



FUTURECO
BIOSCIENCE



ECO LETTER

Ecormon improves fruit setting and growth in cucumber and rice crops.

#40 Periodic publication on the efficacy and characteristics of Futureco Bioscience products.

ECOLETTER #40

ECORMON IMPROVES FRUIT SETTING AND GROWTH IN CUCUMBER AND RICE CROPS.

INTRODUCTION

ECORMON® is a certified organic biostimulant of botanical origin formulated with molybdenum and amino acids. It is especially indicated to promote fruit set and growth, maximizing both quality and yield at the time of the harvest.

It contains small doses of natural phytohormones (auxin, cytokinins, gibberellins) that positively regulates plant physiological processes at very low concentrations. Moreover, ECORMON® advanced formulation facilitates foliar adsorption and guarantees both excellent compatibility with a broad range of chemical products and optimal stability in a large range of pH and water hardness. It can be applied by spraying or irrigation. ECORMON® is also suitable for nutrient solutions in hydroponics.

ECORMON® formulation maximizes the optimal synergistic effect of all its active ingredients, amino acids and nutrients. If, on the one hand, ECORMON® uniform flowering, on the other hand, it ensures fruit set and fruit growth avoiding fruit drop. It can be applied at any phenological stage of fruit set and fruit growth and leaves no residues at harvest.

Two field trials were made with the objective of testing the efficacy of ECORMON® on cereals and horticultural crops, in comparison with control treated plants. Field studies were conducted in the Middle East (Egypt and Iran); one on cucumber (1) and other one on rice (2).

MATERIALS AND METHODS

1. CUCUMBER (*Cucumis sativus* L.)

Cucumber seeds (*Cucumis sativus* L.) cv. Beta-Alpha (Quartz F1) were sown in rows 80 cm apart, with an intra-row spacing of 50 cm. Plants were grown in a sandy soil with a trickle irrigation system. ECORMON® was dissolved in water to obtain the recommended concentrations. Plants were foliar-sprayed, 3 weeks after transplanting, 3 times with a hand-held sprayer at intervals of 15 days. 2 counts of flower number and, at the commercial stage, fruit per plant, mean of fruit weight, fruit length, fruit diameter and harvest yield were analyzed. 2 harvests were carried out per week.

2. RICE (*Oryza sativa* L.)

3 rice seedlings (25 day-old, *Oryza sativa* L.) were transplanted in 4×3 meter plots with 25×25 cm distance between them. Rice plants were foliar sprayed once with water (control plants) or ECORMON® (at recommended dose).

After full maturity, 4 plants of each plot were harvested for determining panicle length (cm), grains (number) per panicle and paddy yield. Data analysis and orthogonal comparisons were done using SAS (SAS Institute, 2002) and the means were compared by using LSD test at 5% probability level.

ECO LETTER #40

RESULTS

1. CUCUMBER (*Cucumis sativus* L.)

Field study showed enhanced fruit setting and yield of cucumbers treated with ECORMON® at recommended dose (0.7L/ha).

Fruit setting was 32% higher in ECORMON®-treated plants than in untreated control plants [Fig. 1]. Moreover, ECORMON® also increased the number of flowers and fruits per plant at 91% and 172%, respectively [Fig. 2]. Weight and size (length and diameter) of fruits were also higher (12%, 26% and 43%, respectively), together resulting in a 210% increase of yield [Fig. 3].

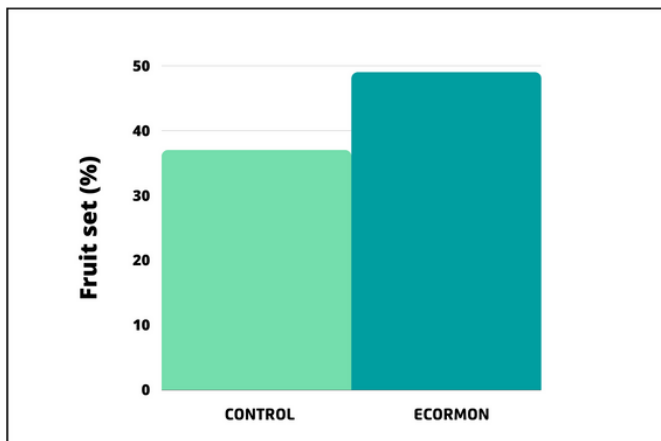


Fig. 1 Number of fruit set per plant in untreated plants and ECORMON®-treated plants. Results show the mean of two harvests.

