FINAL report of Demo Trial on Rice in Bangladesh

Field Trial conducted at: Bangabandhu Sheikh Mujibur Rahman Agricultural University (BSMRAU)

Date: 25 May, 2017

Field Area: 0.33 Acre for both controlled and applied

1. **Country**: Bangladesh, Area: Gazipur, Dhaka.

2. **Crop:** Rice (BRRI-29). **Season**: January - May,2017

3. **Harvesting** was done 61 days after the 3rd (last) application.

4. **Dilution ratio with water**: 1: 960 (for all 3applications)

5. **No. of applications**: 3 (Dates: 02 Feb,2017, 26 Feb,2017, 22 March, 2017)

Yield report as on 22 May, 2017 (Harvesting date)

Description	Controlled (NON-Treated)	**Applied** ONIT Grow™	Remark
1. No. of paddy stick/ear (each plant)	Plant # 1-18 Plant #2-14 Plant #3-12 **Total: 44**	Plant #1-19 Plant#2-19 Plant #3-17 **Total:55**	% of Extra ear/stick: **+25%**
2. Count of Paddy grain (3 plants)	Plant #1-1449 Plant #2-1244 Plant #3 –963 **Total: 3656 grains**	Plant #1-2099 Plant #2-2366 Plant #3-2009 **Total: 6474 grains**	% of Extra no. of grains: **+77%**

3. Total weight of rice grain of 3 plants	**96 gm**	**158 gm**	% of Extra weight: **+64.58%**
4. Weight of 100 grains	2.42 gm	2.44 gm	
5. Total weight of Paddy production in 0.33 acre **after drying**	**858 kg**	**1240 Kg**	% of Extra yield after drying for 4 days: **+44.52%**

Comments:

1. The difference of yield between randomly selected representative plants and the total final weight of the crop from the entire field under demo trial is due to the step wise accumulated loss from cutting, transportation, threshing, handling, drying, empty shells, mishandling by laborsetc.

2. Only 3 spray were done and the last (3rd) spray was applied just before the blooming. There was no further spraying before theharvesting.

3. The grains from applied field are visibly brighter and shinier than the grains from the controlledfield.

4. All the inputs e.g. irrigation, fertilizers, pesticide, weed controller etc. were exactly the same in both the fields.

Inputs (fertilizer, weed controller and pesticide) application

For each 0.33 Acre of paddy field (for both controlled and applied) for the whole crop cycle.

Fertilizer

1. **Urea (N)** - 15kg – After 15 days of planting
   15kg – After 35 days of planting
   15kg – After 55 days of planting
   Total : 45kg for complete crop cycle.

2. **Triple Super Phosphate (P)** - 16.50 kg at the time of soil preparation (before planting)

3. **Muriate of Potash (K)** – 16.50 kg at the time of soil preparation (before planting)

Weed Controller: Pretilachlor - 132 ml – only one time. Applied by Spray. This broad-spectrum herbicide is used in low land rice.

Pesticide :*Fipronil (phenyl pyrazole).* Pesticide applied by broadcasting method for controlling Yellow Stem borer (*Scirpophagaincertulus),* Dark-headed stem borer *(Chilopolychrysa)* and Pale –headed stem borer *(C. suppressalis).*

Please note that the above inputs have been applied in the same way for both controlledand ONIT Grow™ applied field.

Photos

Harvesting

3 Plants Controlled

3 Plants Applied

Ear / sticks of 3 plants Controlled

Ear / sticks of 3 plants – Applied

Controlled

Applied

Comparison of growth between a single stick/ ear Controlled (left) and Applied (right)

Grain - Controlled

Grain - Applied

Conclusion:

With good farming practice and maintenance of proper protocol, ONIT Grow™ can bring an amazing effect on yield and output of crop. Most importantly, this output is achieved by using a 100% organic NON- GMO ONIT Grow™.

Field Trial coordinated and data input by: ShamsulAlam

Report compiled and prepared by: Jamal Ahmed and Iftekhar

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Test Results on Rice Field in Colombia

Rice Test

- Sampling date: July 9,2016.
- The 2 lots selectedfor sampling had reached maturityharvest.
- Sampling timebetween 110 to 115 days of planting.

Conclusion

- ✓ ONIT Grow™produced **increased plant height size, number of spikes and grains per spike** were higher.
- ✓ ONIT Grow™produced 114 pins versus the control test of 78 pins achieving an average **increase of46%**
- ✓ Effective Grains were **increased by 5% and Vain Grains diminished by 5%** relative to the control
- ✓ Total **increase in yield of 3.3 tn/Ha** using ONIT Grow™going from 6 tons/ha to 9.3t/ha.
- ✓ In economic terms this meant an increase of **55% to farmers income** when applying ONIT Grow™**.**

Technical Report to VITA-AGRO

Location: Hacieda Pajonales

Results in Rice Application: ONIT Grow™

1. DATA SAMPLING AREA

Height above sea level: 230 M.S.N.M

Average temperature: 26 ° C. Topography: Flat terrain.

2. PROCEDURE

Sampling date: July 9, 2016.

For the day of sampling the 2 lots selected had already reached its maturity harvest.

Both batches both test ALLGREEN as the witness, have the sampling time between 110 to 115 days of planting.

With the help of a square pipe made with P.V.C. 0.50 m the number of spikes side quadrant is counted, of which one (1) pin each quadrant is collected.

Said quadrant covers a quarter of 1m

It said three (3) times event is held in each batch as follows:

2.1.TEST LOT ONIT Grow™

Quadrant 1: 65 pin x 4 = 260 spikes / m²

Quadrant 2: 73 pin X 4 = 292 spikes / m²

Quadrant 3: 67 pin X 4 = 268 spikes / m²

X = 273 spikes / m² → 2'730.000 spikes / Ha

2.1 COMMERCIAL LOTS TESTED

Quadrant 1: 67 spikes x 4 = 268 spikes/ m²

Quadrant 2: 59 spikes X 4 = 236 spikes/ m²

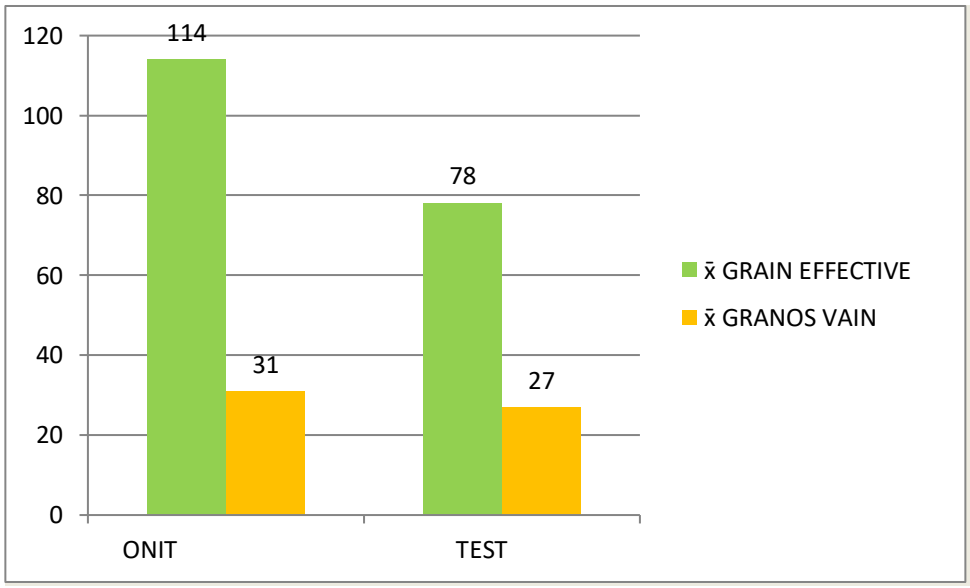
Quadrant 3: 67 spikes X 4 = 268 spikes/ m²

