

DAFTAR PUSTAKA

- Aburizal, A dan Joko, P. 2023. Tingkat Kesukaan Konsumen terhadap Nugget Ayam yang Disimpan pada Suhu Dingin dengan Lama Penyimpanan yang Berbeda. *Jurnal Maduranch* 8(1): 13-18.
- Agus, D.SS, Kumalaningsih, A. Febrianto Mulyadi. 2013. Studi Stabilitas Pengangkutan Susu Segar pada Suhu Rendah yang Layak Secara Teknis Dan Finansial (Kajian Suhu dan Lama Waktu Pendinginan). *Jurnal Penelitian. Jurusan Teknologi Industri Pertanian Universitas Brawijaya*
- Ahmad, F., Iffan, M., Askur, R. 2016. Pengaruh Jenis Pengemasan dan Lama Penyimpanan Terhadap Mutu Nugget Gembus. *Jurnal Agointek* 10(2).
- Amalia dan Andriani. 2021. Analisis Protein dan Kualitas Organoleptic Nugget Ikan Lemuru (*Sardhella Lemuruu*). *Jurnal Gizi dan Kesehatan* 2(2) : 116-121.
- AOAC, 2005. *Official Methods of Analysis Association of Official Analytical Chemistry, Association of Analytical Chemists, ed 18th.* Maryland (USA): AOAC International. American.
- Arham. 2017. Nilai pH, Aktivitas Antioksidan dan Nilai TbaNugget Dangke dengan Penambahan Tepung Beras Merah dan Lama Penyimpanan Yang Berbeda. Skripsi. Universitas Hasanuddin Makassar.
- Alamsyah. Y. 2007. *Aneka nugget sehat nan lezat.* Agro Media. Jakarta.
- Awal, R. Libriani, dan H. Hafid. 2023. Nilai Gizi Duck Nugget dengan Penambahan Tepung Jagung yang Berbeda. *JIPHO. Vol 5 (2); 99-103.*
- Azhar, M. 2016. Biomolekul Sel Karbohidrat, Protein dan Enzim. *Jurnal Of Chemical Information And Modeling.*
- Badan Penelitian dan Pengembangan Pertanian. 2015. *Kementrian Pertanian. Balai Pengkajian Teknologi Pertanian Jawa Tengah.*
- Basri, S.H. 2017. Pengaruh Pemberian Probiotik Terhadap Susut Masak, Keempukan dan PH Pada Daging Broiler. Skripsi. Universitas Islam Negeri Alauddin, Makassar.

- Creniewicz, M. 2006. Storage Stability of Raw Milk Subjected to Vibration. Polish Journal of National Science. Vol 15: 65 – 70
- Danuarsa. 2006. Analisis Proksimat dan Asam Lemak pada Beberapa Komoditas Kacang-kacangan. Buletin Teknik Pertanian Vol. 11 (1): 1 – 7
- Didah Nur Faridah, D.R. Adawiyah dan E. Pramurti. 2008. Pangan Fungsional dari Umbi Suweg dan Garut: Kajian Daya Hipokolesterolemik dan Indeks Glisemiknya. Laporan Hibah Bersaing. Lembaga Penelitian dan Pengabdian Kepada Masyarakat Institut Pertanian Bogor. Bogor. Hal 66, 77.
- Faizah, N.I. 2020. Pengaruh Lama dan Tempat Penyimpanan yang Berbeda Terhadap Gizi Umbi Jalar (*Ipomoea Batatas*) Var. Manohara. Jurnal Akademika Biologi 9(2) : 8-14
- Fauziah A. 2013. Pengaruh Penggantian Sebagian Tepung Terigu Dengan Tepung Jagung Terhadap Produksi Nugget Daging Ayam.[Skripsi]. Program Studi Ilmu Peternakan. Fakultas Peternakan. Universitas Jambi. (ID).
- Ferdina, M.V., Suranto, M., Ahmad, N. dan Anang, M. 2013. Karakteristik Dangke dari Susu dengan Waktu Inkubasi Berbeda Pasca Perendaman dalam Larutan Laktoferin. Jurnal Aplikasi Teknologi Pangan 2(3) : 155-158.
- Fitria, D. W., Simanjuntak, B. Y., & Sari, A. P. (2021). Pengaruh umur simpan kukis pelangi ikan gaguk (*Arius thalassinus*) terhadap perubahan kadar protein, lemak, kalsium, dan air. Ilmu Gizi Indonesia, 5(1), 27
- Harris, H., & Fadli, M. (2014). Penentuan Umur Simpan (Shelf Life) Pundang Seluang (*Rasbora* sp) yang Dikemas Menggunakan Kemasan Vakum dan Tanpa Vakum. Saintek Perikanan: Indonesian Journal of Fisheries Science and Technology, 9(2), 53–62.
- Hatta, W., Abustam, E dan Misbahuddin. 2021. Soluble Protein Content, Crude Fiber, and Hardness in Dangke Nugget using Red Rice Flour as Filler in Different Steaming Periods. Jurnal IOP

