Co-Inoculation of *Lachancea thermotolerans* and *Lactobacillus plantarum* enhances the Fermentation and Quality of Spanish-Style Table Olives

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Background

Traditionally, the fermentation of Spanish-style table olives has been primarily driven by lactic acid bacteria (LAB). In recent years, there has been increasing interest in the use of other microorganisms, particularly yeasts. *Lachancea thermotolerans*, a yeast species frequently isolated from wine fermentations, exhibits different properties that may be beneficial for table olive fermentation.

Objective

Evaluate the impact of co-inoculating *L. thermotolerans* and *Lactobacillus plantarum* on the fermentation dynamics and quality parameters of Spanish-style table olives.

Methods

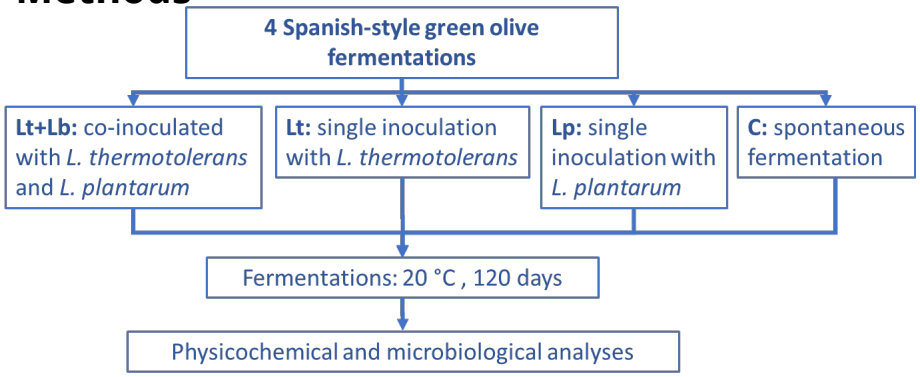

Fig 1. Diagram of the experimental design.

Results

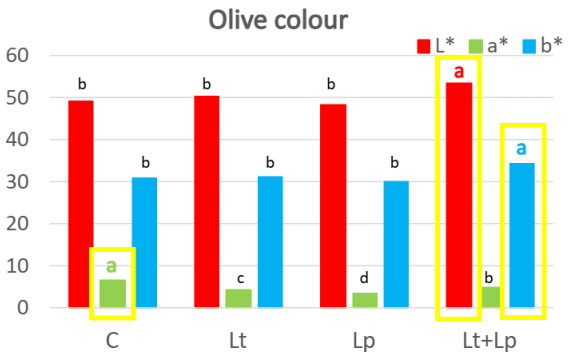

Fig 2. Colour of table olives.

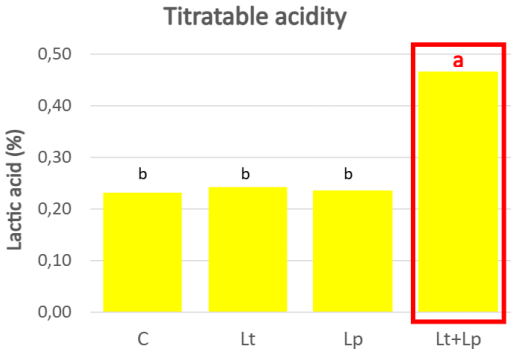

Fig 3. Titratable acidity of table olives.

L. thermotolerans promotes lactic acid bacteria during the first 20 days of fermentation.

Lt+Lp showed the highest concentrations of organic acids and enhance olive texture and color relative to the uninoculated fermentation.

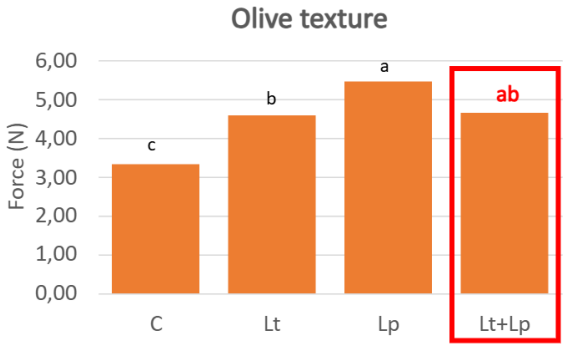

Fig 4. Texture of table olives.

Note: Different letters indicate statistically significant differences between fermentations.

Conclusions

Mixed cultures of *L. thermotolerans* and *L. plantarum* can enhance fermentation dynamics and final quality in Spanish-style table olives, offering a viable approach to produce olives with distinctive traits.