



ENHANCING THE ENOLOGICAL POTENTIAL OF INDIGENOUS IONIAN GRAPE VARIETIES THROUGH VITICULTURAL AND WINEMAKING INNOVATIONS

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INTRODUCTION

Greece may represent only about 1% of the world's vineyard area—roughly 100,000 hectares in 2022—but it stands out for its incredible richness in native grape varieties. With more than 200 indigenous types, many of which are found in semi-arid regions, Greece offers a rich heritage of vine varieties that have adapted over centuries over centuries to the soils and particular climatic conditions.

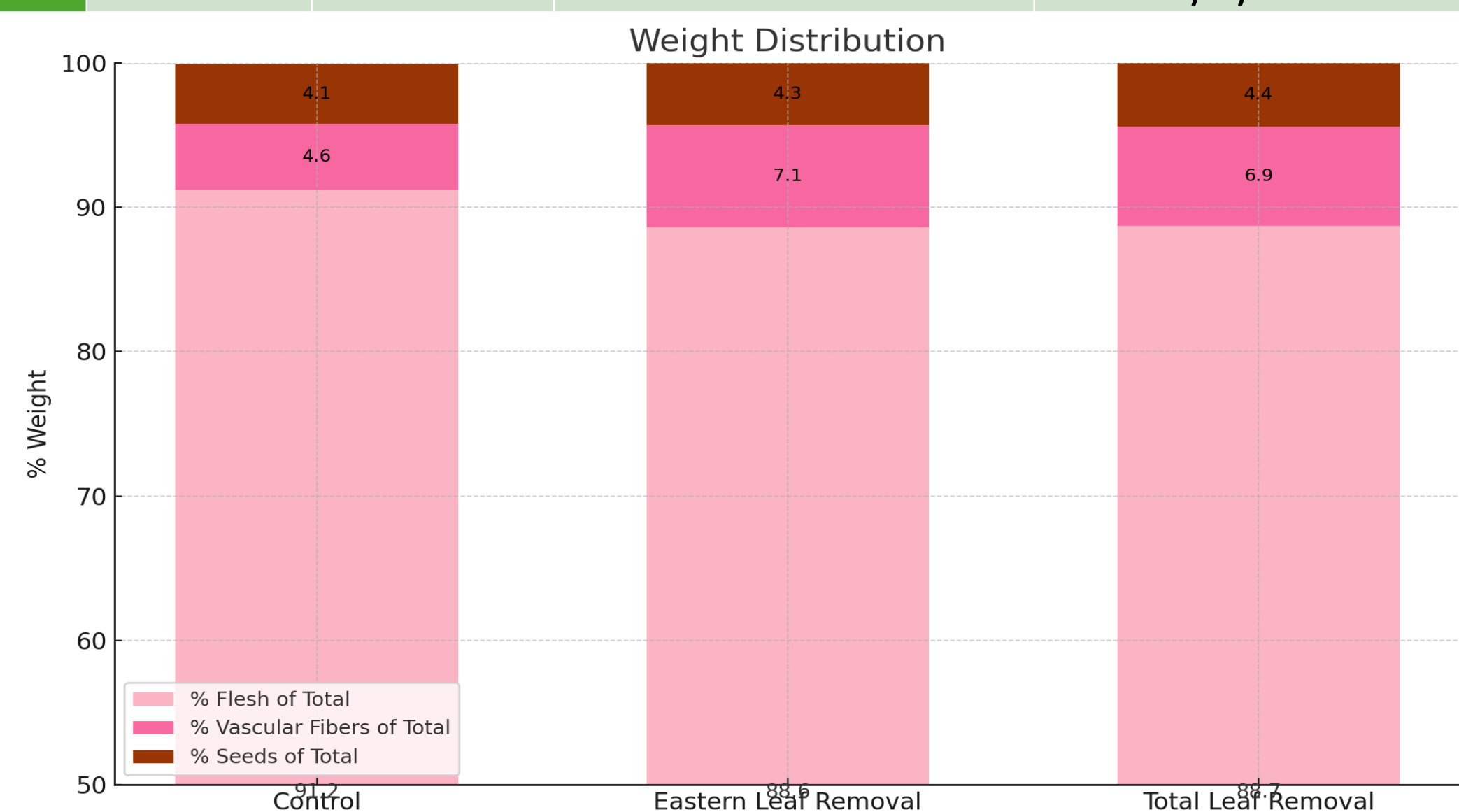
It is worth noting that the Ionian Islands also offer a rich diversity of indigenous grape varieties, with Kerkyra (Corfu) and Zakynthos playing an important role in the region's viticultural identity.