- Ismawati dan Putri, R.D. 2018. Uji Kesukaan dan Kelayakan Usaha Nugget Ikan Lele. *Jurnal ISSN 15 (2) : 1-5.*
- Isyana F, 2012. Studi Tingkat Higiene dan Cemaran Salmonella sp pada Pembuatan Dangke Susu Sapi di Kecamatan Cendana Kabupaten Enrekang. Skripsi. Fakultas Peternakan Universitas Hasanudin Makassar.
- Jayalangkara, 2017. .Kualitas Organoleptik Tablet Telur Pada Suhu Ruang Dengan Lama Penyimpanan Yang Berbeda. Skripsi. Fakultas Peternakan. Universitas Hasanuddin Makassar. Makassar.
- Khatun,M.M., Hossain, M.A., Ali, M.S., Rahman, M.M, Azad, M.A.K., and Hashem M.A. 2022. Formulation of Value Added Chicken Nuggets using Carrot and Ginger as a Source of Dietary Fiber and Natural Antioxidant. *SAARC J. Agric.*, 20(1) : 185-196.
- Komansilan S. 2015. Pengaruh Penggunaan Beberapa Jenis Filler Terhadap Sifat Fisik Chicken Nugget Ayam Petelur Afkir. *Jurnal zootek 35(1) : 106-116.*
- Kusumaningrum, M., K. 2013. Pengaruh Berbagai Filler (Bahan Pengisi) Terhadap Kadar Air, Rendemen dan Sifat Organoleptik (Warna) Chicken Nugget. *Animal Agriculture Journal 2 (1) : 370-376.*
- Latifah, N. H. 2010. Pemilihan Jenis Plastik dan Pembuatan Desain Kemasan untuk Keripik Tette Madura. Skripsi. Bangkalan: Teknologi Industri Pertanian Fakultas Pertanian Universitas Trunojoyo Madura.
- Lawrie, R.A. 2003. Meat science. The 6th Terjemahan. A.Praksi dan A.Yudha. Universitas Indonesia. Jakarta.
- Malaka,R., Maruddin F., Baco S., Ridwan M., Hakim W., Irwansyah, IL. Maria, Alimuddin A., and Dwyana DZ. 2021.Determination of the expiration time of Dangke ripening cheese through physico-chemical and microbiological analysis. *IOP Conf.* 788.
- Masgaba. 2021. Dangke: Kuliner Khas Masyarakat Enrekang. *Jurnal walasuji 12(1) : 61-75.*

