

Selection of yeasts for producing traditional method sparkling wines

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INTRODUCTION

The techniques employed in the production of sparkling wines have undergone a continuous process of evolution over the centuries. This has encompassed the discovery of spontaneous fermentations and the subsequent industrial application of starter cultures. The microbial strains predominantly employed for this purpose belong to the *Saccharomyces cerevisiae* species.



The present project involved the selection of *Saccharomyces cerevisiae* yeast strains, previously isolated from a variety of sugary food matrices, for the production of traditional sparkling wines. The strains were subjected to an initial technological screening, which identified 38 with favourable oenological characteristics. In order to ascertain their suitability for the production of sparkling wines, the ability of the strains to grow under conditions of low temperature and low pH was initially evaluated. Furthermore, flocculation tests were conducted. The strains deemed most promising will be employed in sparkling wine trials utilising the traditional 'Champenoise' method.

Given that the organoleptic properties of sparkling wine are largely contingent upon the physiological and metabolic characteristics of the yeasts employed for fermentation, it is imperative to conduct a meticulous selection of starters to imbue sparkling wines with a distinctive regional character, thereby fostering innovation and market segmentation (Raymond Eder and Rosa, 2021).

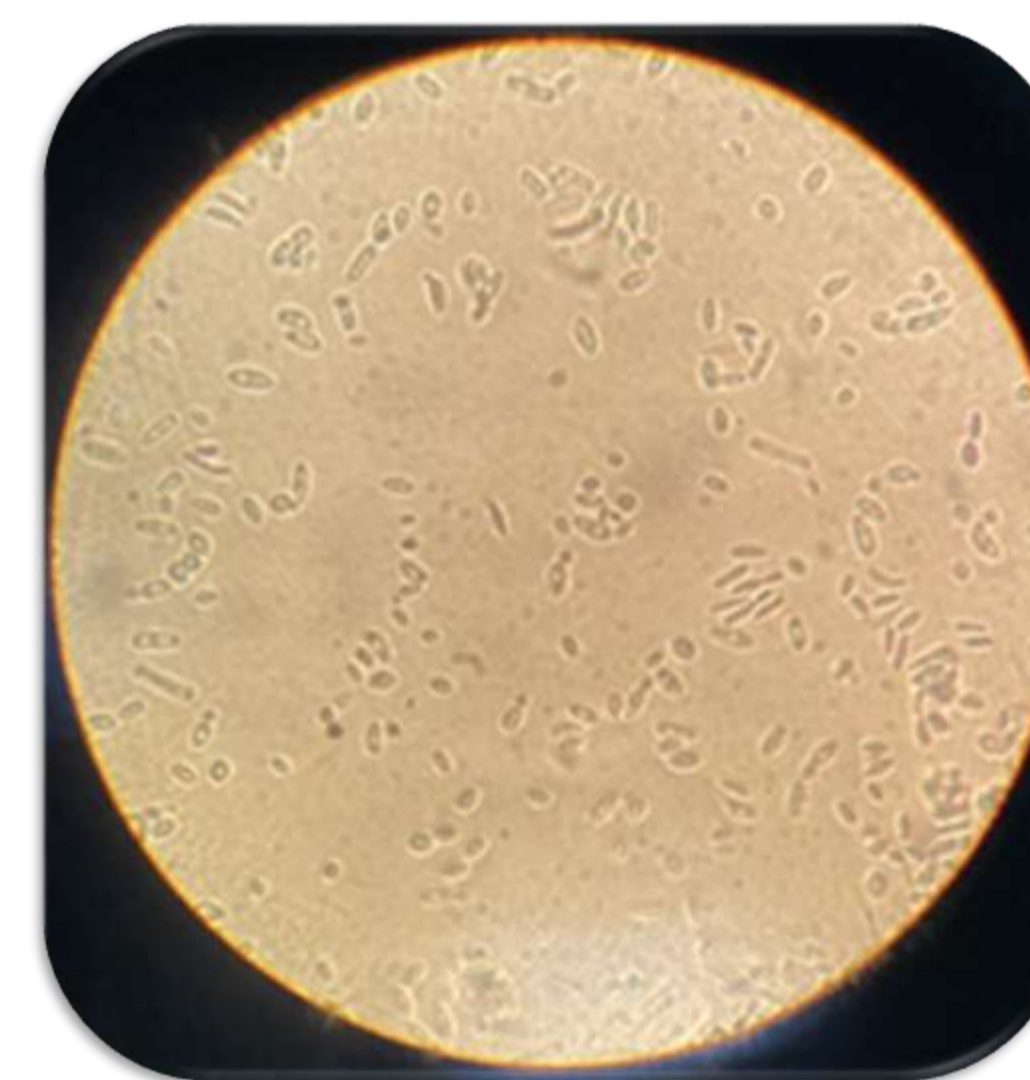
MATERIALS AND METHODS

The pH and temperature conditions were determined in accordance with the methodology described by Alfonzo et al. (2020). Growth patterns were observed through visual inspection with an optical microscope (Carl Zeiss Ltd) (Di Maio et al., 2012). With regard to the flocculation tests, the 38 strains were subject to visual monitoring over a period of 20 days, with an evaluation conducted on a scale from 0 (non-flocculating) to 5 (highly flocculating). For the strains that demonstrated notable flocculation, a quantitative analysis was conducted using Helm's assay, as previously described by Casey et al. (1994).

