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Efecto del dispositivo Kyminasi *Crop Booster* en cultivo maíz (*Zea mays*) granja experimental Universidad Francisco de Paula Santander Ocaña

Effect of the Kyminasi Crop Booster device on corn (Zea mays) experimental farm Universidad Francisco de Paula Santander Ocaña

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Resumen

El *Crop Booster* es una alternativa tecnológica aplicada a la agricultura que ha sido creada con el fin de mejorar la eficiencia de la planta. Su sistema de riego optimiza tanto la cantidad como la calidad, ayudando a las plantas a crecer más fuertes y saludables, además de mejorar la disponibilidad de nutrientes en el suelo, la densidad de las raíces y equilibrar la absorción de los macro y micro elementos en las plantas. Como objetivo, se desea evaluar el impacto del *Crop Booster* en un sistema de riego del cultivo de maíz. La metodología aplicada en la investigación fue de tipo experimental y comparativa, en la cual se utilizó el diseño de cultivos divididos: con la tecnología *Crop Booster* y ella. De acuerdo con los resultados, la aplicación del *Crop Booster* evidencia aumento en el rendimientode los cultivos, mostrando así ser una alternativa que ayuda en el rendimiento del forraje verde del cultivo de maíz (*Zea mays*) con una producción extra de 61302 kg FV e incremento de la calidad enun 2,66%.

Palabras clave: Kyminasi, *Crop Booster*, bioestimulante, planta, ondas de resonancia, maíz, frecuencias electromagnéticas cuánticas, citoalgorítmico, citoalgoritmos

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Abstract

The C*rop Booster* is a technological alternative applied to agriculture that has been created in order to improve the efficiency of the plant. Its irrigation system optimizes both quantity and quality, helping plants to grow stronger and healthier, as well as improving the availability of nutrients in the soil, the density of the roots and balancing the absorption of macro and micro elements in the plants. As an objective, it is desired to evaluate the impact of the *Crop Booster* in a corn crop irrigation system. The methodology applied in the research was of an experimental and comparative type, in which the divided crop design was used: with *Crop Booster* technology and without it. According to the results, the application of the *Crop Booster* shows an increase in crop yield, thus proving to be an alternative that helps in the yield of green forage of the corn crop (*Zea mays*) with an extra production of 61,302 kg FV and increase in quality by 2.66%.

Keywords: Kyminasi, *Crop Booster*, biostimulant, plant, resonance waves, corn, quantum electromagnetic frequencies, cytoalgorithmic, cytoalgorithmic, cytoalgorithms

Introduction

Food security, population growth and improving crop yields in the face of climate change are some of the greatest challenges facing humanity [1], [2]. The *Crop Booster* is a new technology that uses quantum electromagnetic frequencies called cytoalgorithms, to improve plant metabolism, plant and soil health [3], [4].

While it is true that an automated irrigation system can solve some problems that exist in the field, the implementation of technological resources can achieve even greater efficiency in its production [5]. It is emphasized that a technified irrigation system directly impacts the quality of life of rural families, for whom this technology would represent water savings in agricultural use, resulting in a significant increase in the productivity of their crops [6]; [7].

Crop Booster is a technology based on the use of a microtransmitter. This emits a high number of resonant wave frequencies of the same type as those produced by the vibration of atoms of the same plant, affecting its health and performance both physically and chemically. It leverages the water used for irrigation to transport the frequencies that the plant species needs to develop. In other words, water acts as a carrier of information to deliver the data stored in the microtransmitters to the plants [8], [9], [10].

The implementation of this technology would lead to a significant advancement in agricultural production since it is evident that the Colombian countryside is facing a growing crisis due to prolonged periods of both heavy rain and drought, along with inadequate production practices, resulting in land deterioration [11].

The effects of Crop Booster technology on the soil, as stated in [12], indicate that the soil is considered a living system, as it requires available nutrients and a proper structure where the interaction of all its elements - biological, chemical, and physical - is evident. Together, these elements support various organisms. Soil is a crucial factor in the development of crops, as they directly depend on the interaction with fertile soil for the optimal growth of plants.

