



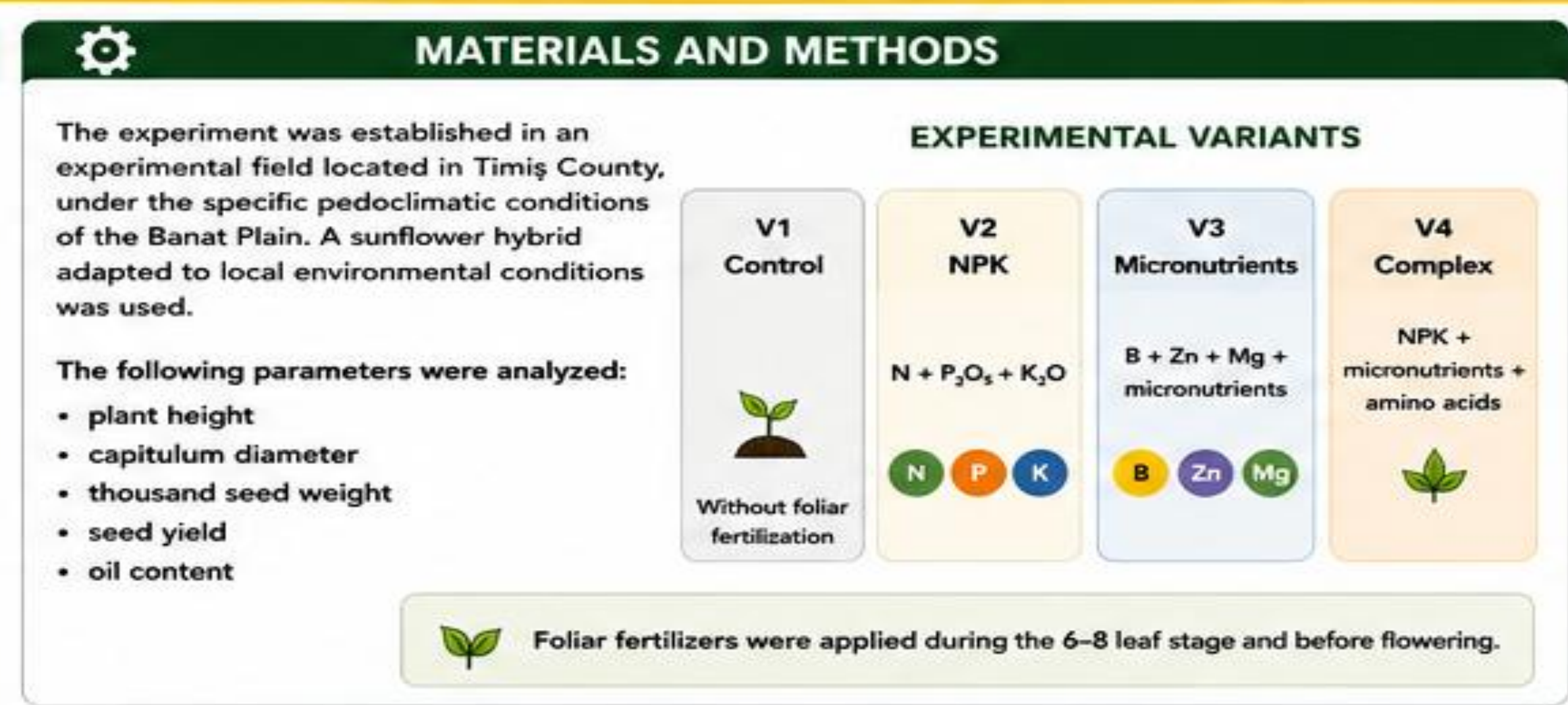
RESEARCH ON THE EFFICIENCY OF FOLIAR FERTILIZATION IN SUNFLOWER CROP (*Helianthus annuus* L.)

