



*Final report of test on plot of soybean - corn in
Agro Expo Cooperative SANTA MARIA Ltda.*

FOLLOW-UP REPORT ON

***Nature Green
(AquaVantage®)***

APRIL 2017

Report Plot Expo
COOPERATIVE SANTA MARIA / FECOPROD

Content

1.	Executive summary.....	4
2.	Plan of management of the trial.....	5
2.1	Test protocol.....	5
2.2	Location of the plot.....	8
2.3	Location map of treatments.....	9
2.4	List of materials.....	9
2.5	Work plan.....	10
3.	Monitoring plot.....	11
4.	Results.....	11
4.1	Made harvest.....	11
5.	Conclusions.....	13

Report Plot Expo

COOPERATIVA SANTA MARIA / FECOPROD



1. Executive summary

This document consists of a report of the results obtained during the implementation of a trial of the ECOP fertilizer bio (NPK + Nature Green) on cultivation of soybean and corn of the Cooperativa Santa Maria Ltda. (Coopasam), these works were implemented in the plot of "ECOP" located within the premises of Agro Expo, for the work they were considered the following specific aspects:

Fertilizers ECOP bio

ECOP fertilizer bio is a fertilizer consisting of a mix of fertilizer NPK ECOP over an aggregate of HUMUS, which makes a relationship of NPK 70% and 30% of HUMUS.

Nature Green (AquaVantage®)

It is a Hydrogel based natural biodegradable, non-toxic. It has a capacity to absorb up to 500 times its weight in water. Its main function is to absorb water and keep wet the area of development of the plant, either seed or roots. **NOTE: Nature Green (AquaVantage) application rate for corn and soybeans is 5 kg/ha. In this trial plot, only 1 kg was used.**

For the plot of corn, ECOP fertilizer used in this trial was the 08-20-10 physical mixture of Russian origin, with a uniform grain size and optimal distribution.

For the plot of soybeans, ECOP fertilizer used in this trial was the 04-30-10 physical mixture of Russian origin, with a uniform grain size and optimal distribution.

The work was conducted jointly with technicians of ECOP and FECOPROD.

Test is implemented on a plot of agricultural use, used annually for the demonstration of products of different agricultural companies, it has a surface area of approximately 720 m².

The proposal for work on corn, consisted in the comparison of production between 2 treatments of fertilization with the application of 300 kg / has base fertilizer + 1 kg of **Nature Green (AquaVantage®)** (when mixed with fertilizer) + 50 kg / has coverage of ammonium sulfate.

Treatment 1: 08-20 - 10 + **Nature Green (AquaVantage®)** + 21-00-00-22

Treatment 2: 08-20 - 10 + 21-00-00-22

The treatments were applied together

The proposal for work on soy, consisted of the comparison of production between 2 treatments of fertilization with the application of 300 kg / has base fertilizer + 1 kg of Nature Green (when mixed with fertilizer) + 50 kg / has coverage of potassium chloride (KCl).

Treatment 1: 04-30 - 10 + **Nature Green (AquaVantage®)** + 00-00-60

Treatment 2: 04-30 - 10 + 00-00-60

Report Plot Expo



COOPERATIVE SANTA MARIA / FECOPROD



With planting, fertilizer was deposited at the side of the seed. This began the monitoring work and the corresponding evaluation between treatments and control until the harvest.

2. Plan of Management of the Trial

2.1 Test Protocol

  PROTOCOL OF FERTILIZER TRIALS				
1 TITLE OF THE WORK:	Effect of chemical fertilizer with Nature Green (AquaVantage) in soybean and corn			
1.1 type of test	Plot demo			
1.2. the test surface	24 m x 30 m			
2. PROVIDER OF THE PRODUCT.	ECOP SA			
3. RESPONSIBLE FOR TECHNICAL UNIT.	MANAGEMENT OF PRODUCTION SUPPORT			
4. PROFESSIONAL RESPONSIBILITY.	Victor Luis			
4.1 Phone	0984-222 553			
4.2 e-mail	vpatino@fecoprod.com.py			
5. DATA OF PRODUCTION				
5.1 location	Department	Alto Paraná		
	District	Minga Porá		
	Cooperative / institution	Cooperativa Santa Maria		
	Producer	ECOP		
	Plot	Agro Expo		
	Elevation	347 m		
	Latitude	S 24 ° 44´ 58, 2ND		
	Length	W 54 ° 53´ 11, 1"		
5.2 crop	Cultivation	Corn	Size	12 x 29 m
	Variety	30A37	Between rows	90 cm
	Date of cultivation	23/11/2016	rows x trat	13
	Direct seeding	Yes	Plants/HA	66,000
	Previous crop	Fallow	plants/m	6

