

Phase 5. Validation of technologies for obtaining wines using the terroir concept, through controlled fermentation with new yeasts

WP5 Activities

Activity 5.1 - Validation of technologies and products

Activity 5.2 - Protection of industrial property rights for new products and technologies obtained

Activity 5.3 - Dissemination of information

Estimated results

- Technology validation for obtaining new products (yeast biomass and wines)
- Submission of the new identified strains to a recognized strain collection
- Submission of patent application/patents for products and technologies individually and in consortium
- Publications/Participation in fairs, conferences/symposiums/congresses, exhibitions

The main scientific and technical objective of this project was the isolation, characterization and use of autochthonous yeasts to improve the sensory qualities of wine produced with native varieties from the Pietroasa vineyard (Romania).

The main objective of the phase consisted in testing the selected yeasts to obtain yeasts at pilot level and in testing them to obtain wines with outstanding sensory properties, personalized wines, using controlled fermentations, with the final goal to validate the technologies and products.

Results achieved

- Technologies and products based on yeast biomass and wines obtained using these yeasts have been validated;
- Wine inoculated with commercial yeast, at the industrial level, differs significantly from the other control samples, as well as the aroma profiles of wines inoculated with various yeast strains and their mixtures;
- The results of the studies carried out by the Hungarian partners for the wines obtained by the Romanian partners indicate that the most dominant aroma is generated by the yeast *Saccharomyces cerevisiae* and this cannot be significantly modified by the other two added strains. The yeast *Lachancea thermotolerans* has a less dominant influence on the aroma, while the least influence is for the yeast *Torulaspora delbrueckii*;
- 2 strains of yeasts: *S. cerevisiae* 35 and *Lachancea thermotolerans* 33 were deposited at the international depository authority National Collection of Agricultural and Industrial Microorganisms (NCAIM) and received NCAIM number;
- An abstract with the title "Wine samples from the Fetească regală variety" was published within the National Student Symposium "BIOTECHNOLOGIES - PRESENT AND FUTURE", XIIth Edition, organized by the Faculty of Biotechnologies from USAMVB;
- The project was presented as a poster at the Eureka Global Innovation Summit (GIS2024) event organized on June 13-14, 2024 in Istanbul by the Turkish presidency of the EUREKA organization;
- Patent applications submitted to OSIM:
 - Obtaining active biomass of wine yeast *Lachancea thermotolerans*;
 - Obtaining active biomass of wine yeast *S. cerevisiae*.

