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## Response of oilseed sunflower (*Helianthus annuus* L.) to foliar micronutrient fertilization\*

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### Abstract

Sustainable fertilization involves providing plants with optimal doses of necessary macro- and micronutrients. The demand for specific nutrients depends on various factors, including the cultivated species. Sunflower has moderate fertilization requirements, but certain elements are crucial for achieving high yield of good quality achenes. The purpose of this study was to evaluate the response of oilseed sunflower (variety MAS 81K) to foliar application of micronutrients: zinc (Zn), iron (Fe), copper (Cu), manganese (Mn), molybdenum (Mo), and boron (B) in comparison to the control. A one-factor field experiment was conducted in 2022 and 2023, in a randomized block design. The soil at the experimental site was classified as Haplic Cambisol (Eutric) formed from loess, with moderate levels of Zn, Fe, Cu, Mn, and low levels of B. It was demonstrated that the weather conditions modified the effectiveness of foliar fertilization during the study years. The average achene yield in 2022 and 2023 was 3.41 t ha<sup>-1</sup> and 3.57 t ha<sup>-1</sup>, respectively. As a result of B fertilization, there was a significant increase in the flower head diameter and yield components. The difference in the achene yield obtained after B application was 0.29 t ha<sup>-1</sup> in 2022 and 0.32 t ha<sup>-1</sup> in 2023 compared to the control. Fertilization with Mo also had a positive effect on the achene yield compared to the control, while foliar application with Cu had a positive effect on the fat content. It was shown that the best results were primarily achieved with B application, followed by Mo and Cu.

**Keywords:** oil plant, nutrients, foliar fertilization, yield components, yield, quality of achenes

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