

PHCa

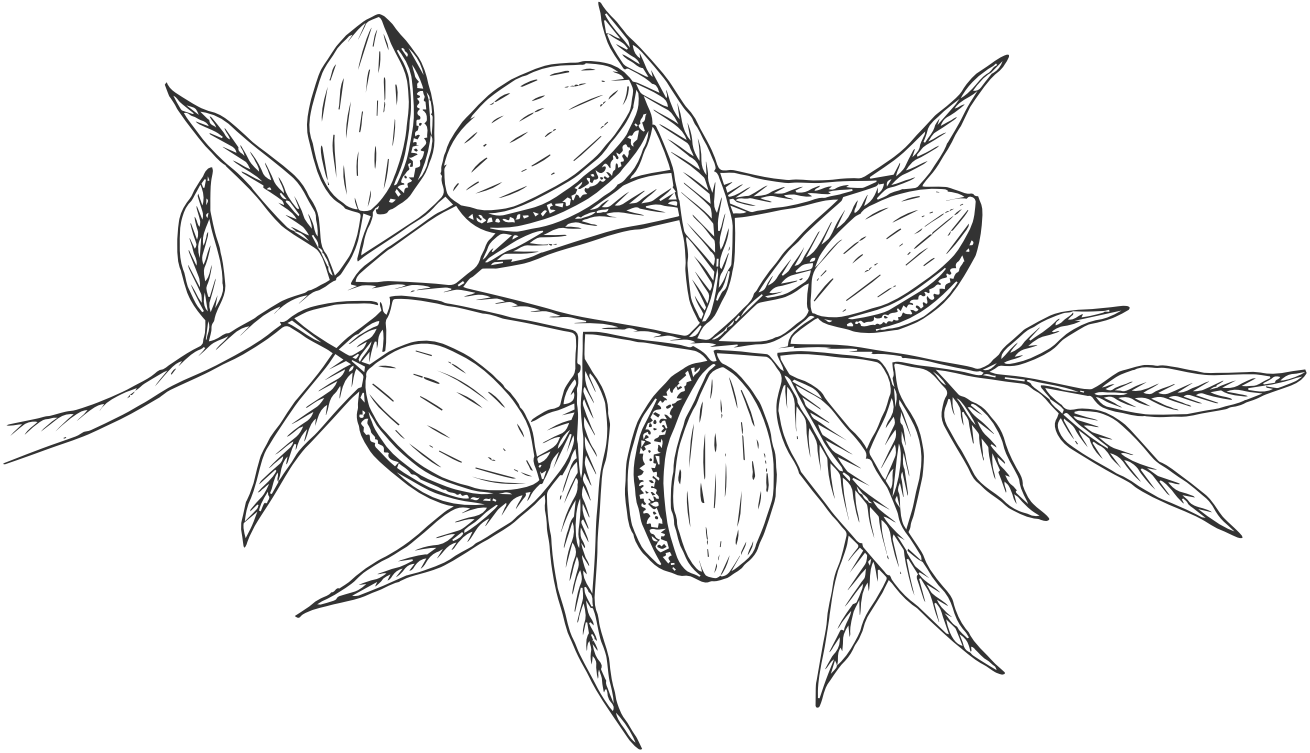
**Lorem Bio stimulant
containing rhizosphere organic acids
Rhizosphere pH reducer**

Biological role of rhizosphere organic acids

Although soil microorganisms are considered an important indicator of soil fertility and productivity due to their specific effect on soil physicochemical properties such as organic matter, plants can also secrete a wide range of compounds in the environment around the roots (Rhizosphere Zone) to change the biological and chemical properties of the soil according to their needs. Accordingly, the physicochemical properties of the rhizosphere zone are a function of the interaction between plants and microbiota.

Organic acids with low molecular weight (including lactic acid, citric acid, oxalic acid) are released into the soil by plants and microorganisms in common, but with different purposes. These goals are:

By secreting special compounds, especially carboxylic acids (OAs) from the root shoot to the rhizosphere soil environment, plants facilitate the dissolution and absorption of essential nutrients such as carbon and the provision of energy sources (dissolution and absorption of phosphorus) for certain types of microorganisms. they do This process, which is called chemotaxis, allows plants to induce and stabilize the formation and proliferation of a population of special microorganisms whose activity is beneficial for that particular species (PGPB growth-promoting bacteria).



PH Ca[®] Ingredients

Lactic acid

Citric acid

Oxalic acid

On the other side of this interaction, the bacteria attracted to the rhizosphere region (through the process of chemotaxis), by absorbing carbon sources, produce organic carboxylic acids (OAs) with much larger amounts. These organic acids increase the amount of phosphorus that can be absorbed by the plant by inhibiting the activity of phosphorus monoesters. At the same time, with the decrease in pH, the ability to absorb other elements also increases. In this way, carboxylic acids play the role of a strong biological stimulus for plants and rhizosphere microbiota.

