

FOLLOW-UP REPORT AND MONITORING WITH BIOFEED FERTILIZERS IN NECTARINE

Background

In February 2017, a nutrition plan is made by in situ sap analysis method, incorporating an efficacy enhancer of nutritive solutions, Biofeed's ACT (amino carbon technology), in a sector of nectarine variety carmine 6, from a farm in Cieza (Murcia), owned by a company of importance and relevant size in the fruit and vegetable sector. Results are compared to a sector of the same variety nourished professionally with other fertilizers, hereinafter STD (standard). For this trial it is decided to elaborate nutritious solutions with simple crystal fertilizers, which are corrected according to the interpretation of the monitoring data.

Objective

Provide the most efficient solution, applying precisely just what the crop needs at each moment Agriculture of precision!

To do this we will use a novel methodology of monitoring the sap in real time, associated with the efficient Biofeed ultraliquid fertilizers. This type of analysis allows us to make changes in real time based on the values obtained in sap, anticipating the potential deficiencies, contributing those ions that are needed and reducing which are in excess.

Through this system we achieve:

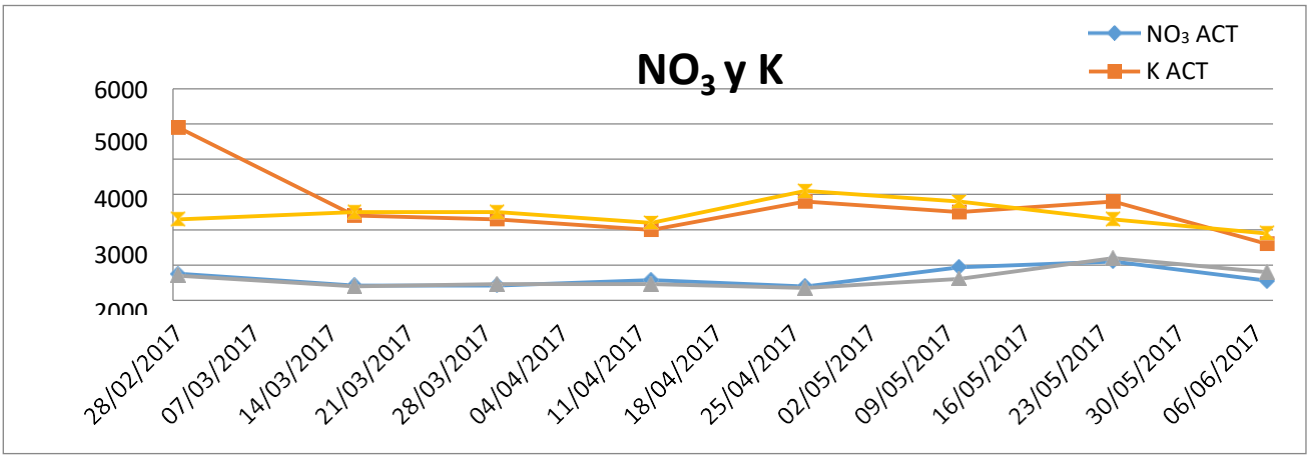
- ✓ Real-time data on the absorption of nutrients and their mobility by the plant
- ✓ Rapid adjustment of fertilization, with the help of additional irrigation information and soil
- ✓ The design of an optimized nutritional plan, minimizing the use of salts and chlorides
- ✓ Restoration of the physical-chemical properties of the soil.
- ✓ Increase the assimilation and mobility of nutrients in soil and plant.
- ✓ We reduce the energy expenditure of the plant through ultra-efficient nutrition.



Results obtained

Next, we will evaluate the graphs of the results obtained with the monitoring in the different analyzed parameters.

GRAPH #1



We see that despite having two different subscriber plans, the changes in sap ion indices have hardly any variations, so the phenological index is valued, which is the value of [K] + / [NO_3] – 1 being super vegetative and 8 super generative.

