

INTRODUCTION

- The Mediterranean basin has been acknowledged as a biodiversity hotspot of wild edible plants (WEPs), which have been widely used in many local recipes due to its rich nutrient composition.
- *Sonchus oleraceus* L., a member of the Asteraceae family, is a noxious weed of several annual or perennial crops with severe effects on crop performance and yield.
- Sow thistle has been also considered as a rich source of phenolic compounds which are strongly associated with antioxidant activity and beneficial health effects that could be further exploited by pharmaceutical industry.
- The main goal of the current study was to evaluate the effect of fertilization regimes on growth parameters of *S. oleraceus* plants aiming to introduce its commercial cultivation in Mediterranean farming systems.

MATERIALS AND METHODS

- Young seedlings of *S. oleraceus* were transplanted after emergence in 2 L plastic pots containing peat and perlite (1:1, v/v).
- Seven treatments were used which varied in the amounts of N:P:K namely 100:100:100 (C111), 200:100:100 (C211), 200:200:200 (C222), 300:100:100 (C311), 300:200:200 (C322) and 300:300:300 (C333) ppm ratio of N:P:K and control (C0) where no fertilizers were added and they were applied via fertigation.
- Each treatment included fifteen pots (n=15) and in total they were used 105 pots. All the treatments received the same amount of nutrient solution and plants were fertigated manually once a week with 150 mL of N-P-K per plastic plot.
- Before harvest, it was recorded the chlorophyll content of leaves (SPAD index values), while after harvest the growth traits namely number of leaves/plant, weight of leaves/plant (g), dry matter of leaves (%), leaf area (cm²) and specific leaf area (m²/kg) were also determined.

