

RINGKASAN

Penelitian ini bertujuan untuk mengetahui pengaruh penambahan bagian buah gowok (*Syzygium polycephalum*), yaitu kulit, daging, dan buah utuh tanpa biji, terhadap nilai total asam dan pH yoghurt sinbiotik. Gowok dipilih karena mengandung berbagai senyawa bioaktif, seperti fenolik, flavonoid, tanin, dan antosianin yang berpotensi mempengaruhi aktivitas bakteri asam laktat selama fermentasi. Aktivitas bakteri asam laktat (BAL) seperti *Lactobacillus bulgaricus* dan *Streptococcus thermophilus* yang berperan penting dalam pembentukan asam laktat yang menentukan tingkat keasaman yoghurt, sehingga berpengaruh terhadap nilai total asam dan pH produk. Yoghurt sinbiotik merupakan produk pangan fungsional yang mengkombinasikan probiotik dan prebiotik sehingga memiliki manfaat bagi kesehatan saluran pencernaan.

Penelitian dilakukan menggunakan metode eksperimen dengan Rancangan Acak Lengkap (RAL) yang terdiri atas empat perlakuan dan lima ulangan. Perlakuan yang digunakan meliputi yoghurt tanpa penambahan gowok (P0), yoghurt dengan penambahan tepung kulit gowok 0,5% (P1), yoghurt dengan penambahan tepung daging gowok 0,5% (P2), dan yoghurt dengan penambahan tepung buah gowok utuh tanpa biji 0,5% (P3). Variabel yang diamati meliputi nilai total asam dan pH yoghurt sinbiotik. Data yang diperoleh dianalisis menggunakan analisis ragam (ANOVA) dan dilanjutkan dengan uji Duncan Multiple Range Test (DMRT) apabila menunjukkan pengaruh nyata.

Hasil penelitian menunjukkan bahwa penambahan tepung gowok 0,5% berpengaruh nyata ($P < 0,05$) terhadap nilai total asam dan berpengaruh sangat nyata ($P < 0,01$) terhadap nilai pH yoghurt sinbiotik. Nilai total asam tertinggi diperoleh pada perlakuan P0 sebesar 1,100%, sedangkan nilai total asam terendah diperoleh pada perlakuan P2 sebesar 1,062%. Nilai pH terendah terdapat pada perlakuan P0 sebesar 4,19 dan nilai pH tertinggi terdapat pada perlakuan P2 sebesar 4,25. Berdasarkan hasil penelitian dapat disimpulkan bahwa penambahan tepung gowok mempengaruhi karakteristik kimia yoghurt sinbiotik, khususnya nilai total asam dan pH. Perlakuan P2 menghasilkan nilai total asam terendah dan nilai pH tertinggi, sedangkan perlakuan P3 dinilai lebih potensial untuk diaplikasikan karena memanfaatkan hampir seluruh bagian buah gowok tanpa biji serta menghasilkan karakteristik yoghurt yang masih memenuhi standar mutu yoghurt.

Kata kunci: Yoghurt Sinbiotik, Bakteri Asam Laktat, Gowok (*Syzygium polycephalum*), Total Asam, pH.

SUMMARY

*This study aimed to determine the effect of adding different parts of gowok fruit (*Syzygium polycephalum*), namely peel, flesh, and whole fruit without seeds, on the total acidity and pH of synbiotic yogurt. Gowok was selected because it contains various bioactive compounds, including phenolics, flavonoids, tannins, and anthocyanins, which may influence the activity of lactic acid bacteria during fermentation. Lactic acid bacteria (LAB), such as *Lactobacillus bulgaricus* and *Streptococcus thermophilus*, play an important role in producing lactic acid, which determines the acidity level of yogurt and consequently affects its total acidity and pH. Synbiotic yogurt is a functional food product that combines probiotics and prebiotics and provides beneficial effects on digestive health.*

The study was conducted using an experimental method with a Completely Randomized Design (CRD) consisting of four treatments and five replications. The treatments included yogurt without gowok addition (P0), yogurt supplemented with 0.5% gowok peel powder (P1), yogurt supplemented with 0.5% gowok flesh powder (P2), and yogurt supplemented with 0.5% whole gowok fruit powder without seeds (P3). The observed variables were total acidity and pH of synbiotic yogurt. The data were analyzed using Analysis of Variance (ANOVA), followed by Duncan's Multiple Range Test (DMRT) when significant differences were detected.

The results showed that the addition of 0.5% gowok powder significantly affected total acidity ($P < 0.05$) and highly significantly affected pH ($P < 0.01$) of synbiotic yogurt. The highest total acidity was observed in P0 (1.100%), while the lowest total acidity was found in P2 (1.062%). The lowest pH value was recorded in P0 (4.19), whereas the highest pH value was obtained in P2 (4.25). It can be concluded that the addition of gowok powder influenced the chemical characteristics of synbiotic yogurt, particularly total acidity and pH. Treatment P2 produced the lowest total acidity and the highest pH value, while treatment P3 was considered the most promising treatment because it utilized nearly all parts of the gowok fruit without seeds and produced yogurt characteristics that still met yogurt quality standards.

Keywords: Synbiotic Yogurt, Lactic Acid Bacteria, Gowok (*Syzygium polycephalum*), Total Titratable Acidity, pH.