$\bar{X}$= 257 spikes / m² → 2´570.000 spikes / Ha

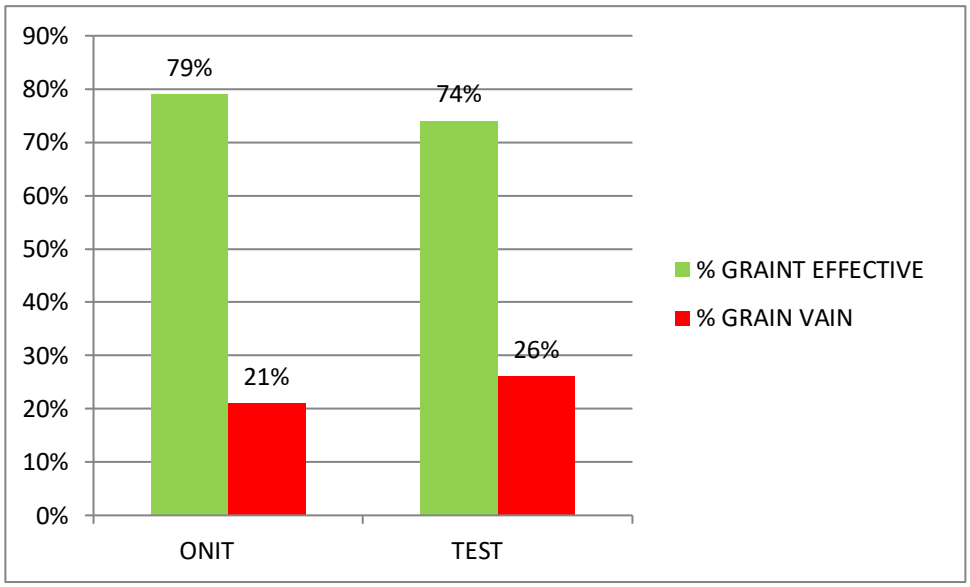
Table 1. GRAIN COUNT

	ONIT GROW™			TEST		
SPIKE	**1**	**2**	**3**	**1**	**2**	**3**
GRAIN EFFECTIVE	**105**	**110**	**127**	**70**	**93**	**70**
VANE GRAINS	**20**	**41**	**33**	**26**	**32**	**22**

Graph 1. AVERAGE OF GRAINS PER SPIKE



Graph 2. PERCENTAGES OF EFFECTIVENESS OF SPIKE



3. **CALCULATIONS OF PRODUCTION**

Through field sampling that are representative of what happens in the cultivated area, we can establish a projection of production that can be achieved in this cycle.

We must take into account the weather events such as rain and strong winds that cause rollovers and landslides grain; as well as the work of mechanized harvesting, factors which together cause significant loss of effective grains that cannot be exploited because they have fallen to the ground and are scattered in the lot.

For this calculation it will be a projection based on sampling, the average values of both ears of corn Grains as well Effective taken:

PRODUCTION TEST 3.1 ONIT Grow™

1 ear → 114 Grains Effective 273 Spikes → X
X = 31,122 grains / m² 10,000 m² X = 311'220.000 Grain / Ha

→ 1,000 grains weigh 30 gr

→ 311'220.000 grains weigh 9'336. 600 gr Then production is 9.3 tons /Ha.

3.2 PRODUCTION WITNESS 1 ear → 78 Grains Effective 257 Spikes → X
X = 20,406 grains / m² 10,000 m² X = 200'460.000 Grain / Ha

→ 1,000 grains weigh 30 gr

→ 200'460.000 grains weigh 6'013.800 gr Then production is 6tn /Ha.

When comparing production between the two treatments, an increase of 55% when using ONIT Grow™ is achieved, as is achieved increase 6 tons / ha to 9.3 t / ha with ONIT Grow™.

3. CONCLUSIONS

3.1 It is seen a marked toppling the edge of the lots, being higher in the lot where ONIT Grow™, where further development in plant height size of spikes observed and applied.

3.2 Both the number of spikes per square meter, as the number of grains per spike was higher when applying ONIT Grow™, as 78 pins obtained in the Witness, we get 114 pins, corresponding to have an increase of 46% ONIT Grow™ applying. (Figure1).

3.3 As shown in Figure 2, we got a 5% increase in the percentage of grains Effective using ONIT Grow™, and also diminish by 5% the amount of Vain grains relative to the control.

3.4 The percentages of effective grains and grains vain show importance in determining grain yield per hectare, since the calculation of that amount, shows a significant increase, going from 6 tons produced per hectare with the Commercial Witness,
9.3 Tn / Ha when ONIT Grow™ is used. (Graphic 3).

3.1 In economic terms for this case, achieve increased 3.3 Tn / Ha, it means receiving an income of more than 55% / Ha applying ONIT Grow™ in culture.

PHOTOS

PHOTO 1

Overview of the lots to be sampled

PHOTO 2

Use of the Spikes counting quadrant

PHOTO 3

Taking representative samples for each lot

PHOTO 4

The state of harvest maturity reached in the crop is appreciated

Evaluation of the ONIT Grow™ product in the cultivation of Black tobacco covered

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Introduction: The product ONIT Grow™ was evaluated in the cultivation of the black tobacco covered. in the UBPC " Felipe Herrera ", belonging to the company ABTLazaro Pena, with the objective of monitoring its potentialities. Recreational as features more attractive for cultivating encL1e11tran positive effect on the soil properties to increase availability water and increase the availability of nutrients which allow you reduce the volumes of fertilizer quimicos increasing efficiency programs fertilization. Therefore, the proposed protocol assumes the reduction of 190 kg /ha of formula complete. Being a product to naturally also represents a diminution of the load chemical in the culture another concerntoday.

Treatments

Witness

ONIT Grow™ with fertilization reduced Limic to 1t / ha, which represents 84% of what is established for cultivation in this technology.

In the block treated with the product, the following actions were carried out:

This replaced application fertilizer ql.1fmic·or momenta transplantation by a application of ONIT Grow™ SABER ground raz6n 800 ml / ha.

