

Dave Thompson's Organic Healthy Grow® Fertilizer Research Trials

PAT2H Horticultural Research Services, Inc.
Study Director: Warren D. Davenport
Location: Timbercrest Farm

Trial #1 - Effects of Healthy Grow All Purpose Fertilizer on 'Blue Pearl' Super Elfin XP Impatiens

Effects of Healthy All Purpose Garden and Healthy Veggie and Herb Fertilizers on 'Blue Pearl' Super Elfin XP Impatiens

Trial ID: PHRN 1409 Protocol ID: PHRN 1408
Location: Timbercrest Farm Study Director: Warren D. Davenport
Project ID: PHRN 1408 Investigator: Warren D. Davenport
Sponsor Contact: Ben Thompson

General Trial Information

Study Director: Warren D. Davenport **Title:** Research Scientist
Investigator: Warren D. Davenport **Title:** Research Scientist
Keywords: Impatiens
Pearl Valley
Healthy All Purpose Garden Fertilizer
Healthy Veggie and Herb Fertilizer

Trial Location

Conducted Under GEP: Yes

Objectives:

- 1) To determine the effects of various Pearl Valley Fertilizers @ specified labeled rates and determine their effects on plant growth.
- 2) Compare the above with an untreated control (UTC).

Conclusions:

The annual flowers, 'Blue Pearl Super Elfin XP' Impatiens, were transplanted into a growing media containing mineral soil and perlite (80:20, vol) along with Basil, Tomatoes and Vincas. The four plants were subjected to Healthy Grow All Purpose Garden Fertilizer (3-3-3) at equivalent rates of 4.5#/100SF area. The initial surface application was made at the transplant date and reapplied 30 days later. Weekly visual observations were made with regard to leaf color and overall quality of the individual plants. At the 3 & 6 week intervals, the plants were measured for height and width (Growth Index Values) to substantiate the influence that HG AP Fertilizer had on vegetative growth. Flower counts were also counted on a periodic basis.

By the first 7 days after the initial treatment (DAT), we saw a positive "greenup" & quality response to the fertilized Impatiens. This significant response continued over the duration of the study. By the end of the 6th week the Impatiens had dark green leaves and acceptable quality. By week 3 & 6 there was > 50% increase in size, respectively, where the plants had been treated with 1 & 2 applications of HG AP Fertilizer. Consequently, the treatments had a significant impact on overall fresh weight accumulation of Impatiens. The treated plants were 180% heavier than the untreated plants. Flower counts were made from Weeks 2 - 6 with the majority occurring at the latter dates. There were >400% more flowers associated with the fertilized plants than the UTC group.

Overall conclusions - Within the confinement of our research testing - Healthy Grow All Purpose Garden Fertilizer (3-3-3) when applied twice at 4.5#/100SF @ 30 day intervals had a significant impact on overall health, growth & flowering of 'Blue Pearl Super Elfin XP' Impatiens.



Untreated Control (UTC)



**Healthy Blooms Fertilizer (3-5-3)
5.1 grams per pot**

Trial #2 - Effects of Healthy Grow Early Starter Fertilizer on the Germination of 'Inca II Yellow' Marigolds

Effects of Healthy Start Fertilizer on Germination of 'Inca II Yellow' Marigold

Trial ID: PHRN 1402 Protocol ID: PHRN 1401
Location: Timbercrest Farm Study Director: Warren D. Davenport
Project ID: PHRN 1401 Investigator: Warren D. Davenport
Sponsor Contact: Ben Thompson

General Trial Information

Study Director: Warren D. Davenport **Title:** Research Scientist
Investigator: Warren D. Davenport **Title:** Research Scientist
Keywords: Healthy Start Fertilizer
Marigold
Pearl Valley

Trial Location

Conducted Under GEP: Yes

Objectives:

- 1) To determine the effects of Healthy Start Fertilizer topdressed and incorporated @ specified labeled rates and determine their effects on plant germination and growth.
- 2) Compare the above with an untreated control (UTC).

Conclusions:

Attached are the final data on 'Inca II Yellow' Marigolds treated with Healthy Start Organic Fertilizer. Recall that this is one of four species of seed that was sown in a potting soil that contained the fertilizer as a "topdress" or "incorporated" application. The selected rate was identical except one was placed onto the surface of the soil at seeding time and the other was incorporated into the potting mix prior to seeding. Results are as follows:

- 1) *The speed of germination of Marigold was evaluated. No major differences were detected among treated or untreated (UTC) seedlings. All three treatments promoted a favorable response to germination. No injury was reported.*
- 2) *Within 14 days after seeding (DAS), all had equal germination numbers. The fertilized Marigolds demonstrated better quality at day 14 & 28. Plants were thinned to one plant per pot after day 14.*
- 3) *After 28 DAS the 'Inca II Yellow' Marigolds plants that were treated with Healthy Start Fert (HSF) promoted significantly more growth (greater fresh weight accumulation) & had better visual color than those that did not receive fertilizer (UTC group).*
- 4) *After 28 DAS the incorporated treatment provided a significant enhancement in visual quality and growth over those that had received a topdressed application. (Note: it is theorized that dispersed particles of fertilizer throughout the rootball promoted a greater or steady release of nutrients. This is possibly due to lower temps within the rootball and greater biological activity as opposed to higher exposure to direct sunlight onto the soil surface and possible N release due to volatility. Topdress applications are also subject to wetting/drying fluctuations although they were watered once every day or two, as needed. Cucumbers provided the greatest evidence).*
- 5) *We never detected any injury over 28 DAS due to the fertilizer treatments.*
- 6) *Note: We conducted a "side-experiment" that tested other topdressed rates of HSF on cucumber and marigolds. Rates varied & were equivalent to 0, 1, 2, 3, 4, 5, 6 & 8#N/MSF on 4 replicates. We found that the 0-5# N rate was inferior to the tested 6#-8#N rate as a topdress. We will use the 6#N rate as the standard for all 7 products if they are to be used in containers and artificial potting media.*
- 7) *Observations suggest that repeat applications should be made every 4 weeks based on our ideal growing conditions.*