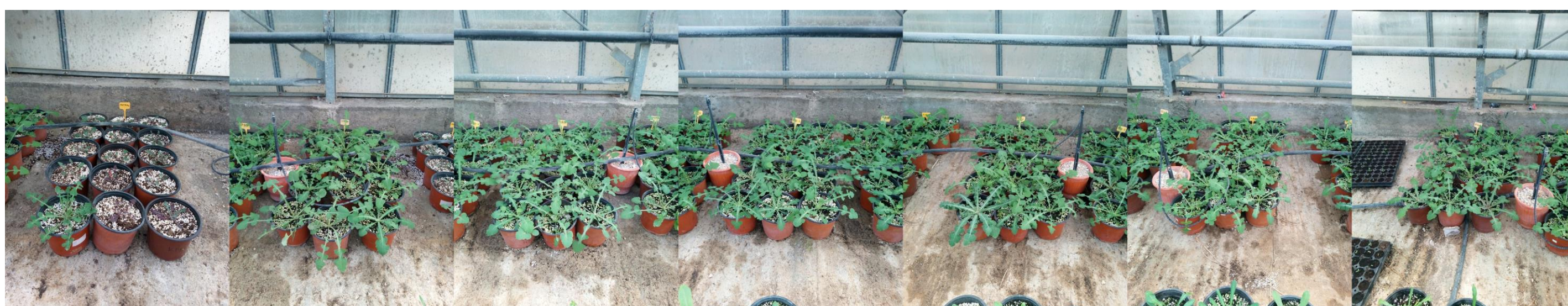
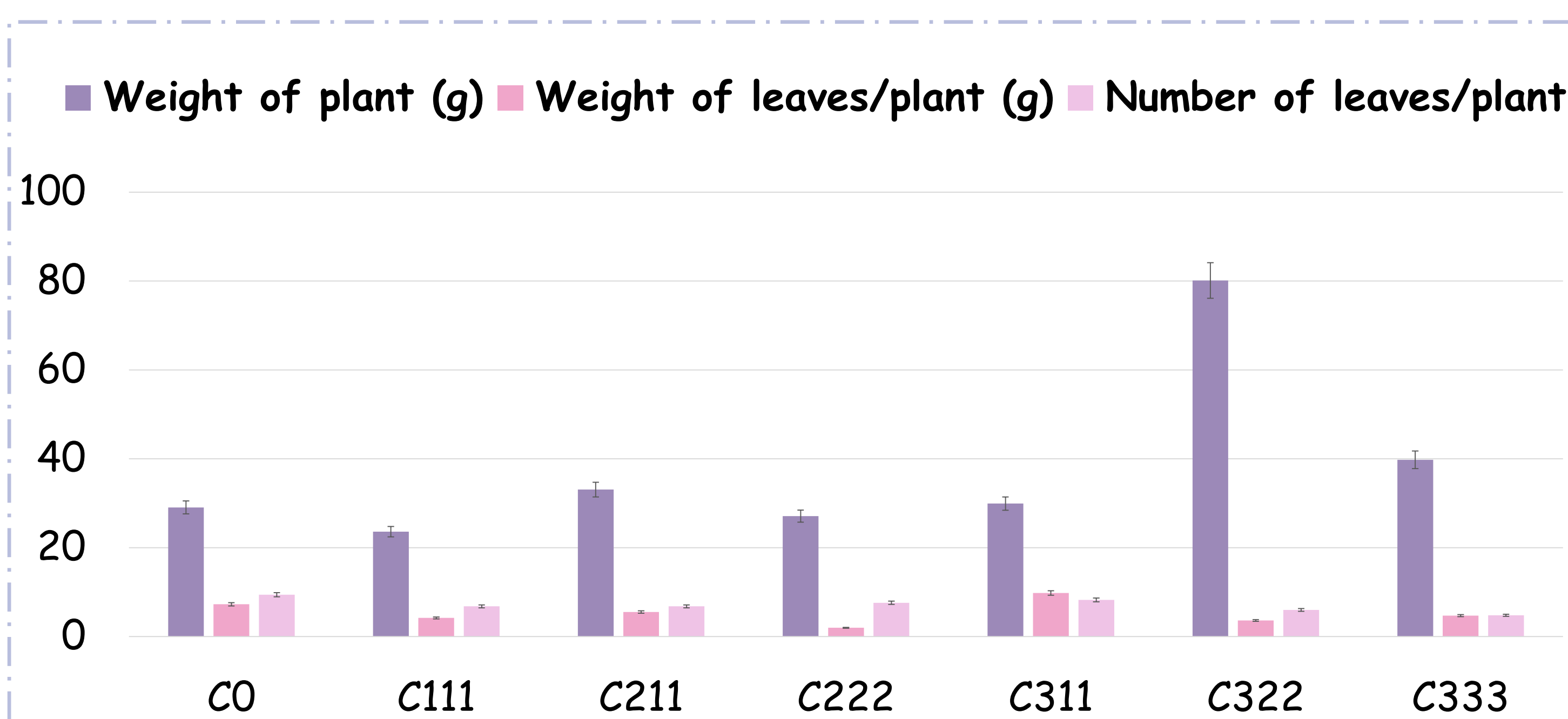


Image 1. The effect of fertilization regimes on growth parameters of *S. oleraceus* plants. (from left to right C0, C111, C211, C222, C311, C322 and C33 treatments)