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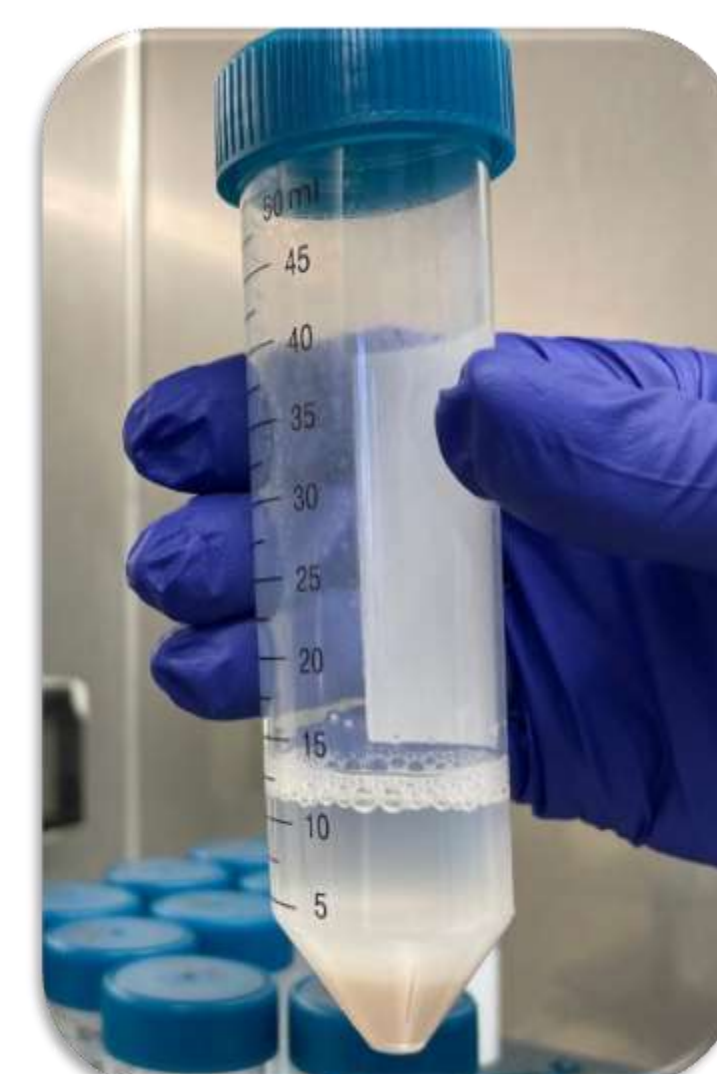
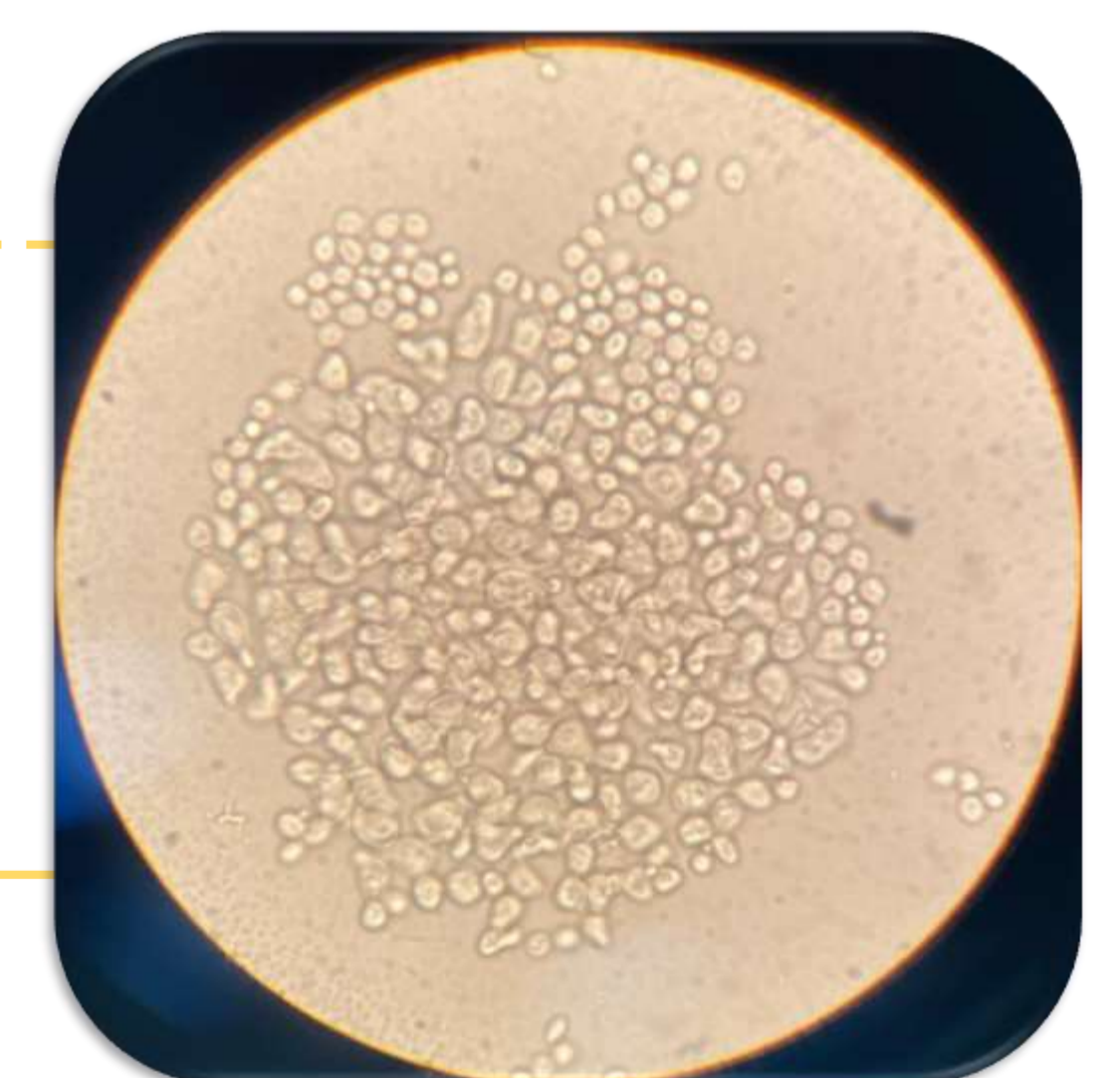
RESULTS



1 All of the selected yeast strains exhibited growth capacity at low pH values and low temperatures.

2

Six of 38 yeast strains exhibited high flocculation.



3 The strains subjected to Helm's assay were confirmed to be flocculent in nature.