Furthermore, the *Crop Booster* system allows for the improvement of soil health as it promotes the ionic exchange of minerals and helps prevent the leaching of nutrients present in it, resulting in an increase in the availability of micronutrients. Additionally, there is a recorded increase in the activity of nitrogen-fixing bacteria, whose function is to convert nitrogen present in nitrates and nitrites, prevent excessive evaporation of nitrogen from moist soils, and increase root density, leading to a decrease in soil compaction characteristics [13], [14].

Regarding its operation, the *Crop Booster* technology advances through the irrigation system, carrying quantum electromagnetic frequencies to the crops, with the aim of promoting their development, growth, and yield [15]. Matter is composed of atoms, which consist of protons, neutrons, and electrons that are in constant motion. This movement translates into vibrational energy, where each individual molecule remains fixed; however, if they vibrate next to each other, they combine and form their own frequency [4].

Indeed, the frequencies transmitted by *Crop Booster* align with the natural molecular frequencies of both plants and soil, resulting in an improvement in their functions and leading to healthy plants with accelerated growth and higher production; thus, making it more profitable [2].

As such, *Crop Booster* is a new technology that uses quantum electromagnetic frequencies to improve plant metabolism, plant health, and soil health [7]. Some of the benefits that this technology provides include low cost, a lifespan of 2 years from its first use, easy installation and usage, reduced production costs, faster growth, increased crop yield, improved taste and quality, water savings, reduced use of pesticides and fertilizers, etc. [16], [17].

The use of such innovations in technology enables greater efficiency in the production process, as it allows for better utilization of available resources for the plants. Crop rotation alone does not prove sufficient to prevent nutrient loss and soil depletion. Therefore, the main objective was to produce corn of the species (*Zea mays*) using the bio-stimulant technology *Crop Booster* and to establish the percentage increase in yield of the corn varieties in relation to the use of the *Crop Booster* device. This was achieved by comparing the application of the *Crop Booster* irrigation system technology with its absence in the experimental farm of the Francisco de Paula Santander University in Ocaña.

This study utilized two fields, one with *Crop Booster* technology and the second as a control field. Soil samples were taken at the beginning of the cultivation and at the end of the harvest in both fields. The growth rate was evaluated at 4 stages of the crop: 25%, 50%, 75%, and at the time of harvest. Variables such as plant height, stem thickness, leaf width, and number of leaves were analyzed to indicate the differences between the two experienced fields. The research was of an experimental and comparative nature, contributing to the field of research and the use of new technologies applied in agriculture. The sources of information collection included primary sources through direct observation, and secondary sources such as books, scientific journals, theses, research bulletins, etc.

Materials and methodology

For the development of this article, the applied methodology in the research was experimental and comparative, contributing to the field of research and the use of new technologies applied in agriculture, where the *Crop Booster* device was evaluated in the irrigation system [18], [19]. This study was carried out on the experimental farm belonging to UFPSO, which is located at an altitude of 1202 masl and an average temperature of 22°C.

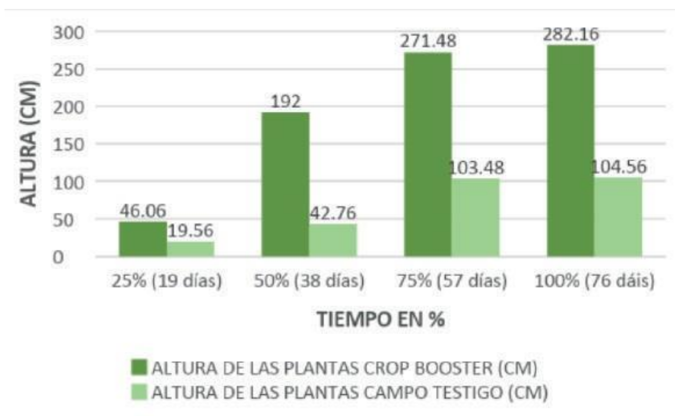
For the realization of the study, two fields with similar soil characteristics were used, both planted with the same crop, maize (*Zea mays*), and following standard management practices. These fields were used to compare two irrigation systems: the traditional irrigation system versus the *Crop Booster* technology [20].

