

RINGKASAN

Sosis nabati merupakan salah satu variasi sosis dengan bahan utama protein nabati seperti jamur tiram. Sosis nabati muncul dari permasalahan sosis daging yang mengandung kolesterol yang tinggi serta serat yang rendah. Sosis nabati juga mengalami pengembangan bahan baku pembuatan untuk meningkatkan nilai kimia, fisik, dan sensorisnya. Salah satu pengembangannya adalah dengan mensubstitusi bahan pengisi berupa tepung ubi jalar madu terhadap tepung tapioka dan melakukan penambahan isolat protein kedelai. Penelitian ini bertujuan untuk 1) mengetahui pengaruh substitusi tepung ubi jalar madu terhadap karakteristik sosis nabati. 2) mengetahui pengaruh penambahan isolat protein kedelai terhadap karakteristik sosis nabati. 3) mengetahui kombinasi perlakuan terbaik antara proporsi substitusi tepung ubi jalar madu dan penambahan isolat protein kedelai dalam meningkatkan karakteristik sosis nabati.

Penelitian ini dilaksanakan dengan metode Rancangan Acak Kelompok (RAK) di Laboratorium Pengolahan serta Laboratorium Pangan dan Gizi, Fakultas Pertanian, Universitas Jenderal Soedirman, Purwokerto. Penelitian ini dilaksanakan dari bulan September 2024 hingga Juni 2025. Penelitian pendahuluan dilakukan untuk menentukan formula bahan serta cara pembuatan sosis nabati untuk kemudian dipilih dalam penelitian utama. Pada penelitian utama formulasi sosis nabati dibuat dengan perlakuan substitusi tepung ubi jalar madu terhadap tepung tapioka dalam tiga rasio yakni 1:3 (K1); 1:1 (K2); dan 3:1 (K3) serta penambahan isolat protein kedelai sebesar 5% (P1), 10% (P2), 15% (P3) untuk selanjutnya dianalisis sifat fisik, kimia, serta sensorisnya. Pada proses analisis fisikokimia, sebanyak 9 sampel dilakukan analisis duplo dengan pengulangan sebanyak tiga kali. Sementara itu, analisis sensoris dilakukan uji hedonik dan uji mutu hedonik oleh 20 orang panelis terlatih. Kemudian, dilakukan analisis statistik menggunakan uji ANOVA, ANOVA *Welch*, dan *Kruskal Wallis* dengan tingkat kepercayaan 95% untuk karakteristik kimia dan fisik serta uji *Friedman* untuk karakteristik sensoris.

Hasil penelitian menunjukkan bahwa perlakuan substitusi tepung ubi jalar madu terhadap tepung tapioka berpengaruh nyata terhadap kadar beta karoten dan tekstur *adhesiveness*. Sementara itu, penambahan isolat protein kedelai berpengaruh nyata terhadap kadar protein. Adapun interaksi kedua perlakuan memberikan pengaruh yang nyata terhadap kadar air, tekstur *stringiness*, serta atribut sensoris pada uji mutu hedonik (warna, rasa, dan tekstur) maupun uji hedonik (warna, rasa, tekstur, dan kesukaan keseluruhan). Hasil uji indeks efektivitas menunjukkan perlakuan terbaik adalah K2P3 dengan kadar air 53,74%; kadar abu 1,36%; kadar lemak 2,69%; kadar protein 4,76%; aktivitas antioksidan 32,83%; kadar beta karoten 34,74 $\mu\text{g}/100\text{g}$, dan serat pangan total 2,03%. Sementara itu, nilai fisik tekstur kombinasi perlakuan ini di antaranya *hardness* 107,29 N; *gumminess* 25,72 N; *chewiness* 19,89 N; *springiness* 0,76; *stringiness* 0,69 mm; *cohesiveness* 0,24; dan *adhesiveness* 11,27 Nmm. Sosis nabati K2P3 berwarna coklat kekuningan, rasa sedikit gurih, aroma sedikit khas sosis, tekstur sedikit kompak dan kenyal serta kesukaan keseluruhan netral.

SUMMARY

Vegetarian sausage is a variation of sausage made from plant based protein as the main ingredient such as oyster mushroom. Vegetarian sausage comes from the issues of meat sausages that contain high cholesterol and low fiber. The development comes from the changes of the raw materials in production to enhance their chemical, physical, and sensory values. One of the development is by substituting the filler of tapioca flour with honey sweet potato flour and adding the isolated soy protein. This research aims to 1) determine the effect of honey sweet potato flour substitution on the characteristics of vegetarian sausage. 2) determine the effect of adding the isolated soy protein on the characteristics of vegetarian sausage. 3) find the best treatment combination between the proportion of honey sweet potato flour substitution and the addition of the isolated soy protein in improving the characteristics of vegetarian sausage.

This research was conducted by using a Randomized Block Design method in the Laboratory of Processing and Laboratory of Food and Nutrition, Faculty of Agriculture, Jenderal Soedirman University, Purwokerto from September 2024 to June 2025. Preliminary research was conducted to determine the formula for ingredients and methods for making vegetarian sausage, which would then be selected for the main research. In the main research, the formulation of vegetable sausage were made with the treatment of substituting honey sweet potato flour for tapioca flour in three ratios which are 1:3 (K1); 1:1 (K2); 3:1 (K3) and the addition of isolated soy protein at 5% (P1), 10% (P2), 15% (P3) to be analyzed for chemical, physical, and sensory properties. In the physicochemical analysis process, the 9 samples was duplicated analysis with three repetition. Meanwhile, sensory analysis was conducted using hedonic test and hedonic quality test by 20 trained panelists. Subsequently, statistical analysis was carried out using ANOVA, Welch ANOVA, and Kruskal Wallis tests at a confidence level of 95% for chemical and physical properties also the Friedman test was used for sensory properties.

The research results show that treatment of substituting sweet potato flour with tapioca flour has a significant effect on the beta carotene content and the texture of adhesiveness. Meanwhile, the addition of isolated soy protein significantly affects the protein content. Furthermore, the interaction of both treatment has a significant effect on moisture content, texture of stringiness, as well as sensory attributes in the hedonic quality test (color, taste, and texture) and the hedonic test (color, taste, texture, and overall preference). The effectiveness index results show that the best treatment is K3P3 with a moisture content of 53,74%; ash content of 1,36%; fat content of 2.69%; protein content of 4,76%; antioxidant activity of 32,83%; beta-carotene content of 34,74 µg/100g, and total dietary fiber of 2,03%. Meanwhile, the physical texture values of this combination treatment include hardness 107,29 N; gumminess 25,72 N; chewiness 19,89 N; springiness 0,76; stringiness 0,69 mm; cohesiveness 0,24; and adhesiveness 11,27 Nmm. K2P3 sausage also has brownish-yellow color, has a slightly savory taste, a slightly distinctive sausage aroma, a slightly compact and chewy texture, and an overall neutral preference.