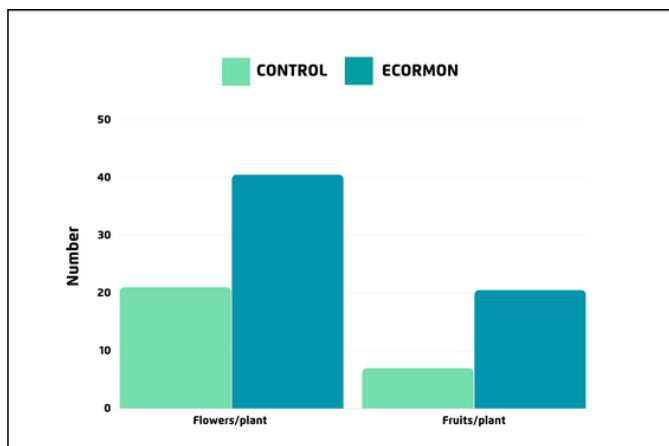


Fig. 2 Number of flowers and fruits per plant in untreated plants and ECORMON®-treated plants. Results show the mean of two harvests.

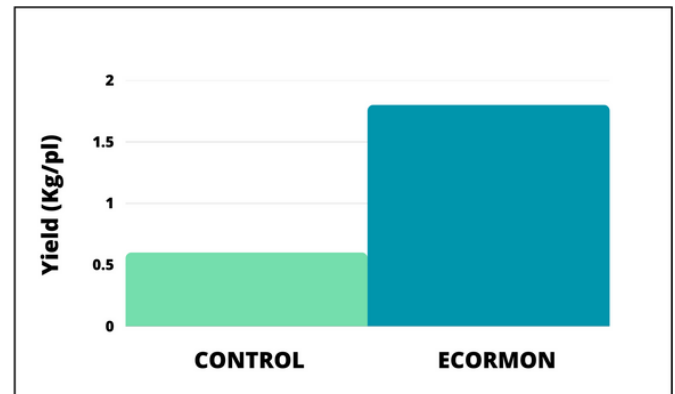


Fig. 3 Crop yield (Kg/pl) of untreated cucumber plants and ECORMON®-treated plants. Results show the mean of two harvests.

Moreover, ECORMON®-treated plants also showed greater foliar nutrient contents. Nitrogen, phosphorus and potassium increased 53%, 48% and 44%, respectively [Fig.4]. Likewise, calcium and magnesium in leaves of ECORMON®-treated plants also showed higher values (36% and 50%, respectively, Fig. 4).

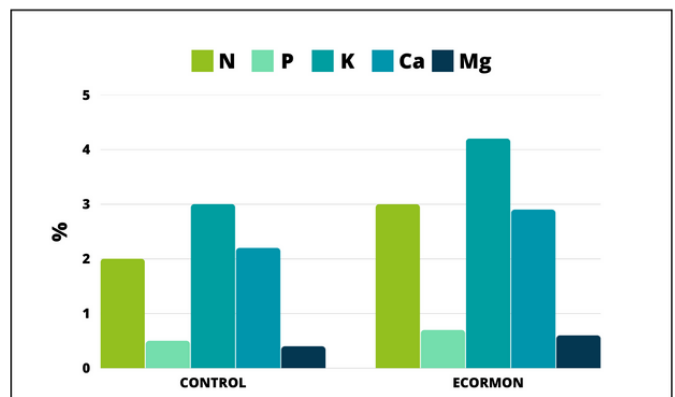


Fig. 4 Percentage of foliar nutrients in relation to the dry weight of the sample in control cucumbers and ECORMON®-treated plants. Results show the mean of two harvests.