Chemical fertilization takes place from 8 to 10 days at a rate of 400 kg / ha ofcomplete formula 12-12-17-5 or 15 days nitrate of magnesium applied·foliar with addition of ONIT Grow™ to rate of 200ml / ha or between 18-20 days is fer the following tili!ac12,i6n chemistry at raz6n 600 kg / ha of complete formula-12-12-17-5 doneor25 days is applied magnesium nitrate foliar to the addition of ONIT Grow™ to raz6n 300ml / ha

The evaluations carried out were the main morpho agronomic variables: Length, Width, Fresh and dry mass of the leaf, in the central foliar level at the moment of the harvest. As fundamental result was observed an increase of blade width (Table 1) and the fresh and dry leaf (Table2).

Par hand higher values of fresh dough are good indicators of greater absorption of water plant. the increase in dry mass refers good efficiency in photosynthesis associated with good absorption nutrients are transformed into reserve theplant.

Table 1. Variations in the length and width of the central sheet.

Variables Agricultural	Blade length (cm)		Blade width (cm)	
	Witness	ONIT Grow™	Witness	ONIT Grow™
Average	52,31	51,73	33,6	34,06

Table 2. Increase in the fresh mass and dry of the collected leaves

Variables morfoagronomicas	Fresh dough (g)			Masaseca (g)
	Testigo	ONIT Grow™	Testigo	ONIT Grow™
Average	41,02	49,5	7,95	9,57

Also, foliar analysis of tobacco were performed, green and cured which illustrates the impact on chemical composition. Taking into account the results obtained in green tobacco, the plants treated contained more macronutrients (table 3) in the leaves with respect to the control; despite the reduction of chemical fertilization. Only phosphorus reaches lower values, although they remain within the limits described as normal for cultivation by Monzon(2009)

Table 3.Chemical composition in green tobacco Green,

Tobacco Verde*	% N	% P	% Ca	% Mg	% K
ONIT Grow™	2,85	0,18	4,09	0,40	2,59
Test	2,46	0,21	3,44	0,31	2,53

* All values are expressed as a percentage of matter dry.

In the case of the results of the analyzes to the tobacco, they cured show values lowering the plants treated with respect to the control, although they are tobacco and this technology.

Table 4: Chemical composition in cured tobacco

Curated Tobacco	% N	% Cl	% K	% P	% Ca	% Mg
ONIT Grow™	2,68	1,38	4,31	0,17	3,98	0,36

Test	3,64	1,97	5,47	0,17	4,38	0,44

Finally, the total yield and export layers were evaluated, where a slight increase of the export classes with respect to the control was reached (table 5). This 1 / o greater is of great value because the composition of classes describes the increase of the classes of the group 1 (Table 6)

Table 5: Total yield

Variables morfoagronomicas	Masa Fresca (g)		Consumo		Tripa	
	Peso (Kg)	%	Peso (Kg)	%	Peso (Kg)	%
Test	6.82	17	20.91	51	13.18	32
ONIT Grow™	12.27	18	30.91	45	25.91	37

Table 6: Composition of export classes

CLASSES	**TESTIGO**	**ONIT Grow™**
1er VisoSeco	1.4%	1.9%
2do VisoSeco	2.1%	2.5%
Capero	3.8%	3.4%
Banda Capero	4.2%	4.3%
1RA Carmelita	2.6%	2.7%
Banda seco Claro	2.9%	3.2%
Total Export:	**17%**	**18%**

Conclusions:

- The product ONIT Grow™ can be used in the cultivation or reduction of chemical fertilization although it may have influenced the lower chemical composition of the cured tobacco did not affect the production of high value layers.

- The positive effects of the product may be limited by the use of chlorinated water,an aspect that we cannot influence.

- Other strategies for the use of this product should be evacuated to show whether it is possible or not to improve the chemical composition of cured tobacco.

Recommendations

O Carry out the tests in the stage of production of seedlings

- Evaluate with the suppliers the limitations that determine the use of the product with chlorinated water for the product.

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Below are photos of our Gladiolus trials in Cuba.

INSTITUTO DE INVESTIGACIONES HORTICOLAS "LILIANA DIMITROVA"

Validation

Agronomic evaluation of ONIT Grow™ in the cultivation of Gladiolus *(Gladiolus spp.)* ***Under open field conditions.***

Principal Investigator: MSc. Alberto Igarza SánchezTec. George E. Díaz Castillo

Quivicán, June 2017

Introduction

The gladiolus is one of the most important cut flowers. Its elegant spikes, which have a rich variation of colors and sizes, are the reason for its ever increasing demand (Gowda et al., 1988, cited by Hernández, 2002). In Cuba the different ways to increase the quality and quantity of this flower are sought to satisfy this demand, the testing of commercial products for fertilization purposes is one more way to achieve a well- finished product. To carry out a correct fertilization program, one must know not only the nutrient consumption throughout the crop cycle but also its growth dynamics. The optimal curve of nutrient consumption defines the rate of application of a specific element and the amounts of nutrients that must be provided in times of greater needs, thus allowing a greater efficiency of fertilization (Rodríguez et al, 1994) (cited by Hernández, 2002). Although it is suggested by some authors that it is not a demanding crop in fertilizers, on the

contrary, the fertilizer will be made depending on the type of soil, precipitation and salt content of the land, but if it is of great importance a good contribution of fertilizers in order to achieve commercial quality flowers. Flower production requires new terrains or a long rotation. This can be limited to at least three years and disinfecting the soil.

In Cuba the demand for this flower is increasing, which demands the search of nutritious solutions and new products that guarantee, quantity and quality of it, is where ONIT Grow™ organic fertilizer with macro and micro nutrients in suspension with a composition of several Components based on concentrated cassava resin oil, green algae and fish oil are proposed to be validated by the central fertilizer registry of the Republic of Cuba, to evaluate the agronomic effectiveness of the product.

Abstract

The experiment was developed in the months of December-April 2016-2017, at the Liliana Dimitrova Horticultural Research Institute, in order to validate the agronomic effectiveness of the ONIT Grow™ product in the cultivation of the gladiolus (Amsterdam variety), on a Ferralitic soil. Typical red in open field conditions, three treatments were carried out with three replicates each in randomized plots, where ONIT Grow™ (Ag), ONIT Grow™ + Fertilizer (Ag + F) and Fertilizer (F) were applied, this last control, the agronomic parameters were evaluated, plant height (cm) every 15 days, chlorophyll content fifth leaf, foliar analysis at the beginning of the first harvest, quality of the flower stems in the crops, post-harvest conservation, quality of the corm for seed, and the economic indicators, the data were subjected to the analysis of simple classification variance, as a result it was obtained that no differences were found Significant among the treatments, it is feasible to use ONIT Grow™ as a fertilizer, for a profitability of 128.8% in the treatment where this product was applied.

Keywords: Gladioli, ONIT Grow™, open field.

Materials and methods.

The experiment was carried out in the months of December-April 2016-2017, at the Horticultural Research Institute Liliana Dimitrova, in order to validate the agronomic effectiveness of the ONIT Grow™ product in the cultivation of the gladiolus (Amsterdam variety of white color), used extra category caliber with an average perimeter of 15.1 cm, on a typical Red Ferralitic soil under open field conditions, the planting density was 150,000 corms ha and the area of the evaluable plot was 6.25 m^2.

