

INFLUENCE OF LACTOSE FERMENTATIVE YEAST ON FERMENTED SERUM AND MALT DRINK PARAMETERSNataliy Chepel¹, Olena Grek¹, Olena Krasulia¹

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One of the least unprofitable and non-waste technologies of lactosérum processing is manufacture of fermentation drinks with the addition of rye fermented malt. For conduct of fermentation process it is reasonable to use the special microorganisms able to utilize lactose with formation of alcohol and carbon dioxide.

Influence of different lactose fermentative yeast races (*Zygosaccharomyces lactis* 868-K, *Saccharomyces lactis* 95, *Kluyveromyces lactis* 469) on physical and chemical parameters of fermented wort in comparison with the standard ones was investigated. The results prove the highest fermentative activity of *Zygosaccharomyces lactis* 868-K yeast, in particular: ethyl alcohol content - 1.0 v. %, sodium hydroxide solution acidity with concentration of 1 mol/dm³ per 100 cm³ of drink - 3,5 cm³, drink stability at 20 °C - 5 days. Physical and chemical parameters of wort fermented with *Saccharomyces lactis* 95 and *Kluyveromyces lactis* 469 yeast are considerable lower than the standard ones which points at rather low activity of ferments catalyzing lactose hydrolysis.

For investigation of influence lactose fermentative yeast on organoleptic parameters, there were identified waste products of fermentation in distillate of fermented serum and malt drink by gas and chromatographic method by actual techniques of definition of C.C. spirits developed by scientists of Basic Scientific Research Laboratory of National University of Food Technologies After the contents of waste fermentation products, wort fermented with *Zygosaccharomyces lactis* 868-K yeast, which is characterized by low concentrations of n-propane (1,84 mg/dm³), isobutane (29.30 mg/dm³), acetaldehyde (27 mg/dm³) and high concentrations of 2-methyl-1-butanol (58.59 mg/dm³) and 3-methyl-1-butanol (211.11 mg/dm³) has higher parameters. In wort fermented by *Saccharomyces lactis* 95 and *Kluyveromyces lactis* 469 yeast, high concentrations both of n-propane (157.53 mg/dm³ and 33.29 mg/dm³, respectively), isobutane (261,80 mg/dm³ and 32.27 mg/dm³, respectively), and acetaldehyde (229.04 mg/dm³ and 172,48 mg/dm³, respectively) are accumulated. Moreover, such trial samples have low concentrations of 2-methyl-1-butanol (20.78 mg/dm³ and 173.52 mg/dm³, respectively) and 3-methyl-1-butanol (6.24 mg/dm³ and 17.56 mg/dm³), which influence on formation of a general fermented drink aroma.

As it can be seen from experimental research, biosynthesis of fermentation waste products can be defined as the result of regulatory functions of a yeast cell. Presence of *Zygosaccharomyces lactis* 868-K yeast strain in nutrient medium positively influences on producer's metabolism by stimulating biosynthesis or transformation of nutrient medium aromatic substances.

KEY WORDS: fermentation waste products, serum and malt drink.