



INFLUENCE OF THE CULTIVATION SYSTEM ON THE YIELD OF MUSKMELON (*Cucumis melo* L.)

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Abstract: *The aim of the study was to carry out a comparative analysis between two cultivation systems for muskmelon, namely tunnel cultivation and open-field cultivation. Each system included two variants, using two hybrids.*

The biological material used consisted of two hybrids: Karpatos, an extra-early hybrid of the classic Galia type, whose fruits contain the LSL gene (allowing continued ripening after harvest), and Jucar, an early hybrid of the Galia type. The results obtained showed that the Karpatos hybrid was more productive in both cultivation systems, while among the analyzed systems, tunnel cultivation stood out with higher yields.

• Introduction

The cultivation of melon (*Cucumis melo* L.) occupies an important position in the global vegetable sector, owing to the high nutritional value of its fruits and the species' adaptability to diverse environmental conditions. The fruits are characterized by a rich content of sugars, vitamins, minerals, and bioactive compounds with antioxidant properties, thereby increasing consumer interest in this crop. Moreover, the high genetic diversity of the species has enabled the development of numerous cultivars and hybrids adapted to different cropping systems

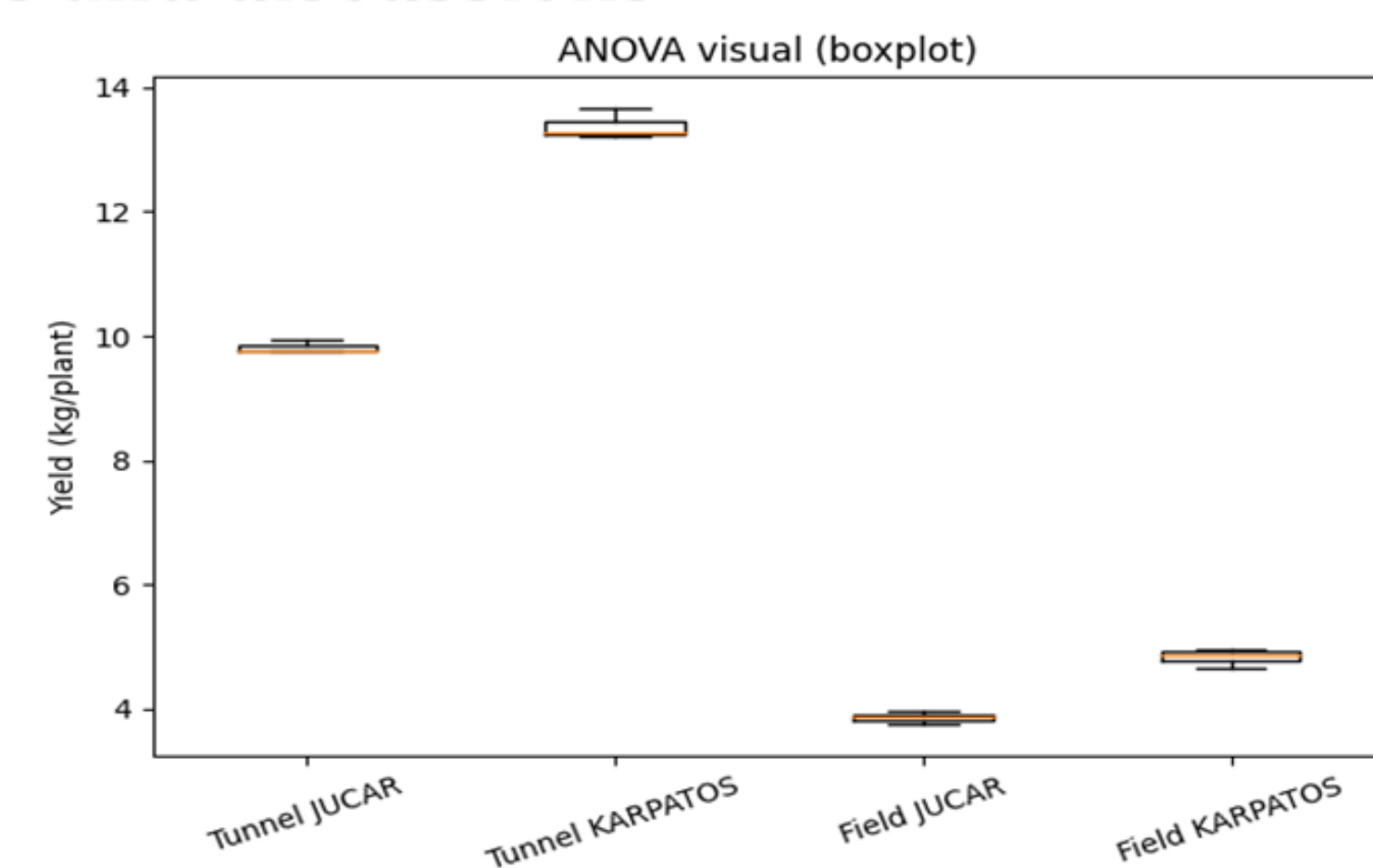
• Material and method

The research was conducted in 2025 under two cultivation systems: open-field cultivation, established on chernozem soil with plant exposure to natural temperature and precipitation conditions, and protected cultivation in polyethylene-covered tunnel systems, also established on chernozem soil, allowing partial control of temperature and humidity.

The experimental design was bifactorial, including the following factors:

- Factor A – cultivation system (tunnel, open field);
- Factor B – hybrid (Jucar F1, Karpatos F1).

• Results and discussions



The graph highlights clear differences among the experimental variants in terms of yield per plant, confirming the results of the analysis of variance (ANOVA). The medians are distinctly separated, with no significant overlap between the interquartile ranges, indicating evident statistical differences among the variants.

The hybrid KARPATOS F1 stands out with the highest median values and a relatively uniform distribution, confirming its superior productivity

• Conclusions

In conclusion, the tunnel cultivation system leads to very significant increases in yield compared to open-field cultivation. The hybrid KARPATOS F1 demonstrates the best productive performance and the highest stability. All differences among the experimental variants are statistically significant (LSD test).