Healthy Start Fertilizer
(2-4-3) TD @ 6#N/MSF

Untreated Control (UTC)

Healthy Start Fertilizer
(2-4-3) INC @ 0.75#N/MSF

Trial #3 - Effects of Healthy Grow Tomato Fertilizer on the Growth of 'Better Boy' Tomatoes

Effects of Healthy Tomato Fertilizer on the Growth of 'Better Boy' Tomatoes

Trial ID: PHRN 1405 Protocol ID: PHRN 1405
Location: Timbercrest Farm Study Director: Warren D. Davenport
Project ID: PHRN 1405 Investigator: Warren D. Davenport
Sponsor Contact: Ben Thompson

General Trial Information

Study Director: Warren D. Davenport **Title:** Research Scientist
Investigator: Warren D. Davenport **Title:** Research Scientist
Keywords: Healthy Tomato Fertilizer
Tomato
Pearl Valley

Trial Location

Conducted Under GEP: Yes

Objectives:

- 1) To determine the effects of various Pearl Valley Fertilizers @ specified labeled rates and determine their effects on plant growth or germination.
- 2) Compare the above with an untreated control (UTC).

Conclusions:

'Better Boy' Tomato Seedlings were transplanted into a prepared soil mix that was toppedressed with Healthy Tomato Fertilizer (3-3-6) @ 1.35#/1000SF (4.5#/100SF). An "untreated control" (UTC) soil was used for comparison. The fertilized plants received their respected treatments at day 0 and day 30. Within the first 14 days after transplanting (DAT), we detected a visual effect on leaf color and overall quality. This visual observation was significantly evident for the duration of the test (8 weeks). Flower removal was conducted for the first 6 weeks on this species to promote as much vegetation as possible. Afterwards the flowers were allowed to form and we saw more development on the fertilized plants than those represented by the UTC group. Quantitative measurements (height and fresh weight accumulation) supported the significant impact that Healthy Tomato Fertilizer had on plant growth. By the 8th week there was 5x more weight and plants were twice as tall on the fertilized tomatoes than those that were not fertilized.

Note: It was generally felt that this species would have performed better under our greenhouse conditions with mineral soils IF the initial nitrogen rates would have exceeded the 1.35# rate. Perhaps future testing should be conducted to increase the N rates to 2-3#/MSF on tomatoes followed 30 days later with a supplemental application at 1.35#.



Untreated Control (UTC)



**Healthy Tomato Fertilizer
(3-3-6) Topdressed @
1.35# + 1.35#N/MSF**

Trial #4 - Effects of Healthy Grow Veggie & Herb Fertilizer on 'Large Leaf Italian' Basil

Effects of Healthy All Purpose Garden and Healthy Veggie and Herb Fertilizers on 'Large Leaf Italian' Basil

Trial ID: PHRN 1408 Protocol ID: PHRN 1408
Location: Timbercrest Farm Study Director: Warren D. Davenport
Project ID: PHRN 1408 Investigator: Warren D. Davenport
Sponsor Contact: Ben Thompson

General Trial Information

Study Director: Warren D. Davenport **Title:** Research Scientist
Investigator: Warren D. Davenport **Title:** Research Scientist
Keywords: Basil
Pearl Valley
Healthy All Purpose Garden Fertilizer
Healthy Veggie and Herb Fertilizer

Trial Location

Conducted Under GEP: Yes

Objectives:

- 1) To determine the effects of various Pearl Valley Fertilizers @ specified labeled rates and determine their effects on plant growth.
- 2) Compare the above with an untreated control (UTC).

Conclusions:

The herb, 'Large Leaf Italian' Basil, was transplanted into a growing media containing mineral soil and perlite (80:20, vol) along with Impatiens, Tomatoes and Vincas. The four plants were subjected to Healthy Grow Veggie & Herb Fertilizer (3-3-5) at equivalent rates of 4.5#/100SF area. The initial surface application was made at the transplant date and reapplied 30 days later. Weekly visual observations were made with regard to leaf color and overall quality of the individual plants. At the 3 & 6 week intervals, the plants were measured for height and width (Growth Index Values) to substantiate the influence that HG V&H Fertilizer had on vegetative growth.

By the first 7 days after the initial treatment (DAT), we saw a positive "greenup" & quality response to the fertilized Basil. This significant response continued over the duration of the study. By the end of the 6th week the Basil had moderately green leaves and acceptable quality. By week 3 & 6 there was a 29% & 41% increase in size, respectively, where the plants had been treated with 1 & 2 applications of HG V&H Fertilizer. Consequently, the treatments had a significant impact on overall fresh weight accumulation of Basil. The treated plants were 135% heavier than the untreated plants.

Overall conclusions - Within the confinement of our research testing - Healthy Grow Veg & Herb Fertilizer (3-3-5) when applied twice at 4.5#/100SF @ 30 day intervals had a significant impact on overall health and growth of 'Large Leaf Italian' Basil.



Untreated Control (UTC)



**Healthy Veggie and Herb Fertilizer
(3-3-5) @ 71.5 gram/box**