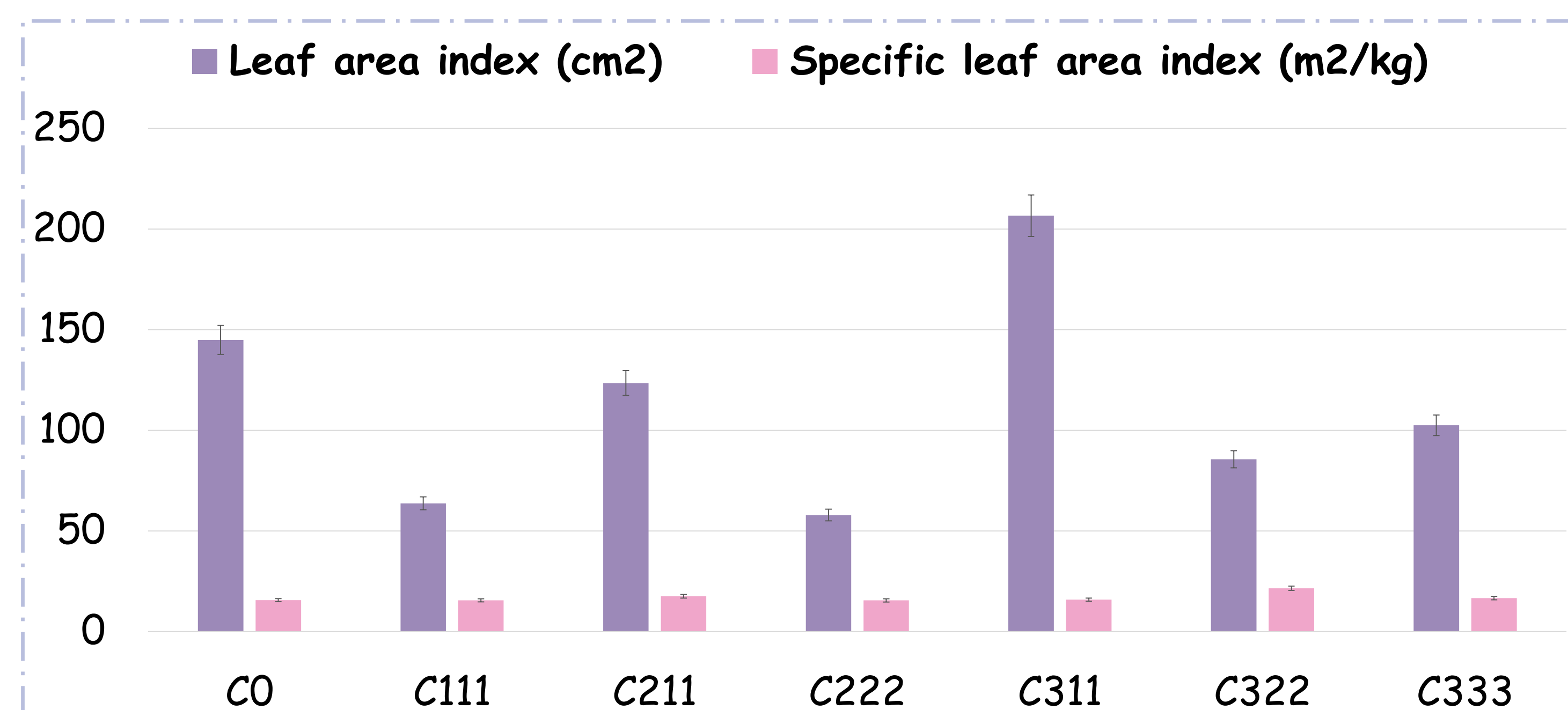
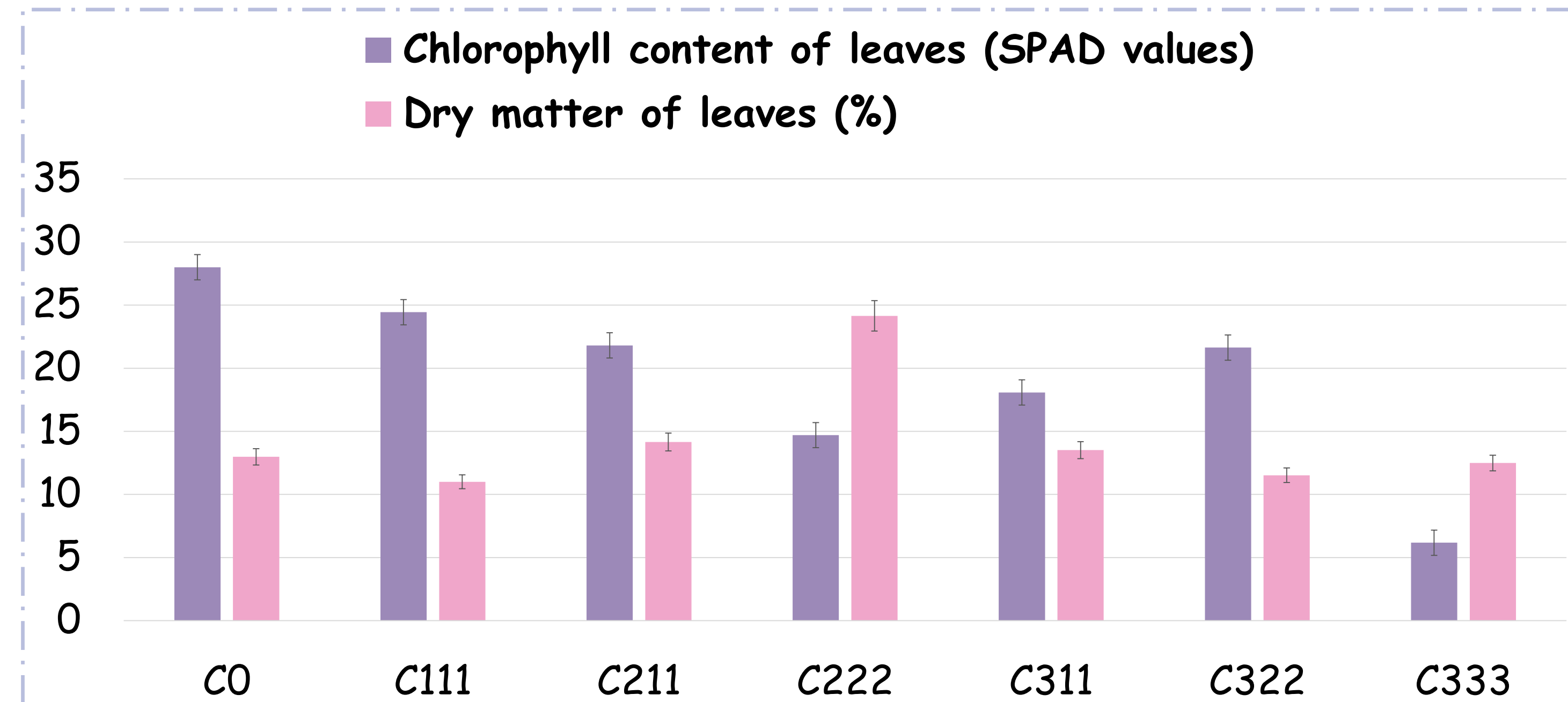
RESULTS



