

Impact of using a biofertilizer in chestnut productivity

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The chestnut tree (*Castanea sativa* Mill.) has a high economic importance in Portugal, especially in mountain regions, between 500-1100 m of altitude, where its cultivation occupies large areas.

Despite the importance for farmers, *C. sativa* suffers from several vulnerabilities which reduce the chestnut production, mainly, climatic exchanges, low fertility soils, ink disease or chestnut blight. In order to minimize the impact of biotic or abiotic agents on chestnut orchards, the present study analyzes the efficacy of the biofertilizer “Ergofito”.

Ergofito is a biofertilizer that promotes the growth and resistance of plants to pests and diseases. This biofertilizer is a combination of microbial diversity that naturally occurs in healthy soils as well as various mineral nutrients required for plant development. The composition of the product is diverse, and for this study was selected the product more suitable for chestnut trees.

The application of the product was made into two moments and it was applied either, in young and adult trees. In order to evaluate the chestnut productivity due to the use of

Ergofito a biochemical, mineral and physiological analysis on leaves as well as biometric and sensorial evaluation on chestnut fruits was conducted.

The results showed that there are no differences in sensorial properties in chestnut fruits although on chestnut fruits from plants treated with the biofertilizer the content of soluble sugars and crude protein increased compared to the control.

The young chestnut trees biofertilized have a higher content of nutrients in the leaves, highest rate of transpiration and photosynthesis, higher performance index and a higher content of metabolites, including chlorophylls, phenols and proteins. In adult chestnut trees the presence of Ergofito benefited the mineral content in leaves as well as the rate of photosynthesis and transpiration.