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REVIEW STUDY ON THE SUSTAINABLE USE OF CHEMICAL FERTILIZERS IN SOYBEAN CULTURE

R. C. JURCUȚ, F. IMBREA, L. BOTOȘ, S. BĂTRÎNA
University of Life Sciences "King Michael I" from Timisoara

Abstract: *Soybean cultivation plays a vital role in global food production, but the use of chemical fertilizers raises environmental and health concerns. Sustainable practices are crucial to balance food demand and minimize the negative impact. Integrated nutrient management, organic fertilizers, crop rotations, and conservation tillage can reduce reliance on chemical fertilizers, improving soil fertility and reducing pollution. Precision agriculture technologies enhance fertilizer efficiency. Social and economic factors, such as access to affordable fertilizers and farmer support, must be considered for sustainable fertilizer use in soybean cultivation.*

• Introduction

Soybean cultivation is important but can have negative environmental impacts due to the use of chemical fertilizers.

To ensure sustainability, practices such as precision agriculture, organic fertilizers, crop rotation, and integrated pest management are essential. Precision agriculture targets fertilizer application, while organic fertilizers and crop rotation improve soil health.

• Material and method

Based on the bibliography that we had consulted the sustainable use of chemical fertilizers in soybean cultivation is crucial due to its environmental impact, economic significance, and nutritional value.

Sustainable practices, such as precision agriculture, organic fertilizers, crop rotation, cover crops, can reduce the negative effects of chemical fertilizers on the environment while maintaining productivity.

• Results and discussions

The sustainable management of fertilizers in soybean cultivation can be achieved through precision agriculture techniques, such as soil sensors and variable rate technology, along with the use of organic fertilizers and crop rotation, as supported by scientific studies and the consulted bibliography.

• Conclusions

Soybean culture is vital for its protein and oil production, and sustainable practices like precision agriculture, organic fertilization and crop rotation, are crucial for long-term sustainability. Precision agriculture optimizes inputs, organic fertilization improves soil health, crop rotation manages pests.

These practices enhance yields, reduce waste, and promote sustainable soybean cultivation.

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