

## PROBIOTIC FERMENTATION OF MIXED FRUIT AND VEGETABLE JUICES

**Aruzhan Otegenova<sup>1\*</sup>, Aulia Putri Srie Wardani<sup>1</sup>, Waminee Niramit<sup>1</sup>, Balázs P. Szabó<sup>1</sup>, Judit Krisch<sup>1</sup>**

<sup>1</sup> Department of Food Engineering, Faculty of Engineering, University of Szeged, Szeged, Hungary

\*corresponding author: aruzhan.otegenova@alumni.nu.edu.kz

In the rise of a growing trend towards vegan origin product consumption and certain diet limitations in consumers, fruit- or vegetable-based non-dairy probiotic beverages become quite an appealing substitute. By nature, vegetables and fruits are rich in dietary fibers, carbohydrates, vitamins, minerals, phytochemicals and polyphenols, thus can be a potential substrate or prebiotic in the production of probiotic beverages and fulfill probiotic carrier function to benefit human gut health. In addition, previous studies show that antioxidant activity of plant – based food products enhances post fermentation due to their liberation or new formation of antioxidant compounds. Such qualities allow the fermented fruit and vegetable juice to have a promising future and attract beverage industries' attention. The aim of this study is to evaluate the probiotic cell count viability in 72h fermented with *Levilactobacillus brevis* juice mix made of beetroot, apple and carrot, and conclude on the most suitable environment for probiotic shelf life. Besides, the sensory evaluation conducted in parallel to understand the consumer behavior towards a new product. As a last parameter, antioxidant activity is measured to draw a conclusion on whether fermentation enhances the antioxidant compound number in juice. According to results obtained, mix of fruit and vegetable juice seems to be a good environment for the probiotic strain due to viable cells found after 4 months of storage. However, due to its novelty, the main issues remain as the customer acceptance of sensory properties, which hinders the entrance of non-dairy probiotics entering the market on full basis.