

## Summary

In recent years, research into new, alternative probiotics has been gaining increasing interest. This trend includes research on probiotic yeasts, which for many years have been overshadowed by better-known probiotic bacteria. This paper concerns the isolation, characterization, and application of probiotic yeasts derived from spontaneously fermented foods and beverages. This research responds to the growing scientific and industrial interest in non-bacterial probiotics and the need to expand beyond the well-known probiotic yeast species *Saccharomyces cerevisiae* var. *bouardii*. Through a series of complementary studies-from literature synthesis, through experimental isolation, functional characterization, and application trials-it has been demonstrated that both conventional and unconventional yeast species represent promising cultures for use as probiotics and functional food ingredients. Through experimental work, yeast isolates from various ecological niches (spontaneous fermentation wines, spoiled foods) were obtained and genetically identified. Subsequently, their probiotic and technological properties were assessed. Finally, the selected isolates, belonging to the genera *Saccharomyces*, *Hanseniaspora*, *Metschnikowia*, and *Pichia*, were used as starter cultures for the production of a traditional Polish fermented beverage -underbeer. The obtained underbeer strains were subjected to a series of tests to assess their properties, and the technological potential of the yeasts was determined. The analyses confirmed the full range of hypotheses proposed in this study. Six strains were selected as the most promising probiotic yeasts in the course of the study: *Hanseniaspora uvarum* (15\_Hans\_uvarum and

16\_Hans\_uvarum), *Metschnikowia pulcherrima* (110\_Metsch\_pulcherrima and 113\_Metsch\_pulcherrima), *Pichia kudriavzevii* (101\_Pich\_kudriavzevii) and *Saccharomyces cerevisiae* (37\_Sacch\_cerevisiae).

**Key words:** yeast, probiotic yeasts, underbeer, probiotics, functional food