Hendrix & Dail Honduras SA

Effect of applying the natural biostimulant RaiSan on potatoes

Eng. Jorge Mario Ramirez – Eng. Gabriel Rodriguez

March 19, 2017

Introduction:

The potato is the fourth most important food crop worldwide after wheat, rice, and corn. It is one of the most important crops in the Costa Rican diet and occupies a fundamental place in the basic food basket. In Costa Rica, approximately 5,000 metric tons of potatoes are consumed per month, placing this crop as the third most important product in terms of national food security. Under the environmental conditions of our country, this tuber is exposed to a series of organisms (insects, fungi, bacteria) that can be difficult to control, resulting in reduced yields and increased production costs. Integrated Crop Management (ICM-Potato) considers various practices and technologies developed in recent years, promoting a reduction in the use of agrochemicals by farmers, thereby reducing production costs, as well as obtaining a healthier product for consumption and the environment.

Aim:

Effect of RaiSan application in the initial stages of potato cultivation.

Effect on fungal diseases: Late blight (Phytophthora infestans)

Effect on bacterial diseases: Blackleg (Erwinia carotovora)

Net difference in kilos of harvest between treated and untreated plots.

Materials and methods:

1. Owner: 2.	Juan Carlos Camacho
Location of the plots: 3. Google Earth	Santa Teresa, Dep. of Carazo, Chinandega, Nicaragua.
coordinates: 4. Planting date:	9 51 N – 83 55 W elev. 1386 meters
	June 2016
5. Harvest date:	October 2016
6. Variety:	Vivaldi
7. Applied surfaces: 8. RaiSan	1 ha for witness and 1 ha for batch treated with RaiSan
application dose: 9. Responsible	4 liters/ha x 3 applications (total 12 liters per crop cycle)
technician:	Engineer Jorge Mario Ramirez

Technical details and application doses:

1. 4 liters per hectare are applied at the time of sowing, on the seed, before closing the furrow.
   application is done by drenching with a backpack with an open beak.
2. After 7 days, the second application is carried out in the same way as before and with the same dose.
3. After 14 days, the last application is carried out, with the same dose and also by drench.
4. Applications are made with a broth containing a 0.2% concentration of RaiSan.

Results:

EFFECT ON LATE Blight INCIDENCE

Witness area (small incidence of blight)

Treated area (zero Tizon incidence)

INCIDENCE ON BLACKFOOT

Blackleg (Erwinia carotovora) in the control area showed only a few plants affected. In the area treated with raisan, the disease was not found.

Hendrix&Dail Honduras SA, Km 8.2 San Manuel Cortes, Honduras. Mail: hendrixdailcentroamerica@yahoo.com
Tel: +504-9479-5834 / +502-5208-7400

Hendrix & Dail Honduras SA

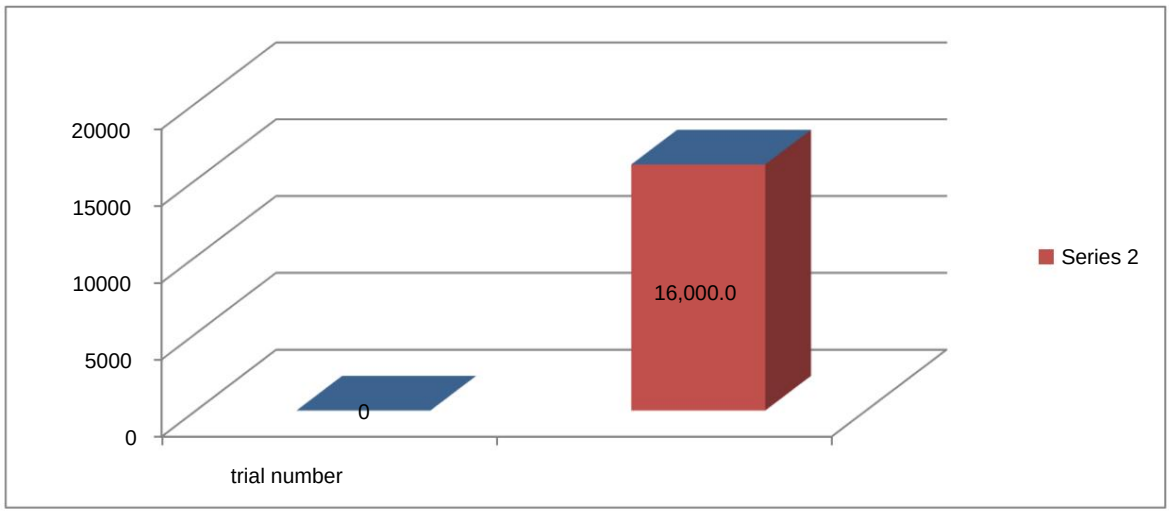
ESSAYS

1. Commercial witness 2.
Commercial witness without application of chemical fungicides and only with 4 liters/ha in 3 applications