Varga Rebeca, Radulov Isidora, Crista Laura, Lato Alina, Berbecea Adina, Nita Lucian, Crista Florin
Faculty of Agriculture, University of Life Sciences "King Mihai I" from Timisoara



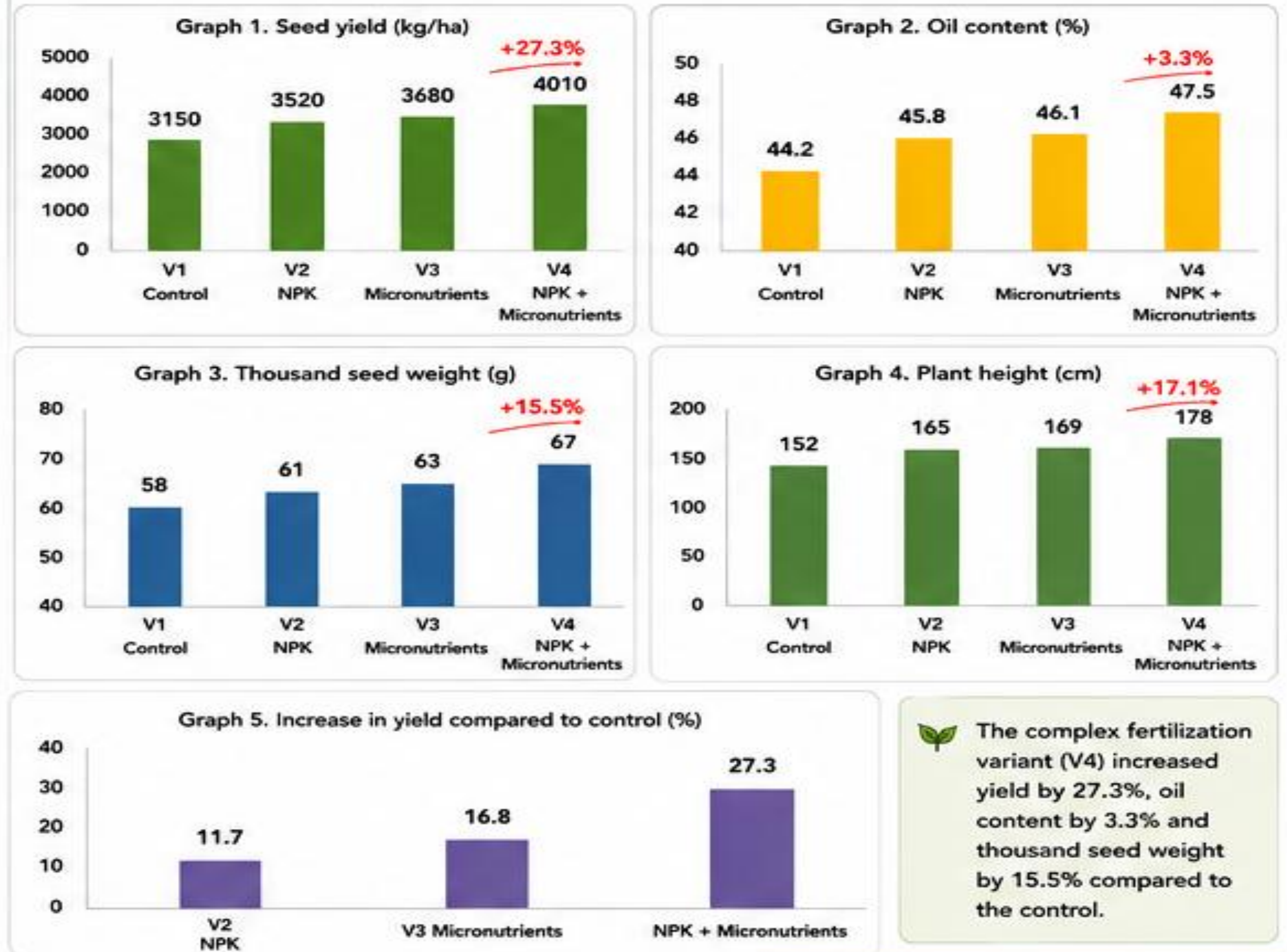
ABSTRACT

Sunflower is one of the most important oilseed crops cultivated in Romania due to its high economic value and good adaptability to pedoclimatic conditions. In the context of increasing climatic stress and the need for efficient nutrient management, foliar fertilization represents an important technological solution for improving crop productivity and quality. The aim of this study was to evaluate the influence of foliar fertilizers on sunflower growth, yield, and oil content. The experiment was conducted under field conditions using several foliar fertilization variants compared to an unfertilized control. The obtained results highlighted the positive effects of foliar fertilization on seed yield, thousand seed weight, and oil content, demonstrating the efficiency of foliar nutrient application in sunflower cultivation technology.



RESULTS AND DISCUSSIONS

The application of foliar fertilizers positively influenced sunflower growth and productivity. The highest values were obtained in the complex fertilization variant (V4). Compared to the control, all fertilized treatments showed significant increases in production. Boron played an essential role in flowering and fertilization processes. Foliar fertilization improved plant resistance to abiotic stress, especially under water deficit conditions.



INTRODUCTION

Sunflower plays a major role in Romanian agriculture due to its high economic importance and adaptability to environmental conditions specific to the western part of the country. In recent years, climate change and frequent drought periods have increased the need for modern fertilization technologies capable of improving nutrient use efficiency and plant resistance to stress conditions.

Foliar fertilization represents a rapid and efficient method for correcting nutrient deficiencies and stimulating plant physiological processes. The application of foliar fertilizers contributes to improving photosynthesis, flowering, pollination, and seed formation, with direct effects on yield and crop quality.

The main objective of this research was to assess the influence of foliar fertilization on the development and productivity of sunflower crops under the pedoclimatic conditions of Timiș County.