GRAPH #2

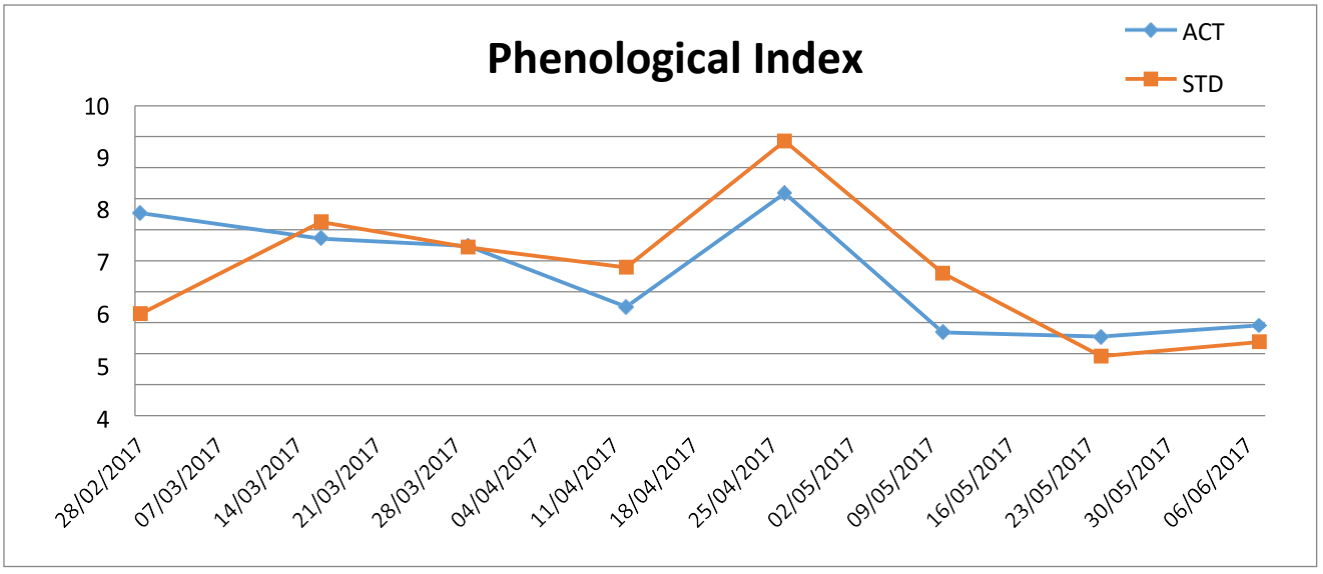
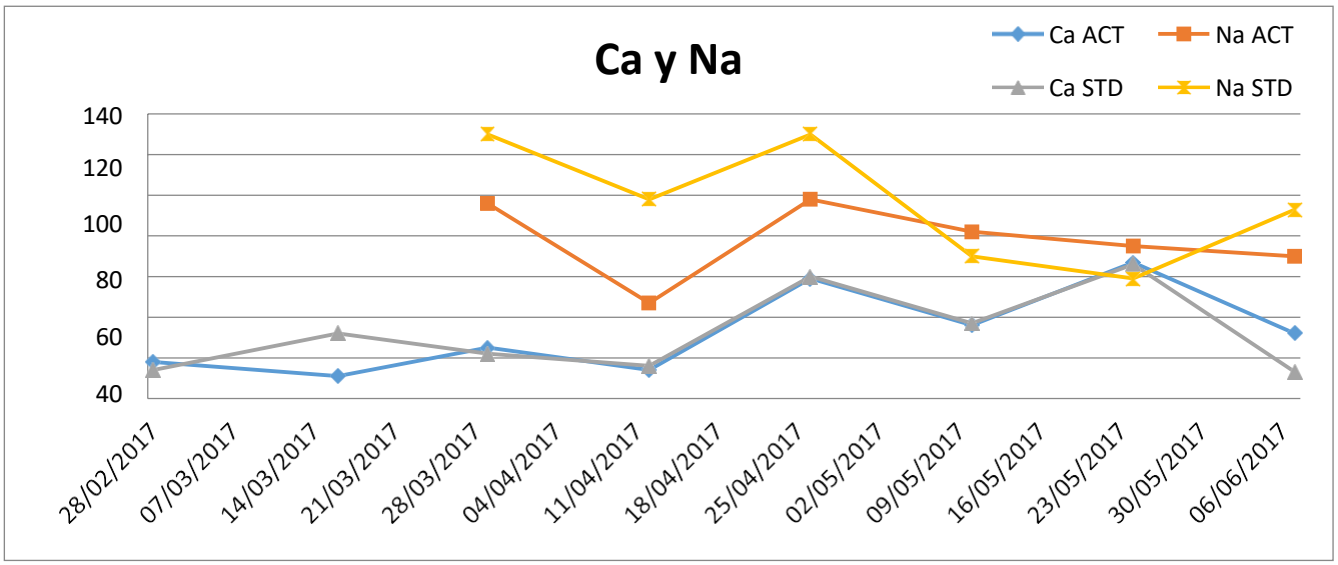


Figure 2 shows how, although the trend lines are similar, the jumps and ends are greater for the STD plot, having less stress or sudden changes in their activity on the ACT plot, even reaching <8 at times of fattening and maturation in STD, which indicates great stress, coinciding with the moments of greatest need of K in the plant.



