

3rd INTERNATIONAL MEETING AGRISCIENCE & PRACTICE

EFFECT OF BORON (B) NUTRITION ON DEVELOPMENT OF GRAY MOLD IN PEPPER (*CAPSICUM ANNUUM* L.)

Dusan Spasov, Biljana Atanasova, Biljana Kovacevik,
Dragica Spasova, Mite Ilievski

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Introduction

- The pepper is a warm season crop from fam. Solanaceae and has great importance in human nutrition.
- In Macedonia, in 2020, pepper was grown on an area of 9275 ha, with an average yield of 22 187 kg/ha (SSO).
- Pepper is susceptible to gray mold caused by *Botrytis cinerea* Pers., especially in protected areas (greenhouses).

- *B. cinerea* is considered as a non-specialised necrotrophic fungus that multiplies on debris of a broad range of plant species
- Following infection *B. cinerea* may remain latent until suitable conditions for its development are made.
- Fungicide application is the most commonly used method to control fungal pathogens.
- Alternative means of control, such as nutrient application might be a potential way to control disease, as well as improving plant growth.

- **Boron (B) is essential nutrient for plant growth.**
- **It significantly affects the yield, improving plant fertilization.**
- **The concentration of this element is particularly high in the generative organs and in the leaves, especially in the marginal part of the leaf.**
- **B is one of the elements that plants need for normal growth and development.**
- **B deficiency or sufficiency causes major physiological and morphological changes in plants.**

Material and method

- Observations on the effect of the microelement Boron (B) on the grey mold development were carried out in Bansko locality, Strumica, Republic of Macedonia, in January 2023.
- The examinations were carried out in a commercial greenhouse, with an area of 0.15 ha, planted with hot pepper, variety Fortes.
- The greenhouse was heated using hot water.



- In the process of pepper production, complete protection against diseases and pests was carried out, as well as adequate nutrition of the plants.
- Insecticides based on Spinosad and Abamectin were used against pests.
- It was not treated with fungicides.
- Plants were treated with the microelement boron (B), in the form of 11% borethanolamine, first foliar (24.01, 2023), and after 10 days, through the irrigation system, in a dose of 0.5L/0.1ha.



Results

- During foliar application of B, phytotoxicity symptoms from B were observed on leaves of pepper plants.
- Phytotoxicity appeared along the edges of the leaves, in form of inner bends and as leaf spots.





- Changes in the leaves caused by boron phytotoxicity led to the appearance of gray mold, caused by *B. cinerea*.
- The disease did not develop intensively, but remained only on individual leaves.
- After soil application of the microelement boron, intensive development of gray mold was not observed.

- In our research, the foliar application of B and the phytotoxicity it caused on the plant leaves caused the development of gray mold.
- According to some literature data, the soil application of B leads to a reduction in the development of botrytis.
- Based on our initial observations, after the soil application of B, no intensive disease development was observed, which could mean that the soil application of boron reduces the development of the disease.



Conclusion

- These are our initial observations that do not correspond to some data from the literature.
- Further research should be done to determine the relationship between the microelement Boron, the occurrence of phytotoxicity and the development of gray mold caused by *B. cinerea* in pepper.