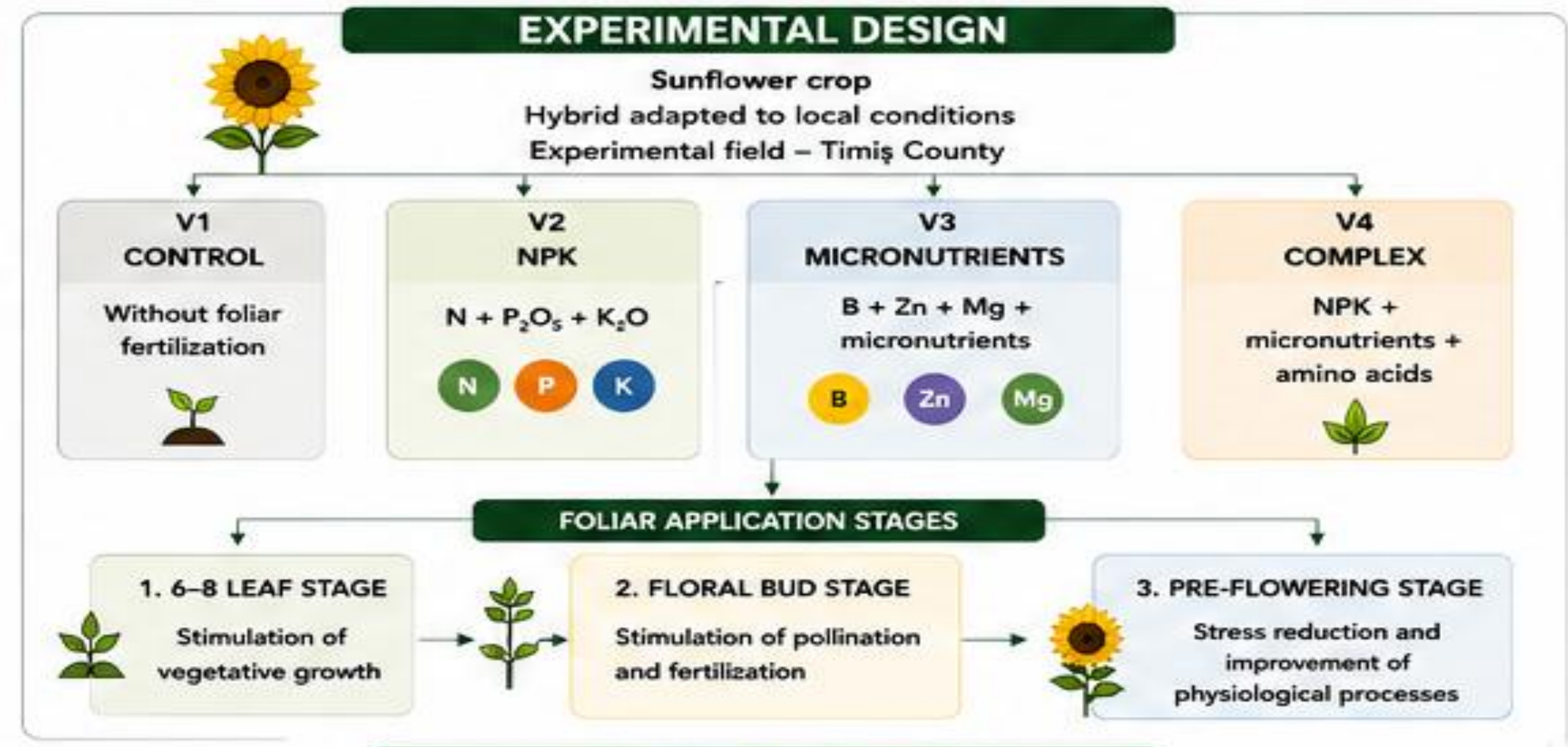
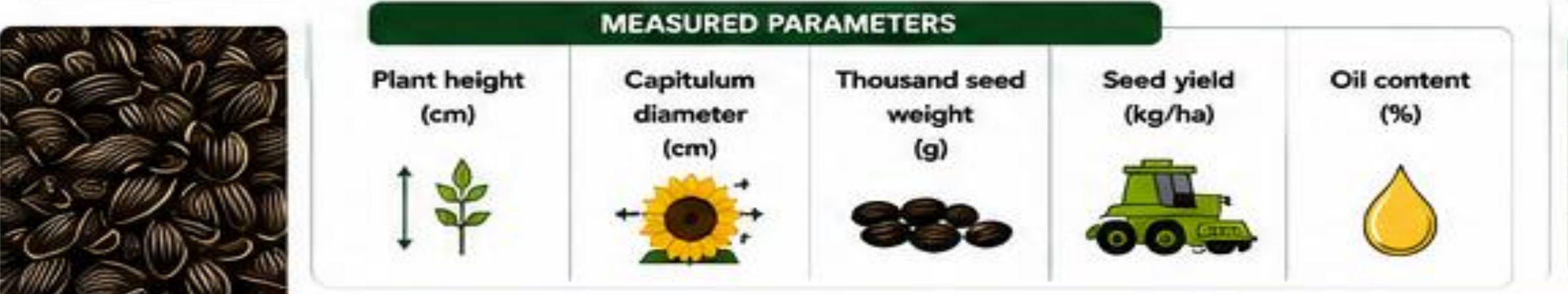


TABLE 2. MOMENTS OF FOLIAR FERTILIZER APPLICATION

Growth stage	Applied fertilizer	Purpose
6-8 leaves	NPK + micronutrients	Stimulation of vegetative growth
Floral bud stage	Boron fertilizer	Improvement of fertilization
Pre-flowering stage	Amino acids + Mg	Stress reduction

PRACTICAL IMPORTANCE OF THE STUDY

The obtained results may contribute to the optimization of modern foliar fertilization technologies used in sunflower cultivation under the pedoclimatic conditions specific to western Romania.



- Foliar fertilization positively influenced sunflower yield and quality.
- The complex fertilization variant (NPK + micronutrients) recorded the best results.
- Foliar fertilizers improved nutrient use efficiency and stimulated plant physiological activity.
- Boron application significantly contributed to flowering and seed formation processes.
- Foliar fertilization represents an efficient technological solution for improving sunflower productivity under current climate conditions.