- Nataliani, M.M., Khemasili, K., Ika, F. 2018. Pengaruh Penyimpanan dan Pemanasan Terhadap Stabilitas Fisik dan Aktivitas Antioksidan Larutan Pewarna Alami Daging Buah Naga (*Hylocereus costaricensis*). Jurnal tumbuhan dan obat Indonesia 11(1) : 1-10.
- Nurlaila, S., Agustini, D.M., Puuryanto, J. 2017. Uji Organoleptik Terhadap Berbagai Bahan Dasar Nugget. Jurnal Maduranch 2 (2) : 67-72.
- Ofrianti, Y. dan Jamila, W. 2012. Pengaruh Variasi Konsentrasi Tepung Kedelai sebagai Bahan Pengikat Terhadap Kadar Air dan Mutu Organoleptik Nugget Ikan Gabus (*Ophiocephalus Sriatus*). Jurnal. Poltekkes Bengkulu.
- Oktari, Y.D., Lestari, R.B., Purwayanti, S. 2017. Kajian Pembuatan Nugget Ayam dengan Substitusi Umbi Keribang Terhadap Tepung Terigu. Universitas Tanjungpura.
- Prayoga, G. dan Fraksinasi. 2013. Uji Aktivitas Antioksidan dengan Metode DPPH dan Identifikasi Golongan Senyawa Kimia dari Ekstrak Teraktif Daun Sambang Darah (*Excoecaria cochinchinensis* Lour). Fakultas Farmasi Program Studi Sarjana Ekstensi Universitas Indonesia.
- Preilly, M.J.T. 2016. Pengaruh Lama Penyimpanan terhadap Kandungan Serat Kasar Tepung Biji Lamun (*Enhalus acoroides*) serta Implikasinya Bagi Pembelajaran Masyarakat di Pulau Osi Kabupaten Seram Bagian Barat. Jurnal biologi skl (5(2)).
- Prihantoro, S. 2003. Pengembangan Produk Nugget Berbasis Sayuran dengan Bahan Pengikat Tepung Beras sebagai Pangan Fungsional. Skripsi IPB. Bogor.
- Punia, S. & Sandhu, K. S. 2016. Physicochemical And Antioxidant Properties of Defferent Milling Fractions Of Indian Wheat Cultivars. International Journal of Pharma and Bio Sciences, 7(1) : 61 – 66.
- Rezki, A., Subari Y., Sukainah A. 2017. Analisis Sifat Fisikokimia Nugget Rajungan (*Portunuspelagicus*) dengan Berbagai Jenis Tepung Sebagai Bahan Pengisi. Jurnal Pendidikan Teknologi Pertanian vol 3 : 148-255.

- Risnajati, D. 2010. Pengaruh Lama Penyimpanan dalam Lemari Es terhadap Ph, Daya Ikat Air, dan Susut Masak Karkas Broiler yang dikemas Plastic Polythylen. *Jurnal Ilmiah Ilmu-Ilmu Peternakan* Vol XIII (6).
- Rosa, S., Anggriani Y.L., Jiyanto. 2022. Pengaruh Penambahan Tepung Susu Sebagai Bahan Pengikat Terhadap Susut Masak dan Nilai Organoleptik Nugget Ayam. *Journal of Animal Center* 4(1) : 52-59.
- Sahilatua, F.O., Suter, K., Wiadnyani, S. 2019. Pengaruh Panen terhadap Karakteristik Tepung Jagung Putih (*Zea mays var. ceratina*).
- Saleh, E., Kuntoro, E., Purnamasari., dan Zain. 2012. *Teknologi Hasil Ternak*. Suska Press, Pekanbaru.
- Sari, A. N. 2016. Berbagai Tanaman Rempah sebagai Sumber Antioksidan Alami. *Journal of Islamic Science and Technology* 2(2) : 203–212.
- Suarni dan Firmansyah I.U.. 2009. Beras Jagung: Prosesing dan Kandungan Nutrisi sebagai Bahan Pangan Pokok. *Prosiding Seminar dan Lokakarya Nasional Jagung*, Makassar. Pusat Penelitian dan Pengembangan Tanaman Pangan, Bogor.
- Suarni dan Taufiq, M. 2019. Prospek Pemanfaatan Jagung Pulut untuk Bahan Diversifikasi Pangan. *Balai Penelitian Tanaman Serelia*.
- Suarni. 2009. Potensi Tepung Jagung dan Sorgum sebagai Substitusi Terigu dalam Produk Olahan. *Jurnal Iptek Tanaman Pangan* 4 (2).
- Suarni. 2013. Pengembangan Pangan Tradisional Berbasis Jagung Mendukung Diversifikasi Pangan. *IPTEK Tanaman Pangan*. Pusat Penelitian dan Pengembangan Tanaman Pangan 8(1):40-48.
- Sugiato., Toana, N., Nova, R., Haerani., Marhaeni dan sarjuni, S. 2018. Penambahan Beberapa Sayuran pada Nugget Ayam. *Jurnal ISBN*.
- Sulistiana E. 2020. Uji Organoleptik Nugget Ayam dengan Penambahan Tepung Wortel (*Daucus carota L*). *Skripsi*. Universitas Islam Negeri Alauddin Makassar.
- Sulmiyati, dan Saidah, N. 2018. Karakteristik Dangke Susu Kerbau dengan Penambahan Crude Papain Kering. *Jurnal Agritech* 38(3) : 345-352.