Results and discussion

Evaluation of the vigor of maize plants (Zea mays) in crops, with respect to Crop Booster and control field

The growth rate was evaluated in four stages of the culture; in 25%, 50%, 75% and at harvest, an ANOVA (Analysis of Variance) was performed to analyze the variables of the two fields over time and comparing the two fields according to the percentage of plant development as:

Plant height: In the *Crop Booster* field at the harvest stage, a height of 282.16cm was obtained compared to the control field with a height at harvest of 104.56cm (Graph 1).



Graph 1. Plant height.

Plant height with respect to time; It can be seen in the graph that the *Crop Booster* field obtained a continuous difference from the beginning of the sowing of 20 cm until the end of the harvest of 170 cm of difference with the control field. Own authorship.

Plant Height Comparison

Table I shows that in the Crop Booster field there are significant differences in each percentage of evolution of the height of the plant and in the control field the significant difference is observed in the evolution of 25 and 50 % of the plant except the 75 and 100% in which the evolution of the height of the plant ends.

Table I. Plant height comparison within each field

% (days)	*Crop Booster*	Control Field
25 (19 days)	46,06 ± 10,89 [a]	19,56 ± 4,20 a
50 (38 days)	192,00 ± 12,18 [b]	42,76 ± 13,97 b
75 (57 days)	271,48 ± 6,19 [c]	103,48 ± 24,51 c
100 (76 days)	281,16 ± 3,44 [d]	104,56 ± 28,87 d
P – valor	0,000	0,000

Table I shows that the height of the *Crop Booster* field obtained greater growth over time since the plants assimilate nutrients better and in the control treatment it is observed that the plant did not obtain the necessary nutrients from the soil for its development.

Comparison over time in plant height

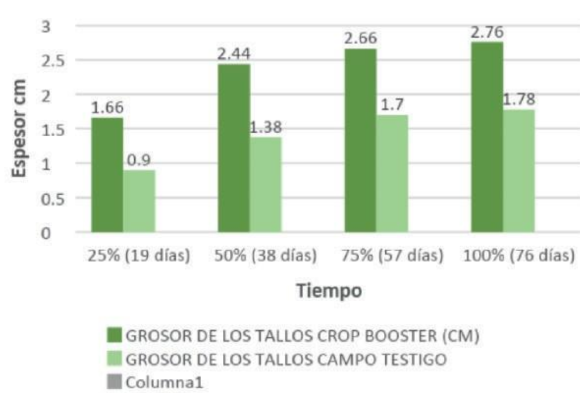
Table II shows the monitoring of the two fields showing significant differences over time.

Table II. Comparison of fields over time at plant height

Treatment	25% (19 days)	50% (38 days)	75% (57 days)	100% (76 days)
Crop Booster	46,06 ± 10,89	192,00 ± 12,18	271,48 ± 6,19	281,16 ± 3,44
Control Field	19,56 ± 4,20	42,76 ± 13,97	103,48 ± 24,51	104,56 ± 28,87
P – valor	0,000	0,000	0,000	0,000

Table II shows that there is a significant difference between the two treatments over time because the *Crop Booster* field obtained a greater height day after day in its plants thanks to the efficient absorption of nutrients from the soil and through photosynthesis than the field control. Own authorship.

Stem Thickness. The *Crop Booster* obtained a stem thickness of 2.76 cm and in the control field a thickness of 1.78 cm (Graph 2).



Graph 2. Stem Thickness

Stem thickness in the time elapsed until harvest, giving a difference between the two study fields because the *Crop Booster* field, having a better root system and greater photosynthetic efficiency, increased the growth of the stem of each plant within the field, with a difference of 1 cm in thickness of the stem in the stages of time. Own authorship.

