

BREWING POTENTIAL AND PROBIOTIC ACTIVITY OF WILD YEASTS HANSENIASPORA UVARUM PIT001, CANDIDA INTERMEDIA ORQ001 AND PICHIA KLUYVERI LAR001

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RESUMO

Wild yeasts are used by beer industry in mixed fermentations, in which they contribute with unique aromas and fermentative characteristics, having also other interesting properties, such as probiotic and antagonist activity against pathogens. Thus, the objective of this work was to identify and characterize yeasts isolated from flowers, fruits and leaves, regarding their probiotic potential and contribution in beer production. Yeasts isolation was performed using sterile swabs rubbed on the surface of different fruits and their respective leaves and flowers, and subsequently incubating them in antibiotic-added culture medium. Wild isolates were identified using PCR and sequencing of the rRNA ITS1/ITS4 region. Tolerance to pH, temperature, salinity, acetic and lactic acid was monitored, as well as the survival capacity in gastrointestinal tract (GTI) conditions simulated in vitro. Antimicrobial activity was assessed against various food pathogens and ability to ferment beer wort was analyzed through yeasts inoculation in malt extract solution. Protease production and resistance to alpha-acids were also evaluated. Wild isolates *Pichia kluyveri* LAR001, *Hanseniaspora uvarum* PIT001 and *Candida intermedia* ORQ001 were considered the most promising, since beers produced by them had a pH similar to the control and sensory notes desirable for mixed fermentation beers. All wild isolates showed resistance to alpha-acids, adaptability to pH 8.0 and absence of extracellular proteolytic activity, however only *P. kluyveri* resisted pH 2.5 for growth, *H. uvarum* did not sustain its growth at 37 °C and only *C. intermedia* tolerated salinity levels above 5% NaCl. These yeasts demonstrated antimicrobial activity against the food pathogens tested and it was possible to observe tolerance to gastric juice simulated condition; however, there was a decrease in live cells concentration when submitted to pancreatic juice condition. We conclude that yeasts isolated demonstrated brewing and probiotic potential, requiring further studies to confirm these isolates as probiotic starter cultures.

PALAVRAS-CHAVE: Beer, Mixed fermentation, Probiotic, Wild yeast

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