

RINGKASAN

Breakfast cereal merupakan makanan siap saji yang dibuat dengan proses ekstrusi dari sereal seperti jagung, gandum, *oat*, beras dan *barley*. Sorgum merupakan jenis sereal yang belum banyak dimanfaatkan secara optimal. Pembuatan produk *breakfast cereal* berbahan dasar tepung sorgum merupakan upaya diversifikasi olahan pangan. Penambahan tepung koro pedang digunakan untuk meningkatkan nilai gizi produk *breakfast*. Penggunaan tapioka merupakan upaya untuk meningkatkan tekstur *breakfast*. Selain itu penambahan susu bubuk rendah lemak juga bertujuan untuk meningkatkan kandungan protein *breakfast*. Penelitian ini bertujuan untuk : 1) Menentukan proporsi berat bahan tepung komposit yang sesuai; 2) Menentukan persentase penambahan susu bubuk rendah lemak yang sesuai; 3) Menentukan kombinasi yang menghasilkan *breakfast* tepung komposit dengan karakteristik fisik, kimia dan sensori terbaik.

Rancangan percobaan yang digunakan adalah Rancangan Acak Kelompok (RAK). Faktor yang diteliti terdiri atas 2 faktor yaitu proporsi berat tepung komposit (koro-sorgum-tapioka) (P;b/b) (P), terdiri atas 50:50:0 (P0), 45:45:10 (P1), 40:40:20 (P2), 35:35:30 (P3) dan persentase penambahan susu bubuk rendah lemak (M ; % ; b/b terhadap total tepung) (M), terdiri atas: 0% (M0); 2,5% (M1); 5,0% (M2). Diperoleh 12 kombinasi perlakuan dengan 3 kali ulangan sehingga diperoleh 36 unit percobaan. Variabel fisik dan kimia dianalisis dengan uji F apabila hasilnya berbeda nyata dilanjutkan dengan DMRT pada taraf 5%. Data hasil analisis sensori dianalisis dengan uji Friedman, apabila hasilnya berbeda nyata dilanjutkan dengan uji perbandingan ganda pada taraf 5%. Penentuan kombinasi perlakuan terbaik menggunakan uji index efektivitas.

Hasil penelitian menunjukkan bahwa kombinasi perlakuan terbaik berdasarkan metode indeks efektivitas adalah *breakfast* perlakuan P3M2 (tepung koro-tepung sorgum-tapioka 35:35:30, susu bubuk rendah lemak 5,0%). *Breakfast* perlakuan terbaik mempunyai kadar air 2,16%, kadar abu 2,2% bb (2,25% bk), kadar lemak 10,27% bb (10,45% bk), kadar protein total 10,82% bb (11,16% bk), kadar karbohidrat *by difference* 77,72% bb (77,72% bk), warna agak coklat (2,75), tekstur renyah (3,41), flavor enak (2,88), kesukaan disukai (2,95) dan memiliki koefisien rehidrasi 3,07.

SUMMARY

Breakfast cereal is a ready-to-eat baked snack which made by extrusion process. Kind of cereals that commonly used for making breakfast cereal are such as corn, wheat, oats, rice, and barley. Sorghum plant is belong to species which has not been used optimally. Breakfast cereal made from sorghum flour is one of alternative to diversification of processed products. The addition of jack bean flour was used to improve its nutritional value of breakfast products. The use of tapioca starch was an effort to improve the texture of breakfast. The low-fat milk powder was aimed to increase the protein content of breakfast. The purpose of this study were 1) Determine the optimum proportion of the weight of the composite flour; 2) Determine the optimum percentage of low-fat milk powder additions; 3) Determine the treatment combination which produced breakfast from composite flour with the best physical, chemical and sensory characteristics.

The experimental design used was a randomized block design (RDB). Factors studied consisted of 2 factors: the weight proportion of composite flour (jack bean-sorghum-tapioca) (P; w/w) consisted of 50: 50: 0 (P0); 45: 45: 10 (P1); 40: 40: 20 (P2); 35: 35: 30 (P3) and percentage of low-fat milk powder additions (M ; % ; w/w of the total flour) (M) consisted of : 0% (M0);2.5% (M1);5.0%(M2). Those were 12 combination units with three replications thus obtained 36 experimental units. Data of physical and chemical variables were analyzed by F test, if the results were significantly different would be analyzed by DMRT at 5% level. Data of sensory variables were analyzed by Friedman test, if the results were significantly different would be analyzed by multiple comparison test at 5% level. Determination of the best treatment combination used effectiveness index test.

The result showed that the best treatment combination based on the effectiveness index test was P3M2 breakfast product (jack bean flour-sorghum flour-tapioca 35:35:30; low fat-milk powder 5.0%). This product had a water content of 2.16%, ash content of 2.2% wb (2.25% db), total protein content of 10.15% wb (10.49% db), fat content of 10.827% wb (11.16% db), carbohydrates by difference of 77.72% wb (77.72% db), crunchy texture (3.41), slightly brown color (2.75), delicious flavor (2.88), the level of preference of breakfast was "liked"(2.95) and had a rehydration coefficient of 3.07.