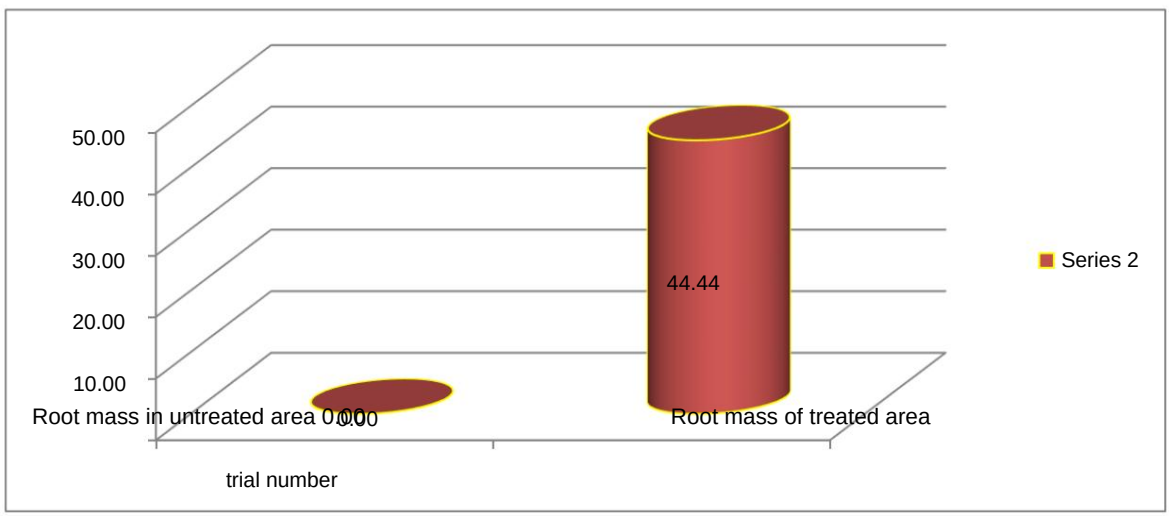
NET HARVEST WEIGHT

Treatment Kg. Harvested		Surface (ha)	Kg./ha	Difference Kg./ha.	% difference
1	36,000	1.00	36,000.0	0	0.00
2	52,000	1.00	52,000.0	16,000.0	44.44

Net weight of crop increase



Net increase percentage



Hendrix&Dail Honduras SA, Km 8.2 San Manuel Cortes, Honduras. Mail: hendrixdailcentroamerica@yahoo.com
Tel: +504-9479-5834 / +502-5208-7400

Hendrix & Dail Honduras SA

Root mass in witness zone

Treated area

Root mass in treated area

Hendrix&Dail Honduras SA, Km 8.2 San Manuel Cortes, Honduras. Email: hendrixdailcentroamerica@yahoo.com Tel: +504-9479-5834 / +502-5208-7400

Hendrix & Dail Honduras SA

Difference between the control area on the left of the photo and the area treated with RaiSan on the right.

Hendrix&Dail Honduras SA, Km 8.2 San Manuel Cortes, Honduras. Email: hendrixdailcentroamerica@yahoo.com Tel: +504-9479-5834 / +502-5208-7400

Hendrix & Dail Honduras SA

Difference between witness (Left) and area applied with RaiSan (Right)

Hendrix&Dail Honduras SA, Km 8.2 San Manuel Cortes, Honduras. Email: hendrixdailcentroamerica@yahoo.com Tel: +504-9479-5834 / +502-5208-7400

Conclusions:

The result of using RaiSan showed a notable increase in production, favoring in a way the cost-benefit relationship is important.

The incidence of diseases in the treated areas was minimal, practically zero, and the greenness index increased significantly.

• The incidence of disease in the treated area was practically zero. • Root mass increased significantly, almost exaggeratedly. • The greenness index of the leaves in the treated area was higher than in the control area. • The quantity of potatoes in the treated area increased considerably, in most cases up to 40% more than in the control area. • The aerial mass and size of the treated plants increased between 40 and 50% compared to the test area. • The net yield increased by 44% compared to the control area.

SEE: https://www.youtube.com/watch?v=gB1zMWqHlH8

https://www.youtube.com/watch?v=VXkTgNrsHTs&t=155s

https://www.youtube.com/watch?v=6_a64VMucyQ

Hendrix&Dail Honduras SA, Km 8.2 San Manuel Cortes, Honduras. Mail: hendrixdailcentroamerica@yahoo.com
Tel: +504-9479-5834 / +502-5208-7400

Hendrix&Dail Honduras SA, Km 8.2 San Manuel Cortes, Honduras. Email: hendrixdailcentroamerica@yahoo.com Tel: +504-9479-5834 / +502-5208-7400