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RESULTS



- Regarding the yield parameters, the treatments of 300:200:200 (C322) and 300:100:100 (C311) recorded the highest values related to weight of plant (g) and weight of leaves/plant (g) respectively, while the highest number of leaves/plant was achieved by the control treatment (C0).
- The chlorophyll content of leaves presented a wide variation based on the different fertilizer regimes with the control treatment (C0) having the highest values and the increased ratio of N:P:K (300:300:300) the lowest one respectively.
- The dry matter of leaves (%) was beneficially affected in the case of 200:200:200 (C222) treatment which had the highest content.
- Regarding leaf area and specific leaf area, the treatments 300:100:100 (C311) and 300:200:200 (C322) recorded the highest values based on the results of the study.

DISCUSSION AND CONCLUSIONS

- Fertilization regime had a beneficial effect on the crop performance of *S. oleraceus* plants especially in the case of the increased ratio of N:P:K namely 300:100:100 (C311) and 300:200:200 (C322).
- Commercial cultivation of wild edible species is a promising cropping alternative in the Mediterranean basin under the climate change conditions.
- Further research is demanded in terms of evaluating and standardizing the cultivation protocols in order to establish the commercial cultivation of such species.
- Determining the phytochemical composition and antimicrobial properties is an essential step for the exploitation of these species due to its rich nutritional composition and medicinal properties.

REFERENCES

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