Comparison of stem thickness within each Field.

Table III shows the significant difference in the *Crop Booster* field with a stem thickness growth except from 50% to 100% and in the control field there is a significant difference within the field, outside of 75 and 100%.

Table III. Stem thickness comparison within each field

% (days)	*Crop Booster*	Control Field
25 (19 days)	1,66 ± 0,43[a]	0,97 ± 0,37[a]
50 (38 days)	2,4 ± 0,36[b]	1,38 ± 0,31[b]
75 (57 days)	2,66 ± 0,45[b]	1,70 ± 0,34[c]
100 (76 days)	2,76 ± 0,44[b]	1,78 ± 0,33[c]
P – valor	0,000	0,000

The sequence within each field is differentiated because the Crop Booster field showed a moderate growth in stem thickness due to the efficiency of photosynthesis and the plant's root system, whereas in the control field, a slow stem thickness growth was observed due to the lack of necessary nutrients from the soil.

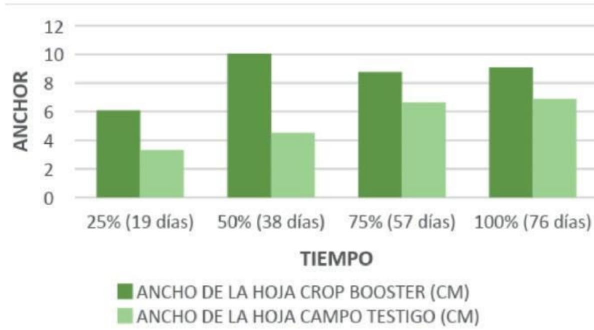
Comparison of the fields over time in the stem thickness.

In Table IV, it is observed that the stem thickness over time in the *Crop Booster* field is greater than in the control field because the plants in the *Crop Booster* field, through the use of the device, were more efficient in nutrient absorption and photosynthesis. This led to a difference of 1 cm in stem thickness compared to the two fields.

Table IV. Comparison of the fields over time in the stem thickness.

Treatment	25% (19 days)	50% (38 days)	75% (57 days)	100% (76 days)
Crop Booster	1,66 ± 0,43	2,4 ± 0,36	2,66 ± 0,45	2,76 ± 0,44
Control Field	0,97 ± 0,37	1,38 ± 0,31	1,70 ± 0,34	1,78 ± 0,33
P – valor	0,000	0,000	0,000	0,000

Leaf Width in Field: In the fields, the leaves had differences at the end of the harvest of 9.08 cm in the *Crop Booster* field and 6.89 cm in the control field (Graph 3).



Graph 3. Leaf Width

Graph 3 shows the difference in the width of the leaves, because a photosynthetic efficiency was obtained in the leaves of the *Crop Booster* field plants over time.

Comparison of leaf width within each field.

Table V shows the significant difference in each of the fields with respect to the evolution; except that in 75% and 100% of each field there is a respective relationship

TABLE V. Comparison of leaf width within each field.

% (days)	*Crop Booster*	Control Field
25 (19 days)	6,08 ± 1,27[a]	3,31 ± 0,74[a]
50 (38 days)	10,06 ± 3,00[b]	4,52 ± 1,27[b]
75 (57 days)	8,75 ± 0,70[c]	6,63 ± 0,96[c]
100 (76 days)	9,08 ± 0,70[c]	6,89 ± 1,02[c]
P – valor	0,000	0,000

A constant trend can be observed from 75% to 100% in both fields because in the Crop Booster field, the efficiency of photosynthesis helped achieve a greater leaf width over time, whereas in the control field, photosynthetic efficiency was not achieved, as evidenced by the narrower leaf width in that field.

Comparison of the Fields over Time in Leaf Width:

Table VI shows the significant difference in the comparison of the two fields with a better leaf width in the Crop Booster field compared to the control field.

