

## RINGKASAN

Tiwul merupakan makanan tradisional yang berbahan baku ubi kayu. Proses pembuatannya membutuhkan waktu lama dan kandungan gizinya yang rendah membuat tiwul semakin sulit dijumpai. Oleh karena itu, perlu dilakukan upaya modifikasi pembuatan tiwul menjadi tiwul instan dengan nilai gizi lebih baik. Peningkatan zat gizi dilakukan dengan substitusi tepung tinggi protein diantaranya tepung koro pedang. Pada penelitian ini dibuat tiwul instan dengan jenis tepung ubi kayu modifikasi kimiawi dan ubi kayu modifikasi mikrobiawi dengan proporsi berat tepung ubi kayu-tepung koro pedang-tapioka serta penambahan bahan pengental *food grade*.

Penelitian ini bertujuan untuk menentukan: 1) jenis tepung ubi kayu modifikasi (kimiawi atau mikrobiawi) yang sesuai; 2) proporsi berat tepung ubi kayu modifikasi-tepung koro pedang-tapioka yang sesuai; 3) penambahan bahan pengental *food grade* yang sesuai; 4) kombinasi perlakuan terbaik antara jenis dan proporsi tepung ubi kayu modifikasi-tepung koro pedang-tapioka, serta penambahan bahan pengental *food grade* yang menghasilkan tiwul instan dengan sifat kimia dan sensori yang terbaik.

Penelitian ini menggunakan Rancangan Acak Kelompok (RAK). Faktor yang dicoba adalah jenis tepung ubi kayu modifikasi (J) terdiri dari tepung ubi kayu modifikasi kimiawi (J1) dan tepung ubi kayu modifikasi mikrobiawi (J2); proporsi berat tepung ubi kayu: tepung koro pedang: tapioka (P) terdiri dari P1= 75:15:10; P2 = 70:20:10; P3 = 65:25:10 dan penambahan bahan pengental terdiri dari B1= 0,5%; B2= 0,75%; B3=1,0% b/b terhadap total tepung, sehingga diperoleh 36 unit perlakuan yang diulang 2 kali.

Hasil penelitian menunjukkan bahwa perlakuan terbaik adalah tiwul instan J2P2K3 (jenis tepung ubi kayu modifikasi mikrobiawi; proporsi berat tepung ubi kayu-tepung koro pedang-tapioka 70:20:10; dan penambahan bahan pengental 1,0%) mempunyai koefisien rehidrasi 4,04; kadar air sebesar 4,17 %bb; kadar abu 1,16 %bk (1,11 %bb); nilai Formol 0,0243 ml NaOH 0,1 N/g bk (0,0233 ml NaOH 0,1 N/g bb); kadar protein total 6,57 %bk (6,30 %bb); kadar lemak 1,50 %bk (1,44 %bb); kadar karbohidrat *by difference* 90,75 %bk (86,96 %bb), tekstur kenyal (2,75), flavor enak (2,70), tingkat kesukaan disukai (2,60), rasa khas kacang agak terasa (2,85), dan warna kuning kecokelatan (2,85).

## SUMMARY

*Tiwul is a traditional food made from cassava. A process takes a long time and low nutrients that makes tiwul difficult to find. Therefore, it is necessary to modify of tiwul to become instant tiwul which is more easily served. The increasing of nutrients carried by the substitution of cassava flour with jack bean flour. In this research, tiwul instant was made of chemically modified cassava flour (with  $\text{NaHCO}_3$ ) and microbiologically modified cassava flour (fermentation), with the proportion of cassava flour-jack bean flour-a different tapioca's weight as well as the addition of food grade texturizer.*

*This research aimed to determine: 1) The suitable type of modified cassava flour (chemical, microbiological); 2) The suitable weight proportion of cassava flour-jack bean flour-tapioca; 3) The suitable addition of food grade texturizer; 4) The best combination unit between the type of modified cassava flour and proportion of modified cassava flour-jack bean flour-tapioca with an addition of food grade texturizer that produced instant tiwul with the best chemical and good properties.*

*This research used Randomized Block Design (RBD). The factors tested were a type of cassava flour (J) consisted of a chemically modified cassava flour (J1) and microbiologically modified cassava flour (J2); the proportion of modified cassava flour: jack bean flour: tapioca (P) that consisted of P1 = 75:15:10; P2 = 70:20:10; P3 = 65:25:10 and the additions of texturizer that consisted of B1 = 0.5%; B2 = 0.75%; B3 = 1.0% w/w of the total flour, so that it obtained 36 units of treatment that was repeated 2 times.*

*The results showed that the best treatment was an instant tiwul of J2P2K3 (microbiologically modified cassava flour; the proportion of modified cassava flour-jack bean flour-tapioca 70:20:10; and the texturizer addition of 1.0%) had a coefficient of rehydration of 4.04%; water content of 4.17% wb; ash content of 1.16% db (1.11% wb); Formol value of 0.0243 ml of NaOH 0.1 N/g db (0.0233 ml NaOH 0.1 N/g wb); 6.57%db (6.30% wb) of total protein content; fat content of 1.50% db (1.44%wb); carbohydrate by difference 90.75% db (86.96 %wb), texture (2.75), tasty flavor (2.70), the level of preference (2.60), beans flavour was just little bit tasted (2.85) and tanned yellow color (2.85).*