RINGKASAN

Cookies adalah salah satu produk pangan yang digemari oleh masyarakat dari berbagai kalangan usia. *Cookies* pada umumnya mengandung gluten karena dibuat dari tepung terigu yang berasal dari gandum, sementara terdapat kelompok yang *intolerant* terhadap gluten. Penderita gluten *intolerant* juga cenderung tidak dapat mengkonsumsi kasein dengan baik. Selain itu, dikalangan berbagai usia terdapat pula kelompok yang intoleransi terhadap laktosa. Sehingga, salah satu inovasi yang dapat dilakukan untuk membuat *cookies* bebas gluten, kasein, dan laktosa yaitu mengganti tepung terigu dengan tepung jagung dan tepung almond. *Cookies* jagung-almond yang dihasilkan masih memiliki nilai gizi protein yang rendah sehingga dilakukan suplementasi dengan tepung kacang hijau dan dalam pembuatannya menggunakan 2 jenis lemak yaitu margarin dan VCO (*Virgin Coconut Oil*). Penelitian ini dilakukan dengan tujuan untuk mengetahui : 1) pengaruh suplementasi tepung kacang hijau terhadap kualitas *cookies* jagung-almond; 2) pengaruh jenis lemak terhadap kualitas *cookies* jagung-almond; 3) kombinasi perlakuan yang tepat antara suplementasi tepung kacang hijau dan jenis lemak yang menghasilkan *cookies* berbasis jagung-almond dengan kualitas terbaik.

Rancangan yang digunakan dalam penelitian ini yaitu Rancangan Acak Kelompok (RAK). Faktor yang diteliti meliputi suplementasi tepung kacang hijau (H) dengan taraf 10% (H1), 20% (H2), dan 30% (H3); jenis lemak (L) dengan taraf margarin 100% (L1), margarin 50% :VCO 50% (L2), dan VCO 100% (L3). Berdasarkan faktor tersebut diperoleh 9 kombinasi perlakuan yang diulang sebanyak 3 kali. Variabel yang diamati yaitu variabel fisikokimia yang meliputi : pengukuran nilai kadar air, kadar abu, kadar lemak, kadar gula reduksi, kadar protein terlarut, dan volume pengembangan. Data variabel fisikokimia dianalisis menggunakan uji analisis ragam dengan taraf 5% dan uji lanjut *DMRT (Duncan's Multiple Range Test)* dengan taraf 5%. Perlakuan terbaik dipilih dengan menggunakan uji indeks efektivitas.

Hasil penelitian menunjukkan bahwa suplementasi tepung kacang hijau 10%, 20%, dan 30% meningkatkan kadar air dan menurunkan kadar lemak. Namun, tidak mempengaruhi kadar abu, kadar gula reduksi, kadar protein terlarut dan volume pengembangan. Sedangkan jenis lemak meningkatkan kadar lemak dan kadar protein terlarut, serta menurunkan volume pengembangan. Tetapi, tidak berpengaruh terhadap kadar air, kadar abu, dan kadar gula reduksi. Kombinasi perlakuan terbaik yaitu *cookies* dengan suplementasi kacang hijau sebesar 10% dengan jenis lemak VCO 100%. Karakteristik fisikokimia *cookies* jagung-almond yang dihasilkan dari kombinasi perlakuan terbaik yaitu memiliki nilai kadar protein terlarut sebesar 2,35%, kadar lemak sebesar 28,10%, kadar gula reduksi sebesar 0,21%, kadar air sebesar 2%, kadar abu sebesar 0,27%, dan volume pengembangan sebesar 73,23%.

SUMMARY

Cookies are one of the popular food products among people of various ages. Cookies generally contain gluten because they are made from wheat flour obtained from wheat, while there are groups that are intolerant of gluten. Patients with gluten intolerant also tend not to be able to consume casein properly. Also, among various ages, some groups are intolerant against lactose. So, one of the innovations that can be done to make cookies gluten, casein, and lactose-free is to replace wheat flour with cornflour and almond flour. Corn-almond cookies produced still have a low nutritional value of protein so that supplementation is done with green bean flour and in its making uses two types of fat, namely margarine and VCO (Virgin Coconut Oil). This research aimed to find out: 1) the effect of green bean flour supplementation on the quality of corn-almond cookies; 2) the effect of fat types on the quality of corn-almond cookies; 3) the right treatment combination between supplementation of green bean flour and the type of fat that produces the best quality of corn-almond-based cookies.

The design used in this study was Randomized Group Design (RGD). Factors studied included supplementation of green bean flour (H) with a level of 10% (H1), 20% (H2), and 30% (H3); types of fat (L) with 100% margarine level (L1), 50% margarine: 50% VCO (L2), and 100% VCO (L3). Based on these factors, nine treatment combinations were obtained, which were repeated three times. The observed variables are physicochemical variables, which include: measurement of water content, ash content, fat content, sugar content reduction, dissolved protein content, and development volume. Data on physicochemical variables were analyzed using variance analysis with a level of 5% and further tests of DMRT (Duncan's Multiple Range Test) with a 5% level. The best treatment was chosen by using the effectiveness index test.

The results showed that supplementation of green bean flour 10%, 20%, and 30% increased water content and reduced fat content. However, it does not affect ash content, sugar levels reduction, dissolved protein levels, and development volume. While the type of fat increases fat content and dissolved protein levels, and decreases the development volume. However, it does not affect the water content, ash content, and sugar levels reduction. The best combination of treatments is cookies with mung bean supplementation of 10% with 100% VCO fat. Physicochemical characteristics of corn-almond cookies produced from the best treatments combination are: having a value of dissolved protein content of 2.35%, fat content of 28.10% , sugar content reduction of 0.21%, water content of 2%, ash content of 0.27%, and expansion volume of 73.23%.