Soil microbial ecology: lactic acid affects soil microbial ecology. Its production can lead to soil acidification, which affects the availability of nutrients and microbial community dynamics.

Plant growth and nutrition: In the rhizosphere, lactic acid producing bacteria can increase the dissolution of nutrients and make essential nutrients available to plants. This leads to improved plant growth, especially in soils with a lack of nutrients.

Natural biological control agent: some strains of lactobacillus bacteria, in the process of natural competition with the production of lactic acid, suppress other plant pathogenic bacteria, thus reducing the occurrence of diseases and the need They reduce chemical toxins.

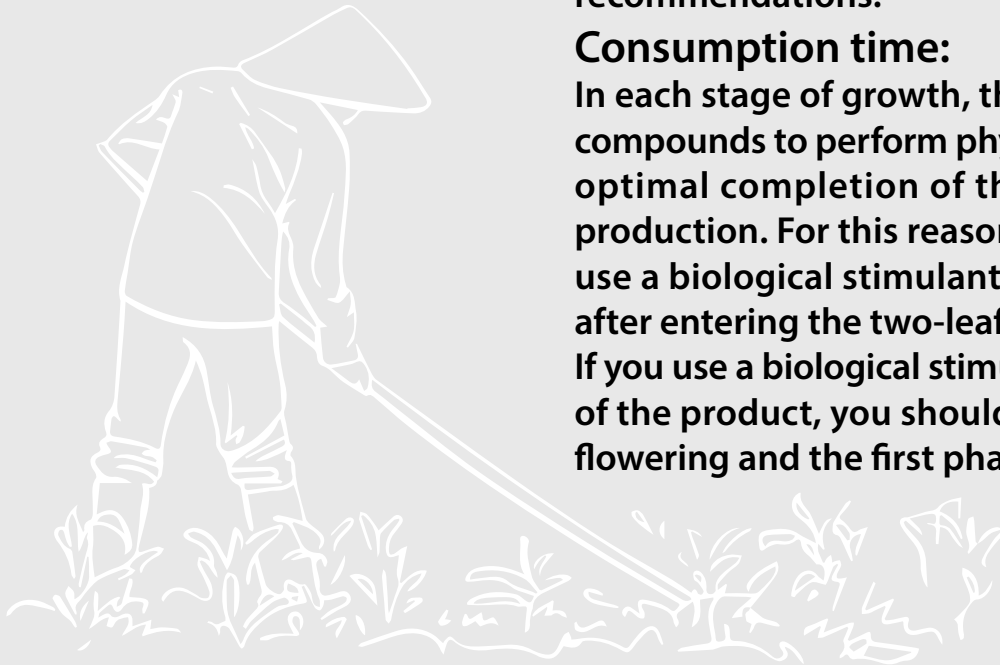
Suggestions for consumption:

As it was said, biological stimulators are compounds that are added to the soil in specific quantities in order to increase the activity of soil microorganisms and direct their activity in a specific direction. Biological agents, accuracy in the time and place of their application is important. Based on this, we offer the following recommendations:

Consumption time:

In each stage of growth, the plant produces biological compounds to perform physiological activities, and the optimal completion of that stage depends on their production. For this reason, our recommendation is to use a biological stimulant in the first stage of growth, after entering the two-leaf stage.

If you use a biological stimulant to increase the amount of the product, you should use this PH Ca® in both the flowering and the first phase of the fruiting cycle.





It is necessary to remember that PH Ca[®] increases the absorption of elements by the root system by increasing the activity of the microbial flora in the rhizosphere area. For this reason, use PH Ca[®] with any fertilizer product to increase the absorption of the elements in that fertilizer. You increase that fertilizer.

Application method:

PH Ca[®] can be used in both spraying methods and irrigation system. Of course, since the absorption in the roots is done at a higher level, injection in the irrigation system and near the roots is a more appropriate choice. Keep in mind that as you increase the population of microorganisms, you must provide them the necessary food sources.

Using fertilizer products with high amounts of organic matter will help you strengthen soil microorganisms.

Consumption amount:

The amount of PH Ca[®] consumption depends on various factors such as soil pH, soil organic matter, salinity, crop density and plant growth stage. The amounts below are a general recommendation and the appropriate amount for your cultivation can be more or less.

Greenhouse: 20 liters for 3000 square meters per use

Crops: 20 liters per hectare per use

Orchards: 100 ml per tree

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