Report Plot Expo

COOPERATIVE SANTA MARIA / FECOPROD

5.3 cultivation	Cultivation	Soybeans	Size	12 x 29 m
	Variety	SOJAPAR R19	Between rows	45 cm
	Date of cultivation	23/11/2016	rows x trat	24
	Direct seeding	Yes	Plants/HA	260,000
	Previous crop	Fallow	plants/m	12
5.4 results of soil	pH (H2O)	5.77	Phosphorus (P)	18.41
	M.O.	4.94	Potassium (K)	0.61
	% Clay	55	Calcium (Ca)	6.73
	CIC	12.18	Magnesium (Mg)	2.18
	% V	78,13	Sulphur (S)	0.64
6. TRIALS:				
6.1 plan of handling corn		Treatment 1	Treatment 2	
08-20-10		300 kg	300 kg	
Nature Green (AquaVantage®)		1 kg	0 kg	
21-00-00-22 (coverage)		50 kg	50 kg	
6.2 management soy plan		Treatment 1	Treatment 2	
04-30-10 Bio		300 kg	300 kg	
Nature Green (AquaVantage®)		1 kg	0 kg	
00-00-60 (coverage)		50 kg	50 kg	
7. COMMENTS				
<p>The application of 300 kg of fertilizer is making the relationship to one hectare. 54 kg of fertilizer were used for each experimental plot + 1 kg of Nature Green (AquaVantage®), for treatments 1 in corn and soybeans. Nature Green (AquaVantage®) application is 5 kg per hectare.</p>				
8. LOCATION MAP				

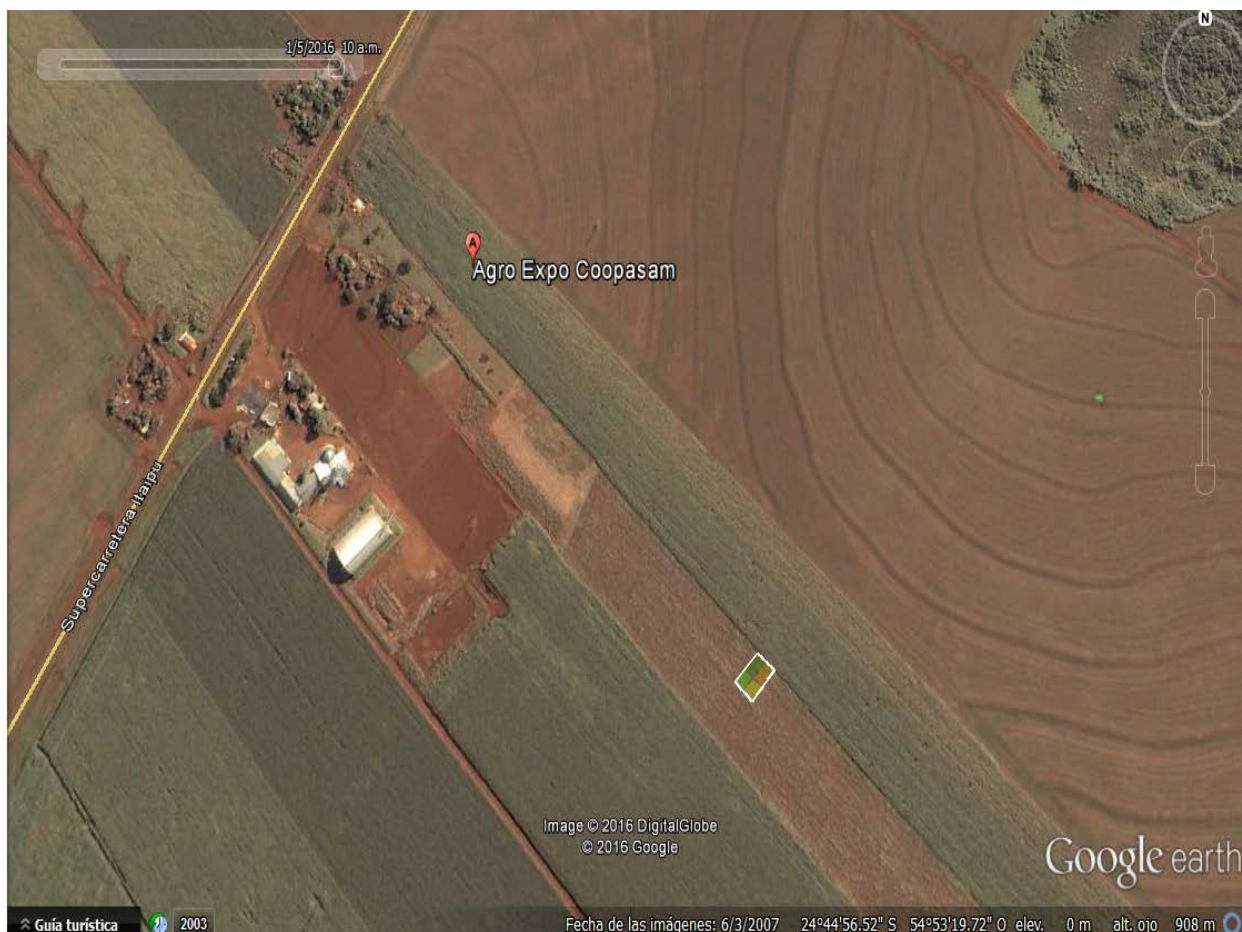
Report Plot Expo
COOPERATIVE SANTA MARIA / FECOPROD



Report Plot Expo COOPERATIVE SANTA MARIA / FECOPROD



2.2 Location of the Plot



The plot is located within the premises of the Agro Expo Coopasam of property of the Cooperative Santa Maria Ltda. with a surface of approximately 720 m², located on the superhighway of Itaipu km 115 Minga Porã, Department of Alto Paraná.

