

RINGKASAN

Tiwul merupakan makanan tradisional Jawa Tengah yang berbahan baku ubi kayu. Namun, seiring berjalannya waktu, konsumsi tiwul semakin berkurang karena dianggap kurang menarik. Dengan demikian pada penelitian ini dilakukan upaya modifikasi tiwul menjadi tiwul instan. Ubi kayu memiliki kandungan protein yang rendah sehingga perlu ditambahkan sumber protein lain seperti kacang koro pedang dan kacang hijau. Penelitian ini bertujuan untuk: (1) mengetahui pengaruh penggunaan tepung ubi kayu hasil modifikasi dengan ragi tape, (2) mengetahui pengaruh substitusi tepung kacang koro pedang atau tepung kacang hijau, (3) menetapkan proporsi tepung ubi kayu modifikasi–tepung kacang–susu skim yang menghasilkan tiwul instan dengan kandungan protein tertinggi, (4) mengetahui ada-tidaknya interaksi dari penggunaan tepung ubi kayu modifikasi, substitusi tepung kacang, serta proporsi tepung ubi kayu modifikasi–tepung kacang–susu skim terhadap kualitas tiwul instan tinggi protein.

Penelitian ini menggunakan Rancangan Acak Kelompok (RAK) dengan tiga faktor. Faktor yang diteliti adalah jenis kacang (K): K1= kacang koro pedang, K2 = kacang hijau; proporsi b/b tepung ubi kayu–tepung kacang–susu skim (P): P1 = 80 : 15 : 5, P2 = 70 : 25 : 5, P3 = 60 : 35 : 5; serta modifikasi tepung ubi kayu (A): A0 = tanpa modifikasi, A1 = modifikasi ragi tape (4%, 6 jam perendaman). Setiap perlakuan diulang sebanyak 3 kali sehingga didapatkan 36 unit percobaan. Variabel yang diamati yaitu sifat fisik dan kimia meliputi koefisien rehidrasi, kadar air, kadar abu, total padatan terlarut dan nilai Formol, terhadap perlakuan terbaik dianalisis kadar protein, kadar lemak, serta kadar karbohidrat *by difference*. Variabel sensori yang diamati meliputi tekstur (kekenyalan), rasa kacang, flavor, dan kesukaan terhadap tiwul instan tanak.

Kombinasi perlakuan terbaik pada penelitian ini adalah K1P3A0 (kacang koro, proporsi tepung ubi kayu : tepung kacang : susu skim 60 : 35 : 5, tepung ubi kayu tanpa modifikasi). Tiwul instan K1P3A0 memiliki kadar protein 9,70% bk (9,10% bb), kadar lemak 1,64% bk (1,54% bb), kadar karbohidrat (*by difference*) 86,98% bk (81,57% bb), kadar air 6,22% bb, kadar abu 1,31% bk (1,23% bb), kadar total padatan terlarut 37,28% bk (34,96% bb), koefisien rehidrasi 3,94, dan nilai Formol 0,033 ml NaOH 0,1N/g bk (0,030 ml NaOH 0,1N/g bb); nilai tekstur (kekenyalan) 2,37 (agak kenyal), rasa kacang 2,71 (agak terasa), flavor 2,61 (agak enak), dan kesukaan 2,57 (agak suka).

SUMMARY

Tiwul is a traditional food from Central Java that made from cassava. But, with the passage of time, the consumption level of tiwul is decreasing because it is considered less attractive. Thus, this research will modify tiwul become instant tiwul. Cassava has a low protein content so that it needs to be added by another protein source such as jack bean and mung bean. This study aimed to: (1) Discover the effect of using yeast modified cassava flour, (2) Discover the effect of jack bean or mung bean substitution, (3) Determine a proportion of cassava flour-bean flour-skimmed milk which produce instant tiwul with highest protein content, (4) Discover the interaction within the use of modified cassava flour, substitution of bean flour, and the proportion of cassava flour-bean flour-skimmed milk on the quality of high protein instant tiwul.

This study used a Randomized Block Design (RBD) with three factors. Factors observed were types of bean (K): K1 = jack bean, K2 = mung bean; the proportion of cassava flour-bean flour-skimmed milk (P;w/w): P1 = 80 : 15 : 5, P2 = 70 : 25 : 5, P3 = 60 : 35 : 5, and the modification of cassava flour (A): A0 = without modification, A1 = yeast modified cassava flour. Every treatment was repeated three times so obtained 36 treatments. The observed variables, namely physical and chemical properties included rehydration coefficient, moisture content, ash content, total dissolved solid, and Formol value. The best unit combination was tested by protein content, fat content, and carbohydrate content (by difference). The sensory variable observed were texture, bean flavor, flavor, and the hedonic value of cooked tiwul.

The best treatment combination in this study was K1P3A0 (jack bean, cassava flour-bean flour-skimmed milk 60 : 35 : 5, cassava flour without modification). Instant tiwul K1P3A0 had 9.70%db (9.10%wb) protein content, 1.64%db (1.54%wb) fat content, 86.98%db (81.57%wb) carbohydrate content (by difference), 6.22%db water content, 1.31%db (1.23%wb) ash content, 37.28%db (34.96%wb) total dissolved solid, 3.94 rehydration coefficient, 0.033 ml NaOH 0,1N/g db (0.030 ml NaOH 0.1N/g wb) Formol value, texture (chewiness) 2.37 (somewhat chewy), bean flavor 2.71 (rather noticeably), flavor 2.61 (rather good), and hedonic value 2.57 (slightly favored).