

## RINGKASAN

*Cookies* merupakan produk *bakery* yang umumnya menggunakan tepung terigu sebagai bahan utama, namun perlu dikembangkan menjadi pangan yang lebih sehat. Penelitian ini mengkaji pemanfaatan tepung sorgum terfermentasi sebagai alternatif bebas gluten, serta penambahan *rosemary* untuk meningkatkan aktivitas antioksidan. Tujuan utama penelitian adalah mengevaluasi pengaruh bentuk dan rasio penambahan *rosemary* terhadap karakteristik sensorik, fisikokimia, dan aktivitas antioksidan *cookies* berbasis sorgum terfermentasi.

Rancangan percobaan yang digunakan adalah Rancangan Acak Kelompok (RAK) dengan dasar pengelompokan berdasarkan bentuk dan rasio penambahan *rosemary* dengan empat kali ulangan. Faktor yang diteliti berupa bentuk penambahan *rosemary* (P) dalam bentuk *puree rosemary* (P1) dan filtrat *rosemary* (P2) dan faktor rasio antara air dengan *rosemary* (R) pada rasio 1;2 (R1); 1:5 (R2); dan 1:10 (R3). Dilakukan pengamatan kimia pada bentuk penambahan *rosemary* meliputi total fenolik, total flavonoid, dan aktivitas antioksidan. Pada *cookies* sorgum, dilakukan pengamatan fisik meliputi warna, *baking loss* dan *spread ratio*, serta pengamatan kimia seperti aktivitas antioksidan dan kadar air. Pada variabel sensori diamati warna, aroma, tekstur, rasa dan tingkat kesukaan. Perlakuan terbaik kemudian dibandingkan dengan *cookies* kontrol (C) pada analisis proksimat (kadar air, protein total, lemak, abu dan karbohidrat), serat dan tekstur serta dibandingkan dengan standar SNI 2973:2018.

Hasil penelitian menunjukkan bahwa perlakuan terbaik berdasarkan karakteristik sensori *cookies* adalah filtrat *rosemary* dengan rasio 1:10, yang menghasilkan *cookies* berwarna kuning kecoklatan (3,40), aroma khas *rosemary* (2,60), tekstur remah (3,55), rasa agak *astringent* (3,90) dan disukai panelis (3,85). Perlakuan terbaik memiliki karakteristik fisikokimia diantaranya nilai *lightness* yang cukup terang yaitu 59,10, nilai *redness* relatif rendah yaitu 5,22, nilai *yellowness* yang cukup kuat yaitu 28,08, *baking loss* 9,14%, *spread ratio* 4,62%, aktivitas antioksidan 27,65% dan kadar air 3,17%.

## SUMMARY

*Cookies are bakery products that generally use wheat flour as the main ingredient, but need to be developed into healthier food. This research examines the utilization of fermented sorghum flour as a gluten-free alternative, as well as the addition of rosemary to increase antioxidant activity. The main objective of the study was to evaluate the effect of the form and ratio of rosemary addition on the sensory characteristics, physicochemical, and antioxidant activity of fermented sorghum-based cookies.*

*The experimental design used was a Randomized Group Design (RAK) with the basis of grouping based on the form and ratio of rosemary addition with four replications. The factors studied were the form of rosemary addition (P) in the form of rosemary puree (P1) and rosemary filtrate (P2) and the ratio factor between water and rosemary (R) at a ratio of 1:2 (R1); 1:5 (R2); and 1:10 (R3). Chemical observations were made on the form of rosemary addition including total phenolic, total flavonoid, and antioxidant activity. In sorghum cookies, physical observations were made including color, baking loss and spread ratio, as well as chemical observations such as antioxidant activity and moisture content. In sensory variables, color, aroma, texture, taste and level of liking were observed. The best treatment was then compared with control cookies (C) on proximate analysis (water content, total protein, fat, ash and carbohydrates), fiber and texture and compared with SNI 2973: 2018 standards.*

*The results showed that the best treatment based on the sensory characteristics of cookies was rosemary filtrate with a ratio of 1:10, which produced brownish yellow cookies (3.40), aroma not typical of rosemary (2.60), texture slightly crumbly (3.55), taste slightly astringent (3.90) and somewhat liked by panelists (3.85). The best treatment had physicochemical characteristics including a fairly bright lightness value of 59.10, a relatively low redness value of 5.22, a fairly strong yellowness value of 28.08, baking loss of 9.14%, spread ratio of 4.62%, antioxidant activity of 27.65% and moisture content of 3.17%.*