Report Plot Expo

COOPERATIVE SANTA MARIA / FECOPROD



2.3 Location Map of Treatments



On the map above you can see each of the treatments.

2.4 List of materials

A technical inputs	Detail	Quantity	Observations
Soybean seed	SOJAPAR R19	5 kg	By Fecoprod
Seed corn	Morgan 30A37	5 kg	By Fecoprod
Fertilizers	08-20-10 bio	10 kg	Supplied by Ecop SA
Fertilizers	04-30-10 bio	10 kg	Supplied by Ecop SA
Nature Green (AquaVantage®)	Almidon-g - potassium salt 88% poly	5 kg	Arnaldo (Nature Green)
Plant protection products			Supplied by field technician
OBS: The seeds already been previously treated.			

Report Plot Expo

COOPERATIVE SANTA MARIA / FECOPROD

2.5 Plan of Work

Activities	November				December				January				February				March			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Dewatering of the plot																				
Planting of Soybeans																				
Fertilization																				
Weekly Care																				
Agro Expo Coopasam																				
Harvest and Evaluation																				

The plot that was planted with soybean variety SOJAPAR R19, which has the following characteristics:

Asian soybean rust resistance, is also tolerant to glyphosate (RR1).

It has semi-precoz cycle. It has good adaptability to soils with medium and high fertility.

The plot which was sown with maize variety 30A37 Morgan, has the following characteristics:

Presents early cycle, the plant height can you get up to 2 m., grains have a yellow-orange coloration of a semi-hard texture, leaves good coverage.

Plant protection and cultural management was conducted by Mr. Valmir Mohr, with technical advice from the engineer Gabriel Báez.

Report Plot Expo
COOPERATIVE SANTA MARIA / FECOPROD

3. Monitoring Plot

The monitoring was conducted in the cultivation of soybeans, on Saturday, February 18, during the expo Coopasam, where 5 plants were extracted by treatment, in the middle of each plot and proceeded to count the number of pods/beans:

Number of pods/plant soybeans - Treatment 1						
	Plant 1	Plant 2	Plant 3	Plant 4	Plant 5	Total of pods/beans
1 grain sheaths	3	0	4	1	4	12
2 grains pods	19	6	10	12	23	70
Pods of 3 beads	31	24	10	21	34	120
4 beans pods	1	0	0	0	0	1
Total of pods	54	30	24	34	61	203

Number of pods/plant soybeans - Treatment 2						
	Plant 1	Plant 2	Plant 3	Plant 4	Plant 5	Total of pod/beads
1 grain sheaths	2	0	1	4	2	9
2 grains pods	10	5	4	13	13	45
Pods of 3 beads	19	17	11	26	18	91
4 beans pods	0	0	0	0	0	0
Total of pods	31	22	16	43	33	145

The pods/plant for the Treatment 1 average is 41 pods

The average number of pods/plant for **Treatment 2 is 29 pods**

Report Plot Expo

COOPERATIVE SANTA MARIA / FECOPROD

4. Results

4.1 Crop Performance

Results of harvest in CORN				
Treatment	Dose	Number of spikes harvested in 12m ²	Grains weight (kg) in 12m ²	Estimation of yield (kg / has)
Corn Treatment 1	08-20-10 + Nature Green (AquaVantage®)	41	7,870	6,558
Corn Treatment 2	08-20-10	33	6,015	5,044

Harvest results in the cultivation of SOYBEANS			
Treatment	Dose	Grains weight (kg) harvested *	Estimation of yield (kg / has)
Soybean Treatment 1	04-30-10 + Nature Green (AquaVantage®)	42	3,500
Soybean Treatment 2	04-30-10	36	2,666

* For Treatment 1 soya, was harvested an area of 120 m² weighing this 42 kg, and Treatment 2 was harvested an area of 135 m² the same weighing 36 kg.

5. Conclusions

With the data collected in the experimental plot, we can conclude the following:

Product applied with **Nature Green (AquaVantage®)** generates an increase in performance and this can be seen in the different treatments.

In the cultivation of CORN there was a beneficial yield difference of 1514 kg /ha (1,332 lbs./acre) in favor of Treatment 1, which consisted in the use of fertilizer ECOP bio 08-20-10 and Nature Green (AquaVantage®).

Treatment 1 applied to SOYBEANS-consisted of fertilizer ECOP bio 04-30-10 and Nature Green (AquaVantage®), which produced a difference of 834 kg /ha (734 lbs./acre) has more than Treatment 2.