TABLE VI. Comparación de los campos a través del tiempo en el ancho de la hoja

Treatment	25% (19 days)	50% (38 days)	75% (57 days)	100% (76 days)
Crop Booster	6,08 ± 1,27	10,1 ± 3,0	8,75 ± 0,69	9,1 ± 0,70
Control Field	3,31 ± 0,74	4,52 ± 1,3	6,63 ± 0,96	6,9 ± 1,01
P – valor	0,000	0,000	0,000	0,000

Table VI shows a better width of the leaf in the Crop Booster field over time than the control field because through the device the plant had a better efficiency in photosynthesis for leaf development.

Number of Leaves: In the fields the number of leaves was obtained a difference of 11.64 leaves in the *Crop Booster* field and 9.16 leaves in the control field (Graph 4).

Graph 4. Number of Leaves

This graph 4 explains the number of leaves found in each field with a difference of 3 leaves between fields.

Comparison of the number of leaves within each field

Table VII shows within each field the significant difference in the number of leaves; expressing the relationship of 75% and 100% in the number of leaves, in each of the fields.

Table VII. Comparison of the number of leaves within each field

% (days)	*Crop Booster*	Control Field
25 (19 days)	6,84 ± 0,85[a]	5,72 ± 0,84[a]
50 (38 days)	9,48 ± 1,58[b]	7,32 ± 1,4[b]
75 (57 days)	11,56 ± 0,96[c]	8,06 ± 1,38[c]
100 (76 days)	11,64 ± 1,08[c]	9,16 ± 1,55[c]
P – valor	0,000	0,000

Table VII shows the number of leaves at 75% to 100% with a correlation in each field studied. As the plants progress in their development until the maturation or tasseling stage, the number of leaves in each field does not significantly increase from the 75% stage.

Comparison of fields over time in the number of leaves.

The comparison between the two treatments shows the significant difference with a greater number of leaves per plant in the *Crop Booster* field, observed in table VIII.

Table VIII. Comparison of fields over time in the number of leaves.

Treatment	25% (19 days)	50% (38 days)	75% (57 days)	100% (76 days)
Crop Booster	6,84 ± 0,85	9,48 ± 1,58	11,56 ± 0,96	11,64 ± 1,08
Control Field	5,72 ± 0,84	7,32 ± 1,4	8,06 ± 1,38	9,16 ± 1,55
P – valor	0,000	0,000	0,000	0,000

Table VIII shows that the number of leaves compared between the two fields with a difference of three leaves per plant between the fields is given by the greater development of the plant in the Crop Booster field than in the control field.

USDA Quality Grades: Grades of maize (Zea mays) crop quality according to USDA standards (Table IX). The USDA quality standards were determined based on chemical parameters that analyze protein (PB), acid detergent fiber (ADF), neutral detergent fiber (NDF), and relative feed value (RFV), thereby categorizing the forage for animal feeding.

Table IX. USDA Quality Grades

Field	Category	PB (%MS)	ADF (%MS)	NDF (%MS)	RFV
Crop Booster	Common	8,7	35,1	45,69	125
Control Field	Common	6,04(<16)	38,3(>35)	47,6(>44)	115(>100)

Table IX shows the scores of the two experimented fields generating the corn crop a common category, within the forages.

Linear Capacity: Crop yield of maize (Zea mays) per linear meter in the two fields. In Table X, the yield per linear meter in the rows of maize (Zea mays) cultivation, taken at 5 randomly selected points, can be found. The average yield was 7.59 kg in the *Crop Booster* field and 1.58 kg in the control field.

Table X. Linear Capacity

Crop Booster		**Control Field**	
# Sample	**Kg Fv**	**# Sample**	**Kg Fv**
1	7,44	**1**	1,55
2	7,36	**2**	1,2
3	8,8	**3**	1,8
4	7,22	**4**	1,6
5	7,15	**5**	1,73
Average	7,59 Kg Fv	**Average**	1,58 Kg Fv

It can be seen that the Crop Booster obtained a higher linear yield in kg per chosen point.

Forage Production: Quantity of maize (Zea mays) crop yield in each field; Table XI shows the amount of green forage in each field, with a production of 77,418 kg of green forage in the Crop Booster field and 16,116 kg of green forage in the control field, resulting in a 480% difference in green forage.

