KUALITAS DAN DAYA SIMPAN SUSU PASTEURISASI DENGAN PENAMBAHAN EKSTRAK SERBUK KAYU SECANG (*Caesalpinia sappan* L.)

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INTISARI

Penelitian ini bertujuan untuk mengetahui pengaruh penambahan ekstrak serbuk kayu secang (*Caesalpinia sappan* L.) terhadap kualitas dan daya simpan susu pasteurisasi. Susu dengan penambahan 0, 2, 4, 6, dan 8% ekstrak serbuk kayu secang dipasteurisasi dengan suhu 63°C selama 30 menit. Penyimpanan di lakukan pada suhu 8°C selama 0, 3, 7, dan 14 hari. Hasil yang diamati adalah aktivitas antioksidan, kualitas mikrobiologi (TPC dan aktivitas antibakteri), kualitas fisko-kimia (kadar protein,viskositas, pH, dan warna) dan organoleptik. Analisis data dilakukan dengan Rancangan Acak Lengkap (RAL) pola faktorial dan dilanjutkan uji Duncan new multiple Range Test (DMRT). Data hasil pengujian organoleptik dianalisis non parametrik, uji hedonik Kruskal-Wallis. Hasil pengujian senyawa aktif pada ekstrak serbuk kayu secang mengandung fenol 44,606 mg/100g, flavonoid 1,84 mg/100mg, tanin 46,552 mg/100g, antioksidan 85,67%, dan pH 5,75. Hasil penelitian menunjukan susu pasteurisasi dengan penambahan ekstrak serbuk kayu secang berpengaruh ($P<0,05$) terhadap kualitas fisiko-kimia (viskositas, kadar protein, dan warna), dan umur simpan berpengaruh ($P<0,05$) terhadap kualitas fisiko-kimia (viskositas, kadar protein, dan warna) . Penambahan ekstrak secang menurunkan jumlah bakteri ($P<0,05$) dan penyimpanan meningkatkan total bakteri ($P<0,05$). Penambahan ekstrak kayu secang berpengaruh ($P<0,05$) terhadap aktivitas antibakteri lima jenis bakteri patogen *Escherichia coli* EPEC, *Shigella flexneri, Salmonella thypimurium, Staphylococcus aureus,* dan *Listeria monocitogenes* dengan zona hambat rata-rata ±20 mm. Ekstrak serbuk kayu secang meningkatkan aktivitas antioksidan ($P<0,05$) susu pasteurisasi selama penyimpanan. Penambahan ekstrak serbuk kayu secang berpengaruh ($P<0,05$) pada penilaian warna, aroma dan rasa tapi tidak berpengaruh ($P>0,05$) pada konsitensi dan daya terima susu pasteurisasi. Kesimpulan susu pasteurisasi dengan penambahan ekstrak serbuk kayu secang dapat meningkatkan kualitas fisko-kimia, kualitas mikrobiologi, aktivitas antioksidan, dan daya terima. Kesimpulan penelitian ini yaitu susu pasteurisasi dengan penambahan ekstrak kayu secang sampai 8% dengan lama penyimpanan 14 hari meningkatkan kualitas fisiko-kimia, kualitas mikrobiologi, aktivitas antioksidan ,dan daya terima.

Kata kunci: Susu pasteurisasi, ekstrak kayu secang, daya simpan, kualitas mikrobiologi, kualitas fisko-kimia, antioksidan

THE QUALITY AND SHELF-LIFE OF PASTEURIZED MILK WITH THE ADDITION OF EXTRACT SAPPAN WOOD (*Caesalpinia sappan L*.)

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ABSTRACT

The aim of this study was to determine effects of the addition level of extract sappan wood (*Caesalpinia sappan L*.) 0, 2, 4, 6, and 8% on the quality and shelf-life of pasteurized milk. The milk was added with 0, 2, 4, 6, and 8% of extract sappan wood pasteurized at 63°C for 30 minutes. The storage was conducted at 8°C for 0, 3, 7, and 14 days. The data were observed the activities of antioxidants, microbiological quality (TPC and antibacterial activities), physiochemical quality (protein content, viscosity, pH, and color), and organoleptic. The data were analyzed using Completely Randomized Design (CRD) factorial and it was later continued by Duncan's new Multiple Range Test (DMRT). The data from organoleptic testing were analyzed non-parametrically, using Kruskal-Wallis hedonic testing. The data showed the extract sappan wood contain fenol 44.606 mg/ 100g, flavonoid 1,84 mg/100mg, tannins 46.552 mg/ 100g, antioxidants 85,67%, and pH 5,75. The results indicated that the physicochemical quality (protein, viscosity, pH, and color) of pasteurized milk added with extract sappan wood has an effect of ($P<0.05$) during the storage.The added extract sappan wood was able to decrease total bacteria ($P<0.05$) and storage increased the total bacteria ($P<0.05$). The antibacterial activity of pasteurized milk added with extract sappan wood to five patogen bacterial species, there are *Escherichia coli* EPEC, *Shigella flexneri*, *Salmonella thypimurium*, *Staphylococcus aureus*, and *Listeria monocitogenes* have effects of ($P<0.05$) with an average inhibition zone of ±20 mm. Extract sappan wood increased antioxidant activity ($P<0.05$) in pasteurized milk during storage.The organoleptic testing on pasteurized milk added by extract sappan wood has and effect to the colour, flavour, and teste ($P<0.05$), and has no effect to the consistency and acceptability ($P>0.05$). The results conclus was pasteurized milk with the addition of extract sappan wood was able to improve physicochemical quality, microbiological quality, antioxidant activity, and acceptability. Conclusion this research namely pasteurized milk with the addition of extracts of caesalpinia sappan wood up to 8% with long storage 14 days improved the quality of fisiko-chemical, microbiological quality, antioxidant activity, and acceptance.

Key words: Pasteurized milk, extract sappan wood, shelf-life, microbiological quality, physicochemical quality, antioxidants