ECO LETTER #40

2. RICE (*Oryza sativa* L.)

ECORMON® showed a significant effect on rice ratoon grown under field conditions. ECORMON® allowed plants to markedly reach greater grain yield and grain number per panicle.

Results showed significant increases in all parameters determined, particularly for number of grains in each panicle and paddy yield (48% and 47%, respectively, Figs. 5 and 6). ECORMON®-treated plants reached 29% higher weight of 1000 grains and 30% for panicle length [Fig. 5].

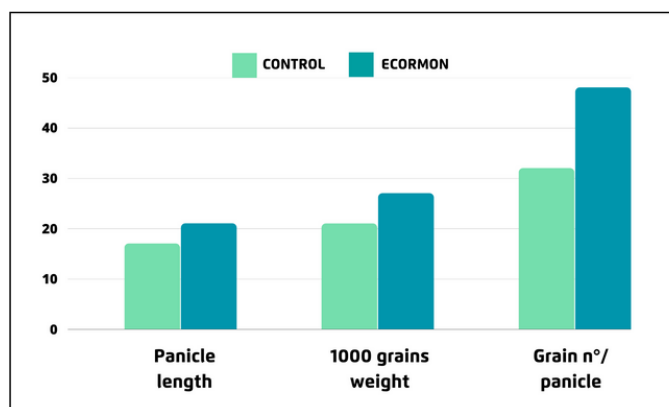


Fig. 5 Panicle length (cm), weight of 1000 grains (g) and grain number per panicle in rice control plants of and treated with ECORMON®.

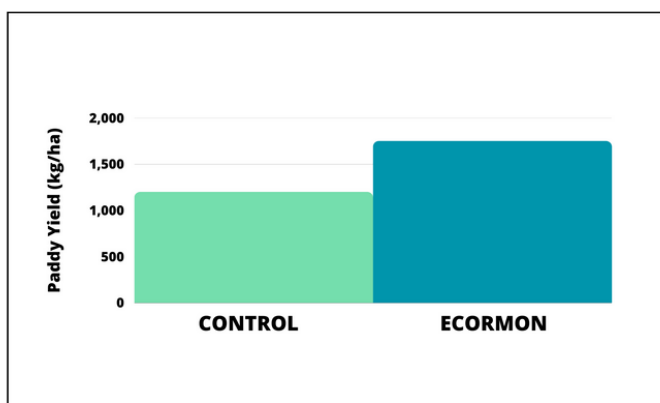


Fig. 6 Crop yield in rice untreated and treated plants with ECORMON®.

CONCLUSIONS

ECORMON® treatments allowed to increase cucumber and rice yield by improving fruit setting and growth:

- ECORMON® can be safely used within the recommended concentrations with a positive effect on plant growth, fruit set and improvement of production of cucumber plants.
- ECORMON® application can improve not only morphological parameters of plants but also yield and yield components of rice ratoon.
- ECORMON® could be recommended for further research for designing an integrated crop management practices for ensuring sustainable farming.

REFERENCES

1. El-Nemr, M.A., et al., *Response of growth and yield of cucumber plants (*Cucumis sativus* L.) to different foliar applications of humic acid and bio-stimulators*. Australian Journal of Basic and Applied Sciences, 2012. 6(3): p. 630-637.
2. Niknejhad, Y. and H. P. *Effect of growth stimulators on yield and yield components of rice (*Oryza sativa* L.) ratoon*. 2012.



FUTURECO
BIOSCIENCE

To receive more information contact
info@futurecobioscience.com

Visit our website
www.futurecobioscience.com

SUBSCRIBE TO OUR NEWSLETTER

Futureco Bioscience SA, Avenida del Cadí 19-23, Sant Pere Molanta 08799, Olèrdola (Barcelona), España.