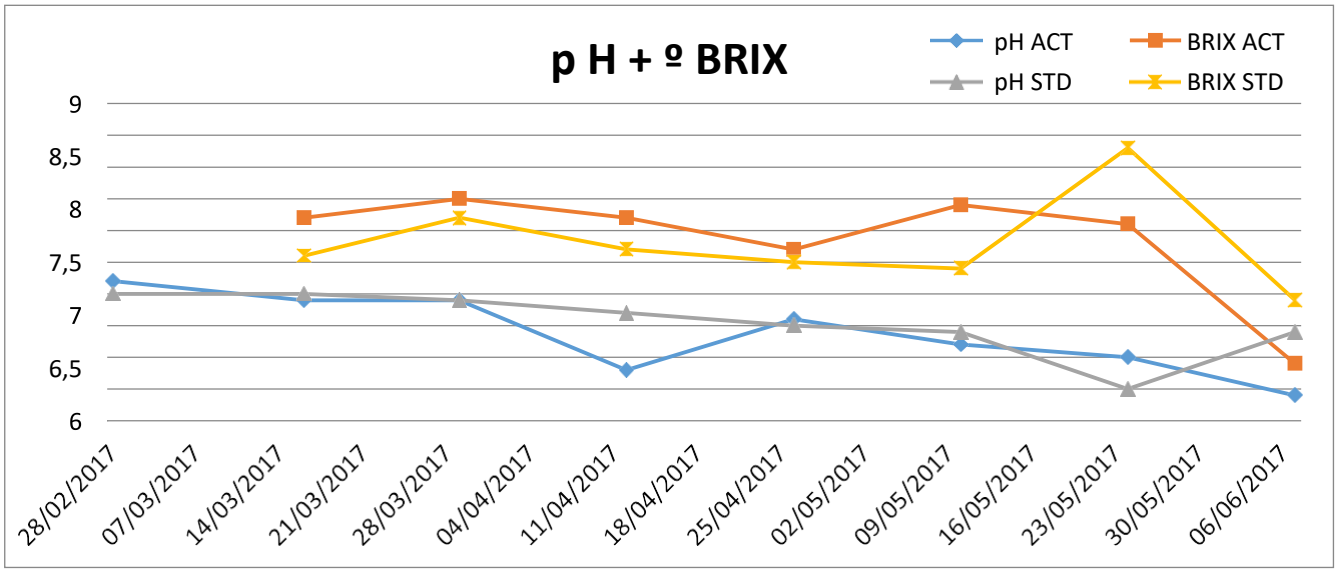
GRAPH #3



It is very significant that in this graph Ca ionic levels are similar in both cases throughout the crop, but in the final stage it increases from 13 ppm in STD to 32 ppm in ACT, which represents 146% more ionic calcium in this stage.

When analyzing Na we see a lower content in sap throughout the cycle, including the final stage, so that the same content of Ca, ACT more efficiently lowers the amount of Na.

GRAPH #4



The ºBrix tells us that ACT has worked more and better during the whole cycle than STD, except in the final phase of pre-harvest, but in view of the results it can be interpreted that the crop has reached a physiological maturity at the same time that the fruit so it has started a natural decline, which can have an effect on a better quality of fruits, which do not end so vigorous.



The pH decreases during a crop cycle, which indicates the high potash requirement of this crop.

PRODUCTIVITY:

Nectarine, Carmina 6 STD = 38216 Kg / Ha Nectarine, Carmina 6 ACT = 39640 Kg / Ha

The good analytical data during the follow-up coincided with an increase in production of 3.7% more in the plots fed with Biofeed's ACT.

FERTILIZERS:

In the demonstration plot, modification has been made in the nutritive solution according to real-time analytical needs in the field, and fertilizer consumption has been the following in both plots.

Then the Kg / Ha of pure fertilizer provided in both plots, where it is seen as in the ACT treated plot there has been a lower need for fertilizer and cost savings.