MATERIALS AND METHODS

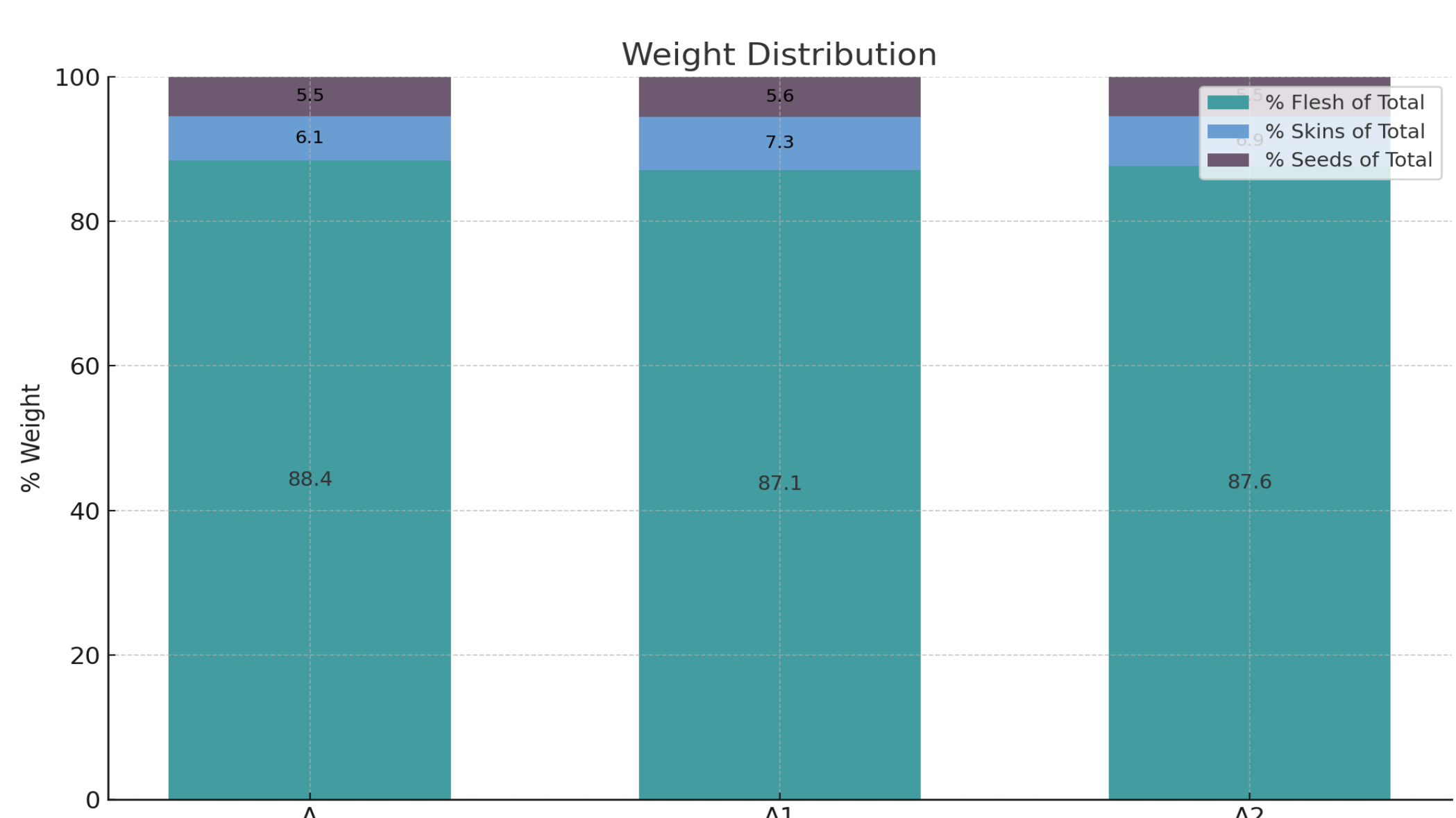
Viticultural interventions included canopy management and controlled irrigation in Augoustiatis vineyards (Zakynthos) to optimize phenolic maturity, while over-ripening treatments were applied to enhance grape exposure. For Kakotrygis and Skiadopoulo (Kerkyra), microclimate modifications were introduced through defoliation techniques to influence grape composition. Winemaking approaches involved targeted tannin additions and glutathione supplementation to limit oxidation and improve wine stability.

RESULTS

| AVGOUSTIATIS | Brix | pH | TA | Harvest |
|--------------|--------|--------|--------|-----------|
| Control | 21.8 b | 3.41 a | 5.85 c | 24/9/2024 |
| Eastern LR | 23.9 b | 3.37 b | 6.75 b | 24/9/2024 |
| Total LR | 23.1 a | 3.08 c | 7.8 a | 24/9/2024 |



| SKIADOPOULO | Brix | pH | TA | Harvest |
|-------------|--------|--------|--------|-----------|
| Control | 21.8 a | 3.49 a | 5,05 a | 16/9/2024 |
| Eastern LR | 23.3 b | 3.58 b | 5.75 b | 16/9/2024 |
| Total LR | 24.4 b | 3.74 c | 5.3 b | 16/9/2024 |



In Kerkyra, local varieties such as Kakotrygis - a rare white grape - are used to produce elegant, aromatic wines that reflect the island's rich terroir. Zakynthos, on the other hand, is known for growing the red variety Avgoustiatis, and the white grape variety Skiadopoulo.

The research conducted on Kerkyra and Zakynthos aimed to enhance the quality and balance of local grape varieties by implementing targeted viticultural practices. Through canopy management, controlled irrigation, and defoliation techniques, the studies sought to optimize sunlight exposure, improve air circulation, and regulate vine water stress.



CONCLUSIONS

The findings demonstrate that annual vineyard management practices exert a significant influence on grape ripening dynamics and the resultant wine quality, with statistically significant differences observed across specific interventions. In particular, defoliation in white grape varieties contributed to improved grape health and a more pronounced aromatic profile. Phenolic extraction in the Augoustiatis variety was shown to be modulated by both viticultural practices and enological treatments. Sensory analysis further revealed that the oxidative stability of wines, notably those produced from Skiadopoulo and Kakotrygis, was enhanced through the addition of selected tannins and glutathione, thereby increasing their commercial potential. Overall, the study underscores the importance of implementing targeted viticultural and enological strategies to optimize the quality and marketability of wines from the Ionian region.

ACKNOWLEDGMENTS