The treatments consisted of:

1. ONIT Grow™(Og)
2. ONIT Grow™ + Fertilizer (Og +F)
3. Fertilizer (F) control

The applications of ONIT Grow™ were carried out in the treatments that took it as follows: One application in transplant and 8 more applications during 8 consecutive weeks (via foliar) with doses of 0.5 L / ha.

In the application of the treatments with fertilizers was carried out with the recommendations of 70kg/ haN, 56kg/ haP2O5and70kg/ haof K2O withthe complete formula 9-13-17 and Urea, all potassium and phosphorus 15 days after planting the corm and half nitrogen at 15 days and the other half at 45 days after planting the corm. The irrigation was done by spraying at the beginning of the plantation and after sprouts it continued superficial by furrows, once aweek.
Cleaning and hilling work was carried out during the vegetative cycle where the cultural conditions of the crop were maintained in good conditions

Evaluations

Height of the plant every 15 days (cm): From the soil to the highest leaf apex, to 10 plants by replicas, up to 60 days, where the flower spikes begin.

Leaf analysis on indicator sheets at the beginning of harvest: Phosphorus content (color development with vanadate-molybdate and visible spectrophotometry), potassium, calcium, magnesium (atomic absorption spectrophotometry measured directly on the diluted extract) and micronutrients (Cu, Fe, Z and Mn), before the beginning of the harvest. To do this, a foliar sample consisting of the sixth leaf of 30 plant sper plot was made, the samples were weighed and dried in an oven at 65^{o}C until constant weight, milled and subsequently the content of macronutrients was determined based on the material dry

Chlorophyll content by SPAD: It was made to 10 plants per replica in indicator sheets (fifth sheet).

Quality of the floral stems: In each harvest, all the cut floral stems were determined, the average length of the floral stem (cm), the average length of the inflorescence (cm), the number of flowers to open (u), the diameter of the first flower (cm) and the average diameter of the floral stem (cm).

Quality of the seed corm: Once the crop cycle was completed, a sample of 10 corms per plot was taken to determine the following external quality variable: perimeter of the corm (cm).

Pos tharvest: conservation for postharvest conservation, the ears were stored at room temperature, in containers containing 500 mL of water. The cut of the flower stems was carried out between 8:00 and 10:00 am,when the temperatures are lower (20,23^{o}C) and the relative humidity is high (86%). It was ensured that the floral stems for conservation presented homogeneity in their characteristics in terms of length, number of bells and that all show the first flower initiating its opening. Once in the post harvest laboratory, the length of the floral stem of all the ears was uniformized to 50 cm (making a longitudinal cut of the stem). The evolution of the weight of the stems (g) and the number of flowers opened at the beginning of the conservation and at 2, 5 and 7 days of life in vase were evaluated for each treatment understudy.

Economic indicators: For the economic evaluation of the results, the methodology proposed by FAO (1984) was used. The following indicators were calculated.
Yield (dec / ha): Total yield.

Value of production (pesos, CUP) yield: Total for the value of the flowers (a price of 24 pesos (CUP) / ten was considered).
Total expenditure (pesos / ha). Total sum of all the expenses obtained for the production in one hectare, for this it was considered an expense of $141735 / ha and for the treatments with application of ONIT Grow™, the price of the liter ($ 30 / L) for the number of applications in the cycle.

Net profit (pesos / ha): Difference between the value of production and total expenditure.
Profitability (%): *Benefit * 100 / cost*.
Value of the increase in yield or profit (weights): Difference between the value of the production of the variant fertilized at 100% and the variant of ONIT Grow.

STATISTICAL PROCESSING.

1. Analysis of variance of simple classification.
2. Transformation of the variables in%, using the formula (arcsen$\sqrt{}$P /100).
3. Tukey test with a level of significance of 0.05 in the cases that were necessary.

4. Statistical package: Statgraphics version 5.0 (USA SGC,2000).

Results and discussion.

Figure 1 shows the growth behavior of the evaluated treatments, there being no significant differences between them, showing normal growth, with the effectiveness of the ONIT Grow™ product.

Figure 1. Behavior of the growth of the treatments evaluated (cm).

Table 1 shows the behavior of the content of nutrients in gladiolus leaves at 66 days after planting (ddp), where it can be seen that there is a tendency to have a greater content of the control treatment (application of fertilizer), the rest of the treatments showed a normal behavior, according to Hernández (2002)

Tabla 1. Nutrient content in the leaves at the beginning (66 ddp).

Treatments	P(%)	K(%)	Na(%)	Ca(%)	Mg(%)	Zn(ppm)	Cu(ppm)	Mn(ppm)	Fe(ppm)
Og	0,57^{b}	4,91^{c}	0,05	1,45^{c}	0,16^{a}	13,24^{c}	13,28^{c}	137,37^{b}	231,45^{c}
Og+F	0,52^{c}	5,16^{b}	0,04	1,73^{b}	0,11^{b}	15,93^{b}	14,91^{b}	114,39^{c}	265,83^{a}
F	0,64^{a}	5,35^{a}	0,04	2,15^{a}	0,16^{a}	20,55^{a}	16,26^{a}	145,45^{a}	238,83^{b}
ES	1,29***	0,19***	0,002^{NS}	0,31***	0,02***	3,2***	1,29***	13,96***	15,79***
CV(%)	9,66%	3,78	3,49	17,32	17,48	19,35	8,76	10,55	6,44

Figure 2 shows the behavior of the chlorophyll determined through the SPAD instrument, the Og treatment shows a better behavior, with a higher content of chlorophyll and nitrogen, all this favors notably the crop for the development of the same, because the Nitrogen deficiency translates into a smaller number of flowers and smaller inflorescences, which decreases the quality of the flower (Soriano, 2016).

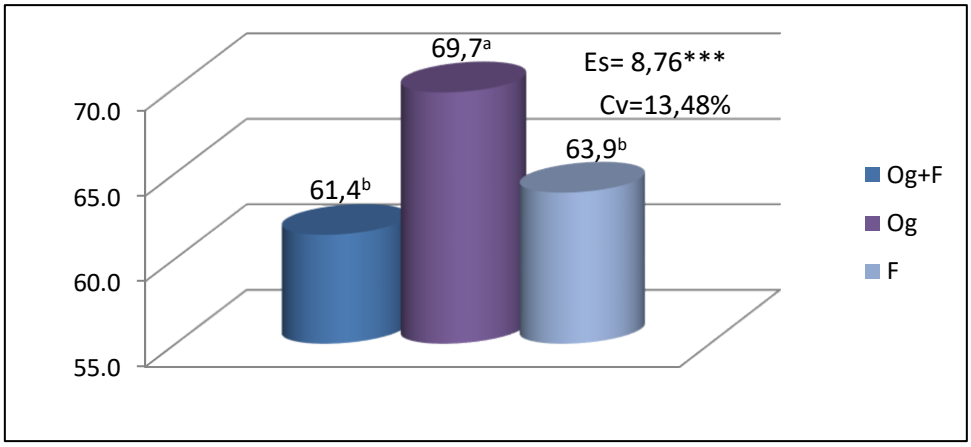


Figure 2. Chlorophyll before harvest (55 dpd), fifth leaf

Regarding the evaluation made to the floral stems can be seen in figure 3, the length of the floral stem of the three treatments were within the established parameters, to consider them extra quality flowers with more than 80 cm in length, without differences significant among them, this important element in the commercialization of flowers, the length of the inflorescence also showed values higher than 30 cm.