- Sumonsiri N., and Sheryl AB. 2014. Food Processing: Principles and Applications. Fruits and Vegetables-Processing Technologies and Application. Second Edition. John Wiley & Sons, Ltd. P 363- 38.
- Taus, A.L., Tahuk, P.K., Kia, K. 2022. Pengaruh Penggunaan Bahan Pengikat yang Berbeda Terhadap Daya Ikat Air, Kadar Air dan Kandungan Serat Kasar Nugget Ayam. *Journal of Tropical Animal Science and Technology* 4(1) : 74-81.
- Tristantini, D., Ismawati, A., Pradana, B.T., Gabriel, J. dan Jonathan. 2016. Pengujian Aktivitas Antioksidan Menggunakan Metode DPPH pada Daun Tanjung (*Mimusops elengi* L). ISSN 1692-4393.
- Usmiati, S., dan Priyanti, A. 2012. Sifat Fisikokimia dan Palatabilitas Bakso Daging Kerbau. Lokakarya Nasional Usaha Ternak Kerbau Mendukung Program Kecukupan Daging Sapi, Bogor.
- Utami, D. P. 2010. Pengaruh Penambahan Ekstrak Buah Nanas (*Ananas comosus* L. Merr) dan Waktu Pemasakan yang Berbeda Terhadap Kualitas Daging Itik Afkir. Skripsi. Universitas Sebelas Maret Surakarta, 1–36.
- Wahidah., Rosyidi, D., Lilik, E.R dan Purwadi. 2019. Pengaruh Jenis dan Proporsi Penggunaan Tepung Jagung terhadap Daya Ikat Air dan Kualitas Organoleptic dari Nugget Ayam Kampung. *Journal Ilmu dan Teknologi hasil ternak* 14 (1).
- Wellyalina, W., Azima, F dan Aisman, A. 2013. Pengaruh Perbandingan Tetelan Merah Tuna dan Tepung Maizena Terhadap Mutu Nugget. *Jurnal Aplikasi Teknologi Pangan* 2(1) : 9–17.
- Wijayanti, D.A., Hintono, A., Pramono, Y.B. 2013. Kadar Protein dan Keempukan Nugget Ayam dengan Berbagai Level Substitusi Hati Ayam Broiler. *Journal Animal Agriculture* 2(1) : 295-300.
- Winarno, F.G. 2002. Kimia Pangan dan Gizi. Jakarta : PT. Gramedia Pustaka Utama.
- Winarno, F.G. 2007. Kimia Pangan dan Gizi. Gramedia Pustaka Utama. Jakarta.
- Winarno. F.G. 1984. Kimia Pangan dan Gizi. Penerbit PT Gramedia Pustaka Utama. Jakarta. Hal 27-33.

- Winarsi 2007. Antioksidan Alami dan Radikal Bebas. Kanisius. Yogyakarta.
- Wulandari, E., Suryaningsih, L., Pratama, A., Putra, D.,S, dan Runtini,N. 2016.Karakteristik Fisik, Kimia dan Nilai Kesukaan Nugget Ayam dengan Penambahan Pasta Tomat. Jurnal. 16 (2).
- Wulansari, P. D.2016. Pengaruh penggunaan tepung jagung (*Zea Mays L.*) sebagai bahan komposit tepung terigu terhadap kualitas choux pastry kering. Skripsi. Universitas Negeri Semarang.

