## Effect of Alcoholic and Acetous Fermentations on Phenolic Acids of Kei-Apple (Dovyalis Caffra L.) Fruit

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**Abstract :** Kei-apple is a tree found on the African continent. Limited information exists on the effect of alcoholic and acetous fermentation on the phytochemicals. The fruit has increased L-malic, ascorbic, and phenolic acids. Juice was co-inoculated with Schizosaccharomyces pombe and Saccharomyces cerevisiae to induce alcoholic fermentation and acetous fermentation using acetic acid bacteria. Saccharomyces cerevisiae+S. pombe wines and vinegars had highest pH. Total acidity, soluble solids and L-malic acid decreased during alcoholic and acetous fermentation with highest in S. cerevisiae wines and vinegars. Volatile acidity was highest in S. pombe vinegars but not different from S. cerevisiae and S. cerevisiae+S. pombe. Gallic acid was highest in S. pombe wines and vinegars. Syringic acid was highest in S. cerevisiae wines and vinegars were highest in caffeic, p-coumaric and protocatechuic acids. Schizosaccharomyces pombe vinegars were highest in caffeic and p-coumaric acids. Ferulic and sinapic acids were highest in S. pombe and S. cerevisiae wines, respectively. Chlorogenic acid was most abundant in both wines and vinegars. Saccharomyces cerevisiae+S. pombe and S. cerevisiae had a positive effect on most phenolic acids. Saccharomyces cerevisiae +acetic acid bacteria had an increased effect on syringic and chlorogenic acids. Schizosaccharomyces pombe+acetic acid bacteria resulted in an increase in gallic, caffeic and p-coumaric acids. Acetic acid bacteria had minimal performance with respect to volatile acidity production in comparison to commercial vinegars. Acetic acid bacteria selection should therefore be reconsidered and the decrease of certain phenolic acids during acetous fermentation needs to be investigated.

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