Table XI. Green forage production

Crop Booster	Control Field
77,418 Kg Fv	16,116 Kg Fv

It can be seen that the Crop Booster obtained a higher linear yield in kg per chosen point.

Forage Production: Quantity of maize (Zea mays) crop yield in each field; Table XII shows the amount of green forage in each field, with a production of 77,418 kg of green forage in the Crop Booster field and 16,116 kg of green forage in the control field, resulting in a 480% difference in green forage.

Table XII. Brix rating b. titratable acidity

Brix Degrees in the Two Harvests		Titratable Acidity of the Two Fields	
Crop Booster	**Control Field**	Crop Booster	**Control Field**
11,60%	8,70%	2,51%	3,74%
11,40%	8,40%	2,48%	3,79%
11,70%	8,60%	2,47%	3,75%

Table XI shows the amount of dissolved sugars in the Brix degree analysis and the amount of acid obtained in the samples taken from the cultivated fields.

Maturity index: The relationship between Brix degrees and titratable acidity; the dissolved sugars and acidity of a crop indicate its maturity for harvest. In Table XIII, it shows an adequate maturity index for harvesting in the Crop Booster field, while in Table XIV, it explains the maturity indices of the control field, which are not suitable for harvesting.

Tabla XIII. Maturity Index in *Crop Booster* field

Crop Booster			
Samples	**Brix degrees (%)**	**Tritable Acidity**	**Maturity Index**
1	11,60	2,51	4,62
2	11,40	2,48	4,6
3	11,70	2,52	4,64

Within table XIV it can be observed in the Crop Booster field an ideal percentage of sugars in the plant and a low acidity; indicating an adequate maturity for the subsequent harvest.

Table XIV. Control field maturity index

Crop Booster			
Samples	**Brix degrees (%)**	**Tritable Acidity**	**Maturity Index**
1	8,70	3,74	4,62
2	8,40	2,48	4,6
3	8,60	2,52	4,64

The samples obtained from the control field indicate a maturity of the crop not suitable for harvesting.

Shelf Life: Shelf life or post-harvest time. In Table XV, the post-harvest time in the *Crop Booster* field has a longer duration compared to all the observed parameters, while in Table XVI, the observed parameters of the post-harvest life of the crop in the control field obtained a shorter duration by up to two days, with the presence of fungi in the food.

Table XV. *Crop Booster* Shelf Life

Crop Booster						
Day	**Temperature**	**pH**	**Smell**	**Palatability**	**Fungi Presence**	**Forage Loss**
1	31°C	5,1	Fresh	90%	None	0%
2	55°C	6,3	Fresh	80%	Presence	20% Middle Layer
3	67°C	7,2	Fermented	50%	Presence	40%
4	91°C	7,9	Acidic	20%	Presence	50%

In this table XV it is observed that the food harvested for the animals has a palpable duration of 3 days.

Tabla XVI. Control Field Shelf Life

Crop Booster						
Day	**Temperature**	**pH**	**Smell**	**Palatability**	**Fungi Presence**	**Forage Loss**
1	35°C	5,5	Fresh	80%	None	20%
2	60°C	6,7	Fermented	50%	Presence	60%
3	80°C	7,8	Acidic	30%	Presence	80%
4	98°C	8,0	Acidic	0%	Presence	100%

Table XVI shows that the harvested food has a durability time of 2 days for the animals.

Conclusions

The implementation of the bio-stimulant technology *Crop Booster* is an alternative that contributes to the increase in green forage yield of maize (Zea mays) crops, enhancing the production from 16,116 kg FV in the traditional unfertilized crop to 77,418 kg FV with the *Crop Booster* device. It improved the protein content from 6.04% in the control field to 8.70% in the *Crop Booster* field, increased water use efficiency, and extended the post-harvest life in the control field to 2 days and 3 days in the *Crop Booster* field, making it more palatable for the animals and their feeding.

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