

# PENINGKATAN KADAR PROTEIN DAN AKTIVITAS ANTIOKSIDAN PADA *COOKIES* GARUT

## INTISARI

Permintaan tepung terigu sebagai bahan baku *cookies*, roti, dan mie yang terus meningkat mengakibatkan peningkatan impor tepung terigu. Salah satu tepung lokal non gluten yang dapat digunakan untuk mengganti tepung terigu adalah tepung garut. Tepung garut memiliki kandungan protein yang rendah. Oleh karena itu, dilakukan modifikasi *cookies* menggunakan tepung komposit, yaitu pencampuran antara tepung garut dan tepung kedelai untuk meningkatkan kadar protein. Penambahan bubuk jahe juga dilakukan untuk menghilangkan *beany flavor* tepung kedelai, serta meningkatkan aktivitas antioksidan pada *cookies*. Penelitian ini bertujuan mengetahui pengaruh proporsi tepung garut dan tepung kedelai serta penambahan bubuk jahe terhadap sifat fisik, kimia, dan aktivitas antioksidan *cookies* dengan perlakuan terpilih.

Prosedur penelitian meliputi pembuatan *cookies* berbasis tepung garut dan tepung kedelai dengan penambahan bubuk jahe. Rancangan percobaan yang digunakan adalah Rancangan Acak Lengkap (RAL) pola faktorial dengan 2 faktor perlakuan, yaitu faktor 1 proporsi tepung garut dan tepung kedelai (A1= 100% : 0%; A2= 75% : 25%; A3= 50% : 50%). Faktor 2 konsentrasi bubuk jahe (B1= 2%; B2= 3%; B3= 4%). *Cookies* yang dihasilkan dianalisis kadar protein, aktivitas antioksidan, dan uji organoleptik untuk menentukan perlakuan terpilih. *Cookies* dengan perlakuan terpilih kemudian dianalisis sifat fisik (tekstur), kimia (proksimat), dan aktivitas antioksidan.

Hasil penelitian menunjukkan bahwa *cookies* perlakuan terpilih berdasarkan tingkat kesukaan panelis adalah kombinasi perlakuan tepung garut 75% dan tepung kedelai 25% dengan penambahan bubuk jahe sebesar 3%. *Cookies* perlakuan tersebut memiliki tekstur 13,20 mm/g/s; kadar air 3,30% b/b; kadar abu 2,21% b/b; kadar protein 7,80% b/b; kadar lemak 27,59% b/b; kadar karbohidrat 59,09% b/b; aktivitas antioksidan 69,08% RSA.

**Kata kunci:** *cookies*, tepung garut, tepung kedelai, bubuk jahe.

# INCREASED PROTEIN LEVELS AND ANTIOXIDANT ACTIVITY IN ARROWROOT COOKIES

## ABSTRACT

The increasing demand for wheat flour as a raw material for cookies, bread, and noodles has resulted in increasing imports of wheat seeds. One of the non-gluten flours that can be used to replace wheat flour is arrowroot flour. Arrowroot flour has a low protein content. Therefore, cookies are modified using composite flour, that is mixing arrowroot flour and soybean flour to increase the protein content. The addition of ginger powder is also carried out to eliminate the beany flavor of soy flour, as well as increase the antioxidant activity of cookies. This research aims to determine the effect of the proportion of arrowroot flour and soybean flour and the addition of ginger powder on the physical, chemical, and antioxidant activity of cookies with selected treatment.

The research procedure include making cookies based on arrowroot flour and soybean flour with the addition of ginger powder. The experimental design used was a factorial completely randomized design (CRD) with 2 treatment factors. The first factor, the proportion of arrowroot flour and soy flour (A1= 100% : 0%; A2= 75% : 25%; A3= 50% : 50%). The second factor, the concentration of ginger powder (B1= 2%; B2= 3%; B = 4%). The resulting cookies are analyzed for protein content, antioxidant activity, and organoleptic tests to determine the selected treatment. Then, cookies with the selected treatment were analyzed for physical (texture), chemical (proximate), and antioxidant activity.

The results showed that the selected treatment cookies based on the level of preference of the panelists were a combination of treatment of 75% arrowroot flour and 25% soybean flour with the addition of 3% ginger powder. The treatment cookies have a texture of 13,20 mm/g/s; moisture content 3,30% b/b; ash content 2,21% b/b; protein content 7,80% b/b; fat content 27,59% b/b; carbohydrate content of 59,09% b/b; antioxidant activity 69,08% RSA.

**Key words:** cookies, arrowroot flour, soy flour, ginger powder