THE IMPACT OF PACKAGING TYPE ON SOME PHYSICAL-CHEMICAL AND SENSORY CHARACTERISTICS OF APPLE BRANDY

Zoran Petrović[1], Tamara Mutabdžija[1], Tatjana Botić[2], Pero Dugić[3], Nebojša Vasiljević[1], Marina Jokić[1]

*[1]University of East Sarajevo, Faculty of Technology Zvornik, Karakaj 34A, Zvornik, Republic of Srpska, Bosnia and Herzegovina, zoran.petrovic@tfzv.ues.rs.ba**
[2]University of Banja Luka, Faculty of Technology,Vojvode Stepe Stepanovića 73, Banja Luka, Republic of Srpska, Bosnia and Herzegovina;
[3]Higher Medical School of Health Doboj, Vojvode Sinđelića 45, Doboj, Republic of Srpska, Bosnia and Herzegovina

Abstract

The Republic of Srpska has favorable climatic conditions and quality soil for growing various types of fruit (plums, apples, pears, quinces, etc.), with a large portion of this fruit being used to produce high-quality domestic brandies. The production of brandies in rural households is carried out in distillation devices (pot stills) with a capacity of up to 100 L. For the aging or maturation of brandies, storage, and commercial sales, different types of packaging made of wood, glass, and polymer materials are used.

This work examined the physical-chemical and sensory characteristics of apple brandy made from the "Jonagold" variety after aging and maturation in glass and polyethylene terephthalate (PET) packaging for two years. These characteristics were determined using methods prescribed by the relevant regulations, and for determining the content of volatile substances (aldehydes, higher alcohols, ketones, ethyl acetate), the GC-FID method was employed. Sensory evaluation was conducted using an appropriate questionnaire (acceptability test) by 10 individuals who consumefruit brandies.

The test results showed that the alcohol content in the tested brandy samples decreased, with the loss of alcohol, sugar content, total volatile substances, and total acids being higher in the brandy sample from the PET bottle. The content of total esters and total aldehydes was higher in the brandy sample from the glass bottle. Sensory tests showed that the brandy in both glass and PET bottles was clear and had an appropriate color (no cloudiness), and the taste and aroma of the brandy in the glass bottle were slightly more acceptable than those in the PET bottle. The analysis of the results indicated that a high-quality brandy was obtained from the mentioned apple variety using older distillation equipment, and for aging and storing it, glass packaging is preferable.

Keywords: *apple brandy, physical-chemical characteristics, sensory characteristics, GC-FID, glass and PET bottles*