

## PRIMJENA KONCENTRATA PROTEINA TIKVE U PROIZVODNJI JOGURTA NA BAZI OVSA

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**Sažetak.** Ovas i novi proizvodi na bazi ovsa, kao dio zdrave ishrane, postaju sve popularniji na tržištu funkcionalne hrane. Shodno tome, koristeći zdravstvene prednosti probiotske kulture sa prebiotskim beta-glukanom ovsa, cilj rada je bio da se pokuša razviti receptura za proizvodnju senzorski i reološki prihvatljivog fermentisanog nemliječnog proizvoda na bazi ovsa, uz primjenu koncentrata proteina tikve (P), ekstrakta arome vanilije (V) i blendirane višnje (CH). Suspenzija ovsenih mekinja je fermentisana probiotskom starter kulturom koja je sadržavala *Bifidobacterium (nu-trish® BB-12®)*. Baza ovsa je termički obrađena 10 minuta na 80°C i ohlađena na 37°C za proces inokulacije. Uz kontrolni uzorak (C) koji je bez dodataka, proizvedeni su i uzorci sa kombinacijama: 1%P, 1%P+1%V, 1%P+3%CH, 1%P+5%CH i 1%P+7%CH. Pri praćenju pada pH vrijednosti fermentacija je trajala 6 sati. Tokom 1., 7. i 14. dana skladištenja, svim uzorcima mjerena je aktivna kiselost, viskozitet i sinereza dok je senzorsku procjenu (ukus, konzistenciju, boju, miris i izgled površine) ocijenila panel grupa od 3 člana. 1. dana čuvanja proveden je i test prihvatljivosti i poželjnosti verbalnom hedonističkom skalom od strane 32 ispitanika koji prethodno nisu testirani, a koji su ocjenama od 1 do 9 izrazili opšti utisak o istraživanim proizvodima. Rezultati su pokazali da su izmjerene vrijednosti pH nakon završene fermentacije nešto niže za uzorke sa dodatkom višnje (4,36-4,47) u poređenju sa preostala 3 uzorka (4,69-4,76), te se takav trend zadržao i tokom skladištenja. Takođe, tokom cjelokupnog vremena skladištenja, sinereza je bila statistički značajno viša, a viskozitet niži ( $p < 0,05$ ) kod uzoraka sa dodatkom višnje (1%P+3%CH, 1%P+5%CH i 1%P+7%CH) u odnosu na ostale uzorke (C, P i CH). Najbolje senzorske ocjene, svih proizvedenih uzoraka jogurta, bile su nakon 1. dana ocjenjivanja, s tim da je grupa uzoraka sa višnjom dobila nešto niže ocjene zbog lošije ocijenjenih parametara ukusa i konzistencije. 14. dana skladištenja uzorci C, P i CH su zadržali maksimalne ocjene, dok su kod uzoraka sa višnjom uočene pahuljaste nakupine na površini, što je ukazivalo na znake kvarenja i ovi uzorci su eliminisani iz dalje analize.

**Ključne riječi:** jogurt na bazi ovsa, receptura, fermentacija, trajnost

## APPLICATION OF PUMPKIN PROTEIN CONCENTRATE IN THE PRODUCTION OF YOGURT BASED ON OATS

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**Abstract.** Oats and new oat-based products, as part of a healthy diet, are becoming increasingly popular in the market of functional food. Accordingly, using the health benefits of probiotic culture with oat prebiotic beta-glucan, the aim of the paper was to try to develop a recipe for the production of a sensory and rheologically acceptable fermented non-dairy product based on oats, with the use of pumpkin protein concentrate (P), vanilla flavor extract (V) and blended cherries (CH). The oat bran suspension was fermented with a probiotic starter culture containing *Bifidobacterium (nu-trish® BB-12®)*. The oat base was heat treated for 10 minutes at 80°C and cooled to 37°C for the inoculation process. In addition to the control sample (C) without supplements, samples were also produced with the following combinations: 1%P, 1%P+1%V, 1%P+3%CH, 1%P+5%CH and 1%P+ 7%CH. When monitoring the drop in pH value, the fermentation lasted 6 hours. During the 1<sup>st</sup>, 7<sup>th</sup> and 14<sup>th</sup> days of storage, active acidity, viscosity and syneresis were measured for all samples, while the sensory evaluation (taste, consistency, color, smell and appearance of the surface) was evaluated by a panel group of 3 members. On the 1<sup>st</sup> storage day, a test of acceptability and desirability was conducted using a verbal hedonic scale by 32 subjects who had not been tested previously, and who expressed a general impression of the researched products with grades from 1 to 9. The results showed that the measured pH values after fermentation were slightly lower for the samples with the addition of cherries (4.36-4.47) compared to the remaining 3 samples (4.69-4.76), and this trend was maintained during storage. Also, during the entire storage time, syneresis was statistically significantly higher, and viscosity was lower ( $p<0.05$ ) in samples with added cherry (1%P+3%CH, 1%P+5%CH and 1%P+ 7%CH) compared to other samples (C, P and CH). The best sensory evaluations, of all produced yogurt samples, were after the 1<sup>st</sup> day of evaluation, with the fact that the group of samples with cherry received slightly lower evaluations due to the poorly evaluated parameters of taste and consistency. On the 14<sup>th</sup> storage day, samples C, P and CH maintained their maximum scores, while samples with cherry showed fluffy accumulations on the surface, which indicated signs of spoilage and these samples were eliminated from further analysis.

**Key words:** oat-based yogurt, recipe, fermentation, durability