorophyll SPAD units
1. Control	18.7a
2. Vitazyme + BR-61 + Nutri-Min	35.0a (+87%)

*Means followed by the same letter are not significantly different at P=0.05. LSD_{0.05}=33.7. Significant level: P=0.17.

The leaves of treated mums had a significantly higher chlorophyll level (8% more) than the control, accounting for the greater number and darker color of leaves for Treatment 2 plants. The Vitazyme, BR-61, and Nutri-Min caused very noticeable differences in the number of blossoms for each treatment, the three treated plants having many more blossoms (87% more). This gave the appearance of a closely-packed, well-filled blossom array for Treatment 2.

Conclusion: Vitazyme, BR-61, and Nutri-Min in combination can significantly improve the flowering of mums, and cause the development of a more beautiful plant. More blossoms and more numerous, darker green leaves resulted from the use of these three material as a periodic soil application in pots. An investigation of each of these products alone was not undertaken in this study.