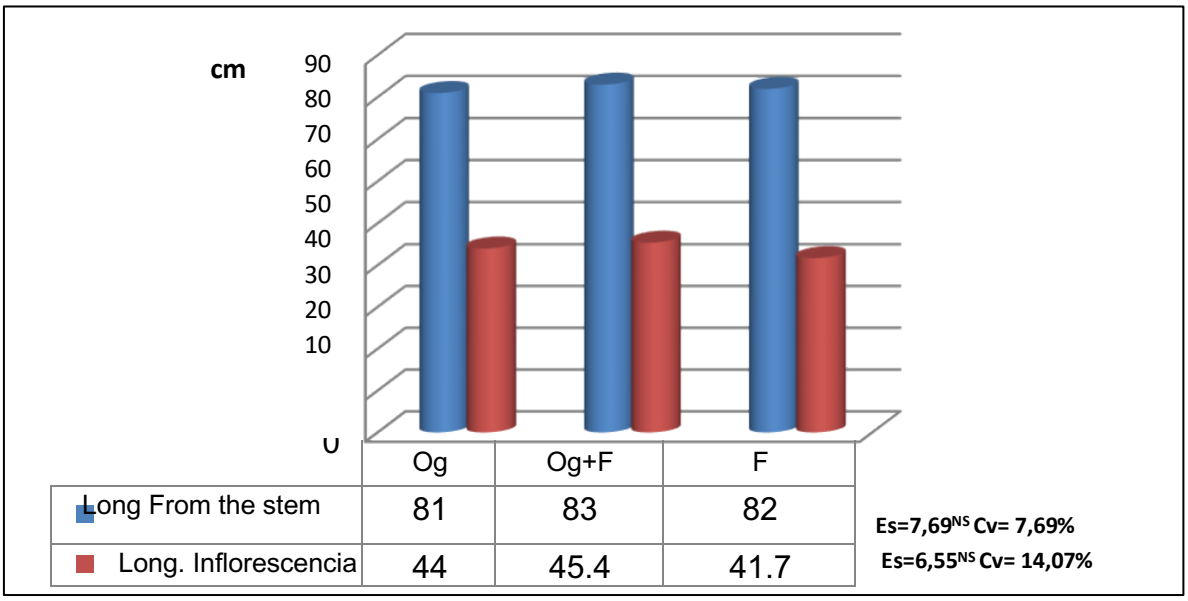


Figure 3. Behavior of the length of the floral stem and the length of the inflorescence

Among the parameters that can also determine gladiolus quality (Figure 4), we have the number of flowers to open this with significant differences in favor of Og + F treatment, diameter of the first flower without significant differences and the diameter of the floral

stem, with significant difference favorable to Og treatment, although all these values are considered extra quality flowers.

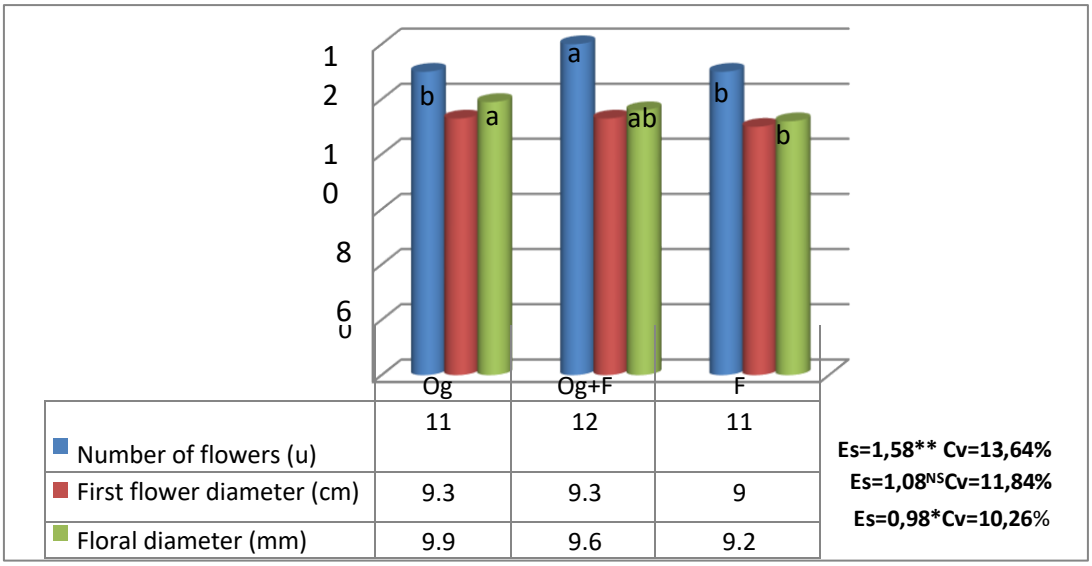


Figure 4. Gladiolus quality parameters.

In the evaluations carried out in the postharvest, it can be observed (Table 2) significant differences in the study made to the evolution of the weight loss in the flower stems, although there is a correspondence between the treatments throughout the evolution of the cycle evaluated in terms of the loss of weight, for the concept of water consumption at the beginning of thetest.

Table 2. Evolution of the weight of the stems (g).

Treatments	Days of life in vase			
	Start	2	5	7
Og	49.80^{to}	59.90^{ab}	53.74^{to}	46.70^{b}
Og + F	49.81^{to}	60.10^{to}	53.89^{to}	47.10^{to}

F	43.40 b	54.54^{c}	48.60^{b}	43.10^{c}
Is	3.2 ***	2.73 * **	2.61 ***	1.9 ***
Cv (%)	6.72	4.69	5.0	4.17

Table 3 shows the quality parameters evaluated during the vase life, the number of flowers opened in two and five days in vase increased in correspondence with the water consumption and the weight of the flower stems, without significant differences to the fifth and seventh day, reaching its peak of commercial quality.

According to Reyes (2012), the number of bells per spike is directly influenced by the genotype of the variety chosen, although the environmental and soil conditions modify the capacity to produce flowers, generating stress conditions in the plant

Table 3. Number of open bells.