	UF N	UF P	UF K	UF Ca
ACT	110	56	148	60
STD	119	71	177	70
REDUCTION	-8%	-29%	-19%	-16%



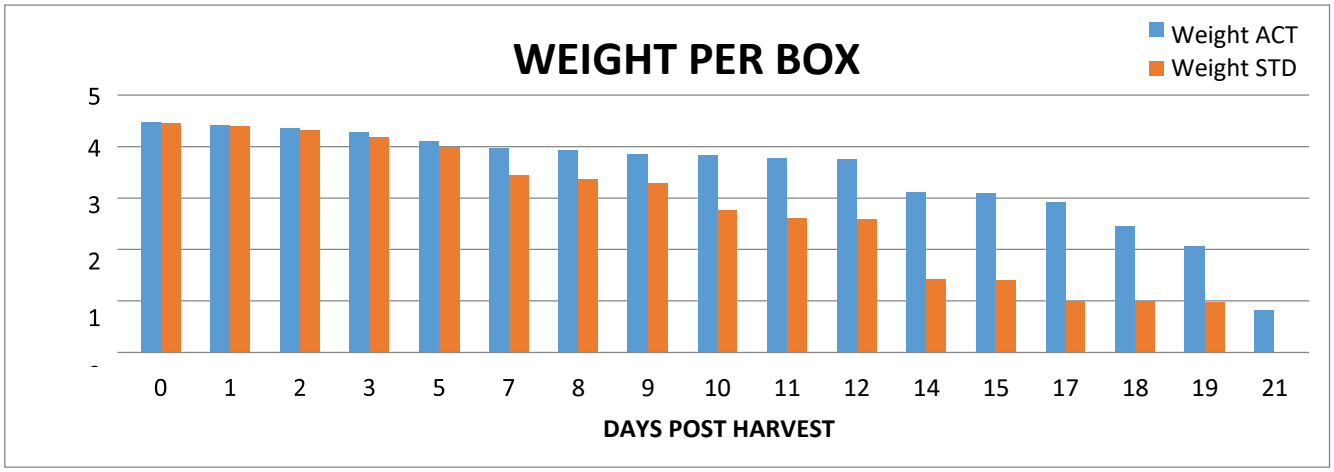
EVALUATION OF POST-HARVEST

A box of fruit from each plot is prepared with 24 fruits of commercial quality and the same initial weight of box. Variety Carmina 6, a plot supplemented with CHETROL of BIOFEED that gives us the ACT and the other with the standard (STD) handling.

They are stored indoors at room temperature, photographed, the boxes are weighed daily and the rotten fruits are removed.

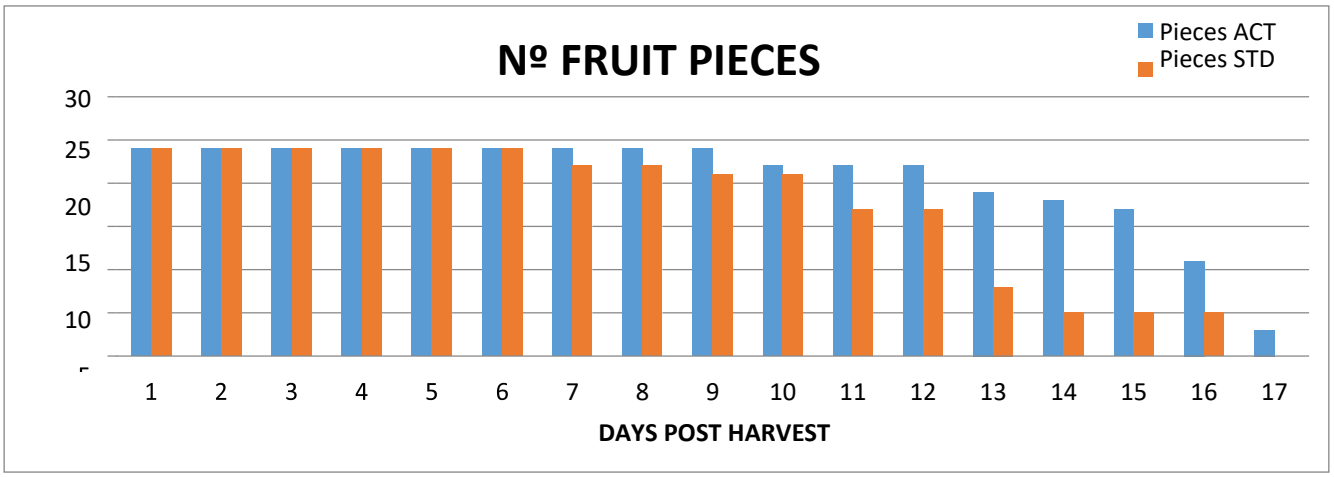
THE FOLLOWING GRAPH SHOWS THE DATA OBTAINED IN THE FOLLOW UP OF CONSERVATION

GRAPH #5



The graph shows how the weight of the fruits grown with ACT is more stable and stays fresh longer, taking longer to lose water. They present better quality and conservation. This fact is demonstrated in the next graph, which shows the number of pieces of each box over time, in which those that begin to rot are removed. In this case, the treated fruits (ACT) are more resistant to decay naturally, which indicates that at the same weight there is a better internal structure of fruit and efficient transformation of dry matter.

GRAPH #6





IMPORTANT IMPROVEMENT OF QUALITY, CONSERVATION AND SHELF LIFE!

Below is the sequence of photographs of the boxes studied in each plot, to see directly what the graphs and data indicate.

In the sequence of photos, on the left those treated with ACT, on the right the standard fertilization.












Day 8


Day 9


Day 10


Day 11


Day 12


Day 14


Day 15


Day 17


Day 18


Day 19


Day 21


Day 22