

BIOLOGICAL ACTIVITY OF TEA-CHOKEBERRY AND CHOKEBERRY FERMENTED BEVERAGES

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Materials: Tea-chokeberry and chokeberry beverages obtained during fermentation carried by tea fungus.

Methods: Changes in content of antioxidants were determined by HPLC-DAD-MS. The antioxidant activity of the compounds was determined using HPLC postcolumn derivatization with ABTS. To specified the inhibition of amylolytic enzymes, spectrophotometric methods were used.

Results

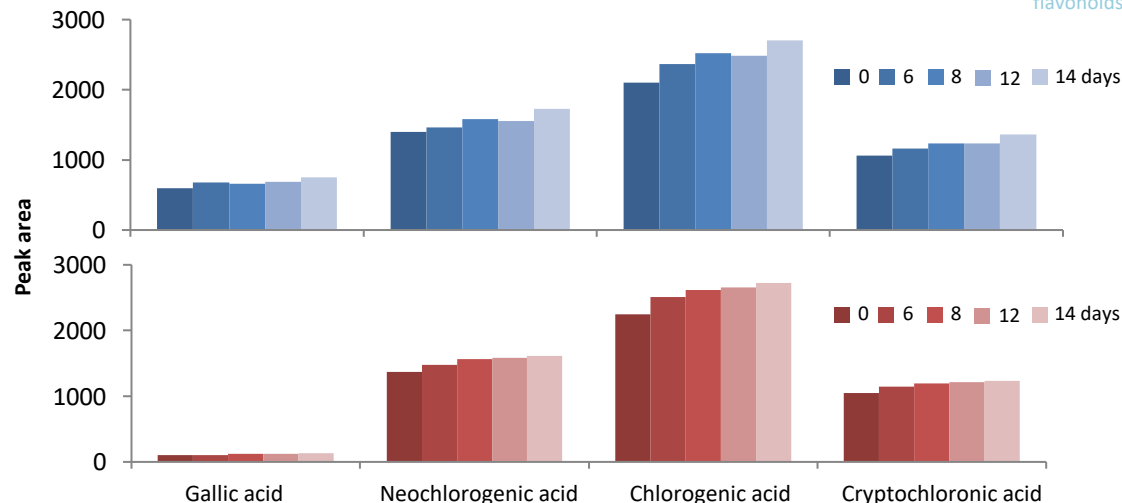


Fig. 1 The change in polyphenol profile (exemplified by phenolic acids) in tea-chokeberry and chokeberry kombucha at 0,6,8,12 and 14 days of fermentation.

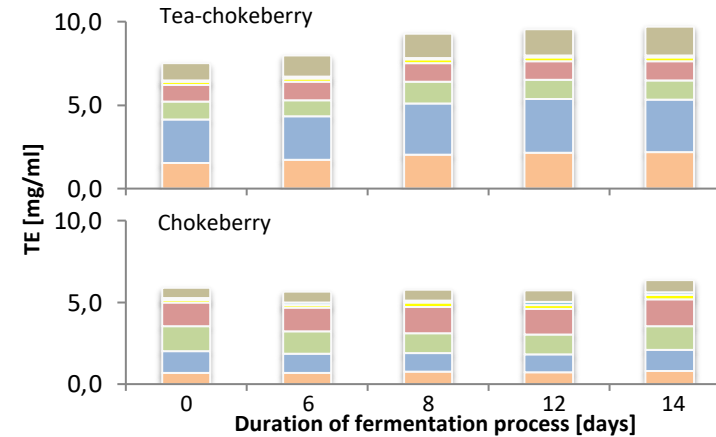


Fig. 2 The antioxidant activity of tea-chokeberry and chokeberry fermented beverages (phenolic acids, flavan-3-ols, flavonols, anthocyanins, procyanidins, flavonoids, other)

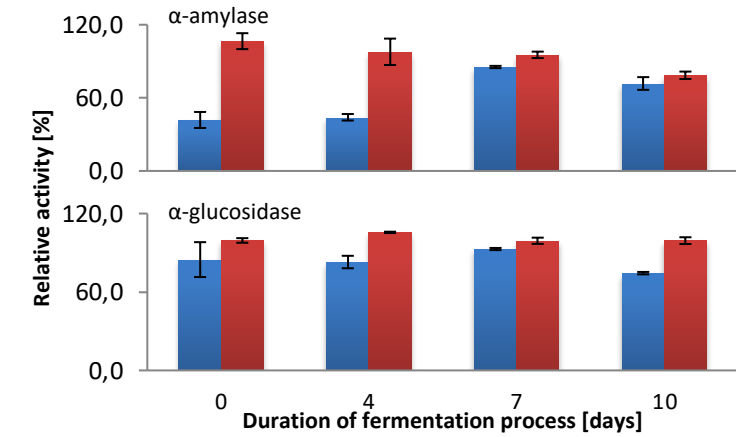


Fig. 3 The inhibition degree of α -amylase and α -glucosidase activities in tea-chokeberry and chokeberry fermented beverages

The results of the research demonstrated that the composition of polyphenols in both tea-chokeberry and chokeberry kombuchas changes with increasing fermentation time (Fig. 1). Tea-chokeberry fermented beverage has a richer composition of compounds capable of neutralizing free radicals and reactive oxygen species, confirmed by a higher Trolox equivalent index compared to fermented chokeberry beverage (Fig. 2). Tea-chokeberry and chokeberry kombuchas have the ability to inhibit α -amylase and α -glucosidase enzymes, which decreases with the duration of the fermentation process (Fig. 3).