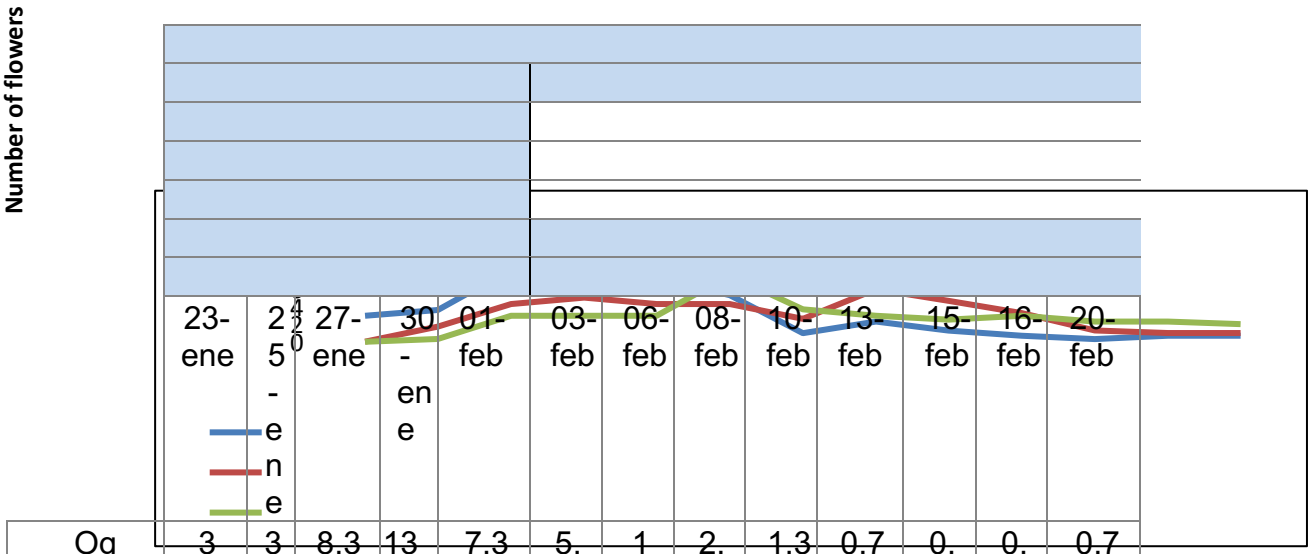
Treatments	***Days of life in vase***			
	Start	***2***	***5***	***7***
		# of bells		
Og	*6.3*	*8.6*	*9.7*	*9.2*
Og + F	*8.3*	*9.7*	*9.0*	*10.7*
F	*6.3*	*8.3*	*10.3*	*9.0*
Is	*1.02* ***	*0.67* ***	*0.78^{NS}*	*1.04^{NS}*
Cv (%)	*14.6*	*6.8*	*8.1*	*10.8*

The perimeter of the corms evaluated at the end of the crop cycle (Figure 5), also showed no significant differences between the treatments, considering these values as extra quality corms.

16.80	Og	Og+F	F
Perimeter (cm)	17.64	17.62	17.12

Figure 5. Perimeter of the corms, at the end of the crop cycle.

In Figure 6, the behavior of the flowers harvested by treatment is observed, where an advance of 11 days is observed in terms of the greatest number of flowers harvested in the treatment where ONIT Grow™ was applied, this element being important at the moment of defining a concentration of flowers, for a given demand.



	23-ene	25-ene	27-ene	30-ene	01-feb	03-feb	06-feb	08-feb	10-feb	13-feb	15-feb	16-feb	20-feb
Og	3	3.6	8.3	13	7.3	5.3	1	2.3	1.3	0.7	0.3	0.7	0.7
Og+F	0	1.7	4.3	5	4.3	4.3	2.6	6	4.7	3.3	1.3	1	1
F	0	0.3	3	3	3	7.6	3.7	3	2.5	3	2.3	2.3	2

Figure 6. Behavior of the number of flowers harvested per treatment.

The yield of the crop is shown in figure 7, showing better behavior treatment treated with ONIT Grow™, significant product benefit from its ability to increase production.

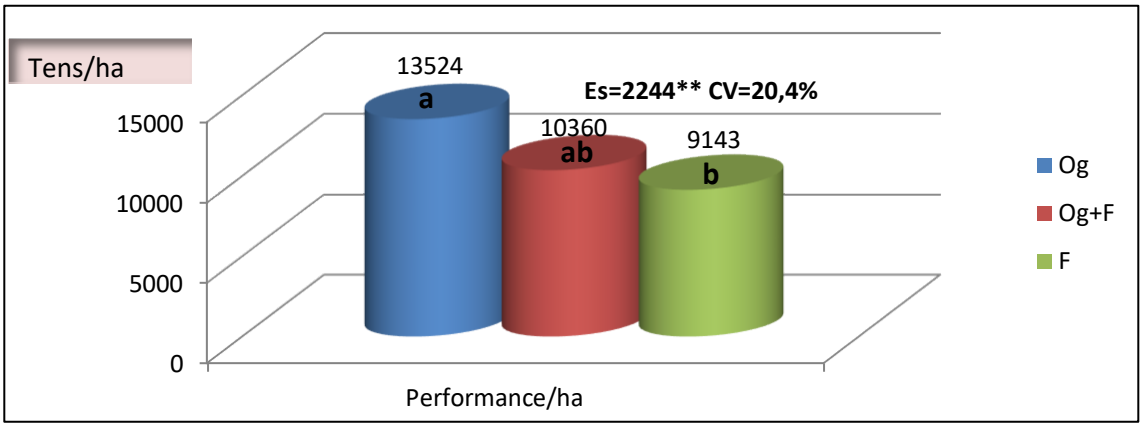


Figure 7. Yield of gladiolus per treatment (dec / ha).

As another important element obtained in the test of the product, which led to the performance of each treatment was the flowering percentage of the treatments, shown in Figure 8, having better behavior with 90.2% treated with ONIT Grow™.

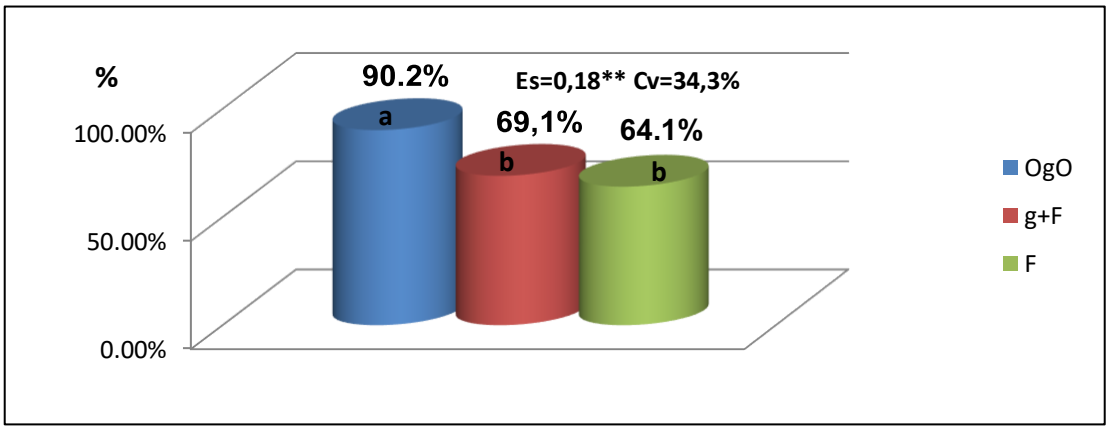


Figure 8. Percentage of flowering of the treatments evaluated.

In the economic evaluation carried out, a price of 24 pesos (CUP) / decade was considered, a higher value is observed in the treatment where the ONIT Grow™ was applied (Figure 9).

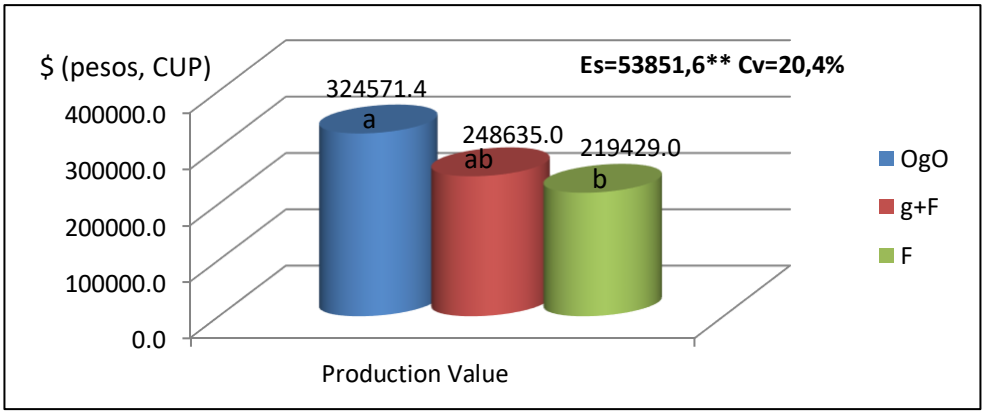


Figure 9. Behavior of the value of the production of the treatments evaluated.

Figure 10 shows the behavior of the benefit, with better performance ONIT Grow™ treatment.

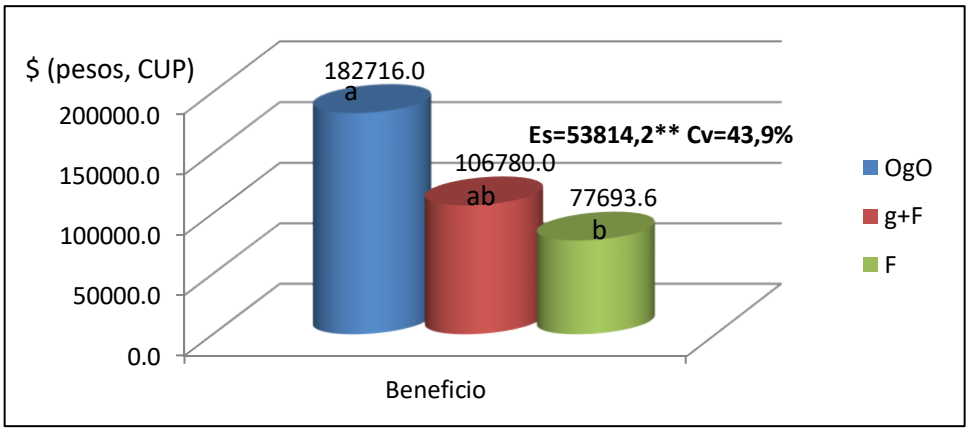


Figure 10. Benefits of the crop in the different treatments.

The profitability behaves as shown in figure 11, where it is appreciated that in the treatment treated with ONIT Grow™, it is higher than 100%, due to the price reached by the gladiolus flower in the market, having the same greater capacity to generate gain.

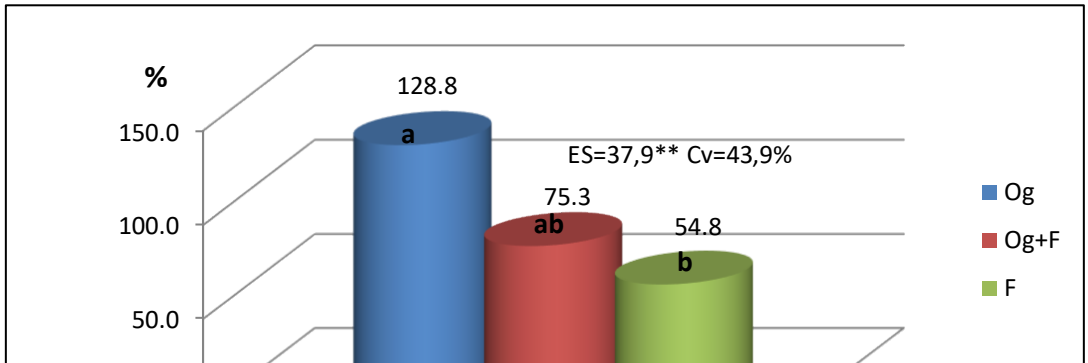


Figure 11. Profitability (%) of the treatments evaluated.

Conclusions

• With the use of the product an advance of 11 days in the harvest is achieved in relation to the rest of the treatments.

• The ONIT Grow™ product showed, in all the evaluations carried out, the ability to improve the quality of the gladiolus flower.

• Increase in performance, improving the ability to generate profits and profitability.

Recommendations.

• That the ONIT Grow™ product be included in the fertilizer register of theSoil Institute.

WORK TEAM

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Ministry of Agriculture Agro-Forestry Research Institute (INAF) Jibacoa Agro-Forestry Experimental State

Ministry of Agriculture Institute of Agro-Forestry Research (INAF) Experimental Station Agro-ForestalJibacoa Preliminary report on the effectiveness of ONIT Grow™on the development of coffee postures.

INTRODUCTION

The ONIT Grow™ ™ product is a plant-based extract, non-transgenic, no carcinogen, biodegradable and safe for use in all soil conditions, stimulates the absorption of nutrients and water in the plants, increases the natural capacity of the plant to absorb nutrients through its own foliage, while increasing the Root development and soil absorption, accelerates the transport of nutrients to the cellular, resulting in better photosynthesis and greater water absorption and minerals http://www.onitsciences.com/

ONIT Grow™ is a colloid. Improves the mobility of nutrients in crops drastically reducing the surface tension of the water and the nutritive solutions of the plants, works mainly as a path of nutrients and humidity within the xylem of the culture and circulation system of the phloem.
ONIT Grow™ increases the production of sugars in plants, helps to transfer NPK nutrients and trace elements through the reduction of surface tension and viscosity in vegetable sugar, creating a path natural to transport nutrients and sugars through leaves, stems and roots with a minimal energy

It is an organic product free of toxic or dangerous components, and it does not contain hormones, heavy metals, pesticides or carcinogens, the manufacturer ensures that ONIT Grow™ is suitable for use in any soil or region and is safe for all plants, humans and animals.

Materials and methods

Evaluate the effect of ONIT Grow™ organic fertilizer on the development of Coffee postures.
TEST

The trial was carried out at the UCT B Jibacoa Agro-Forestry Experimental Station, province of Villa Clara, at a height of 340 m.s.n.m. during the months covered between May and June 2017. A randomized block design with six treatments and three replicas each, using the variety Ferno and Isla 6-11.

Treatments:

- T1. Application of ONIT Grow™ to1%.
- T2. Application of ONIT Grow™ at2%.
- T3. Application of ONIT Grow™ at3%.
- T4. Application of ONIT Grow™ to4%.
- T5. Application of ONIT Grow™ to5%.
- T6. Witness.

Applications were made in the months of May and June as indicated by the treatments, the ONIT Grow™ according to its foliar and soil concentrations. An assessment of the incidence of pests and diseases before the application of the product. The infection and infestation of the postures by the major pests and diseases that affect the crop in the study area, among the Cercospora (CercosporacoffeicolaBerkCKc); Anthracnose (ColletotrichumPenzgloeosporioides) and leafminer of the coffee tree (PerileucopteracoffeellaSilvestri). These were carried out according to the methodologies for coffee cultivation proposals by Vázquez and Monteagudo (1998), Guerreiro (1989) and Castillo (1997). After 50 days have elapsed, it can be seen preliminarily that the currently best treatments are treatments 3 and 5 where the product is applied in the concentrations of 3% and 5%, although all the other treatments surpass the witness.


T-1
T-2
T-3
T-4
T-5
T-6

FINAL report of Demo Trial on Pineapple in Bangladesh

Field Trial conducted at: Private farmer, Mymensingh, Bangladesh

Date: 06 July, 2017

No. plants under trial :100

1. **Country**: Bangladesh, Area:Mymensing

2. **Crop:** Pineapple. **Season**: August, 2016 - July, 2017 (**Honey Queen** and **Giant Kew** variety)

3. **Harvesting**: Once in total cropcycle

4. **Dilution ratio with water**: 1: 1000 (for all applications)

5. **No of ONIT Grow™ applications**: **3 (1st. application started late, from March,2017)**

Final and aggregated Yield report as on 14 June, 2017

Description	Controlled (NON-Treated)	**Applied** ONIT Grow™	Remark
1. Weight of matured Pineapple	**2.30kg (ave.)**	**2.80kg (average)**	22% weight gained.
2. Taste	**Less sweet**	**More sweet (i.e. more sugar content) and Juicy**	

Comments:

1. Only 3 applications (spray) were done because the crop was already half way when the application was started.

2. Despite that, the weight gain and the shape of the fruit is significantly uniform better than the controlled one.

3. In controlled part, growth hormone, chemical agent for early maturity and ripening (ethophen, ethrel, carbide etc.**) was applied** from the beginning at regular interval until harvesting.

But in the applied part, only ONIT Grow™ was applied, nothing else.

4. All other inputs e.g irrigation, fertilizers, pesticide, weed controller etc. were exactly the same in both the fields.

5. The pineapple from applied part is being treated as organic product by the locals and price was considerably high.In Bangladesh, around 95% of pineapple are produced with growth hormones which are being treated as health hazard by general people. So, the acceptability of ONIT Grow™ applied pineapple will be very high resulting in more income from the farmers.

6.It is expected that regular application starting from sucker treatment will bring better results.

Cost Benefit Analysis based on above Yield

For 100 Plants, the cost of 3 application (15ml) including labour of ONIT Grow™ is: USD 1.25. Average sales price of Hormone treated Pineapple: USD 0.45 / pc.
Average sales price of ONIT Grow™ treated Pineapple: USD 0.65 / pc.

Extra benefit from 100 pineapple: USD 0.20 x 100 = **USD 20**

So, Net Profit to farmer: US$ 20.00 – US$ 1.25 = US$ 18.75 (from 100 plants)
Cost : benefit = 1 : 15
So, farmer is investing only US$ 1.25, Earning US$20.00 and getting net profit of US$18.75

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ONIT Grow™Applied Pineapple (2.80kg)

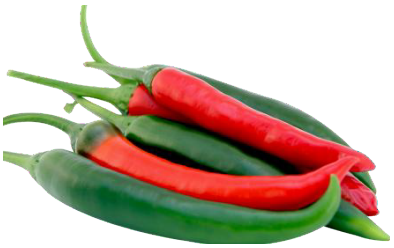
Weighing of ONIT Grow™ applied Pineapple

Pineapple (controlled) 2.30kg

FINAL report of Demo Trial on Chili in Bangladesh

Field Trial conducted at: Private farmer, Dinajpur, Bangladesh

Date: 16 June, 2017



Field Area: 0.08 Acre for both controlled and applied

1. **Country**: Bangladesh, Area:Dinajpur
2. **Crop:** Chili. **Season**: February - June,2017
3. **Harvesting**: 4 times Harvesting in the total cropcycle.
4. **Dilution ratio with water**: 1:1600 (for all applications)
5. **No of ONIT Grow™ applications**:**4** **Frequency of application:** Every 2weeks.

Final and aggregated Yield report as on 14 June, 2017

Description	Controlled (NON-Treated)	**Applied** ONIT Grow™	Remark
1. No. Chili in 5 plants (ave.)	**262**	**283**	Apx. 8% extra no. of Chili.
2. Yield From 0.08 acre of both controlled and applied part of field.	1st harvest : 70 kg 2nd harvest: 151 kg 3rd harvest: 168 kg 4th harvest: 65 kg **Total: 454 kg**	1st harvest : 74 kg 2nd harvest: 157 kg 3rd harvest: 175 kg 4th harvest : 70 kg **Total: 476 kg**	22kg extra . Apx. 5% extra Yield by weight

Comments :

1. Only 4 applications (spray) were done. Further spray could not perform due to blooming of flower and rainy weather.

2. Il there are some green chili in both the part, but no more harvesting will be done.

3. In applied part of field, some qty. chili found spotted and rotten due to unknown reason.That problem was not noticed in the controlled part.

4. All the inputs e.g irrigation, fertilizers, pesticide, weed controller etc. were exactly the same in both the fields.

5. There is another variety of Chiliin Bangladesh called "Summerchili" which commands very high market price. That variety is being planted now.

Cost Benefit Analysis based on above Yield

The basis is 5% increase in Yield in paddy output **per 0.08 Acre**

Production in controlled field:

476kg Production in applied

field: 454 kg

So extra production: 22kg i.e 5% extra

Yield. Average sales price of Green Chili

= US$ 0.50/kg* So, extra earning = 22

kg x US$ 0.50/kg= US$ 11.00 ONIT

Grow™ used = 40 ml (for 4 spray)

Farmer's expenses = US$ 2.50 (40ml ONIT Grow™ cost + Labor)

So, Net Profit to farmer: US$ 11.00 – US$ 2.50 = US$ 8.50 (from 0.08 Acre)

Cost: benefit = 1 : 3.4

So, farmer is investing only US$ 2.50, Earning US$11.00 and getting net profit of US$ 8.50

Current market price of Green Chili in Bangladesh. (BDT 40/- per kg =USD0.50/kg)

Field Trial coordinated and data input by: Mr. Niaz Ali and Mr. Sajib

Report compiled and prepared by: Jamal Ahmed and Iftekhar

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