LAMPIRAN

Lampiran 1. Analisis ragam dan uji lanjut aktivitas antioksidan nugget dangke substitusi tepung terigu dengan tepung jagung

Standar Deviasi

faktor A	faktor B	Mean	Std. Deviation	N
A1	B1	50.9333	.75222	3
	B2	47.2333	.22301	3
	B3	47.7467	.30665	3
	Total	48.6378	1.78632	9
A2	B1	58.5367	.55194	3
	B2	57.0667	5.43042	3
	B3	57.0133	.45797	3
	Total	57.5389	2.83928	9
A3	B1	41.3867	.46918	3
	B2	39.9233	.88319	3
	B3	42.3000	.18028	3
	Total	41.2033	1.15593	9
Total	B1	50.2856	7.46034	9
	B2	48.0744	7.94247	9
	B3	49.0200	6.44876	9
	Total	49.1267	7.08401	27

Tests of Between-Subjects Effects

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	1241.270 ^a	8	155.159	43.987	.000
Intercept	65162.593	1	65162.593	1.847E4	.000
A	1204.053	2	602.027	170.674	.000
B	22.154	2	11.077	3.140	.068
A * B	15.063	4	3.766	1.068	.401
Error	63.492	18	3.527		
Total	66467.355	27			
Corrected Total	1304.762	26			

a. R Squared = .951 (Adjusted R Squared = .930)

antioksidan
LSD

(I) faktor A	(J) faktor A	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
A1	A2	-8.9011*	.88536	.000	-10.7612	-7.0410
	A3	7.4344 [^]	.88536	.000	5.5744	9.2945
A2	A1	8.9011*	.88536	.000	7.0410	10.7612
	A3	16.3356 [^]	.88536	.000	14.4755	18.1956
A3	A1	-7.4344*	.88536	.000	-9.2945	-5.5744
	A2	-16.3356 [^]	.88536	.000	-18.1956	-14.4755

Based on observed means.

The error term is Mean Square(Error) = 3.527.

*. The mean difference is significant at the .05 level.

Lampiran 2. Analisis ragam dan uji lanjut susut masak nugget dangke substitusi tepung terigu dengan tepung jagung

Standar Deviasi

tepung	Lama penyimpanan	Mean	Std. Deviation	N
A1	B1	9.9700	.06083	3
	B2	9.4667	.05774	3
	B3	10.1000	.36056	3
	Total	9.8456	.34377	9
A2	B1	4.9667	.05774	3
	B2	5.0333	.05774	3
	B3	5.4667	.05774	3
	Total	5.1556	.24037	9
A3	B1	4.3000	.17321	3
	B2	5.0333	.05774	3
	B3	4.9333	.11547	3
	Total	4.7556	.36094	9
Total	B1	6.4122	2.68563	9
	B2	6.5111	2.21723	9
	B3	6.8333	2.46830	9
	Total	6.5856	2.37489	27

Dependent Variable: susut masak

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	146.255 ^a	8	18.282	849.442	.000
Intercept	1170.978	1	1170.978	5.441E4	.000
A	144.193	2	72.096	3.350E3	.000
B	.873	2	.436	20.277	.000
A * B	1.190	4	.297	13.819	.000
Error	.387	18	.022		
Total	1317.620	27			
Corrected Total	146.642	26			

susut masak
LSD

(I) Level tepung jagung	(J) Level tepung jagung	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
A1	A2	4.6900 [*]	.06916	.000	4.5447	4.8353
	A3	5.0900 [*]	.06916	.000	4.9447	5.2353
A2	A1	-4.6900 [*]	.06916	.000	-4.8353	-4.5447
	A3	.4000 [*]	.06916	.000	.2547	.5453
A3	A1	-5.0900 [*]	.06916	.000	-5.2353	-4.9447
	A2	-.4000 [*]	.06916	.000	-.5453	-.2547

Based on observed means.

The error term is Mean Square(Error) = .022.

*. The mean difference is significant at the .05 level.

susut masak
LSD

(I) Lama penyimp anan	(J) Lama penyimp anan	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
B1	B2	-.0989	.06916	.170	-.2442	.0464
	B3	-.4211 [*]	.06916	.000	-.5664	-.2758
B2	B1	.0989	.06916	.170	-.0464	.2442
	B3	-.3222 [*]	.06916	.000	-.4675	-.1769
B3	B1	.4211 [*]	.06916	.000	.2758	.5664
	B2	.3222 [*]	.06916	.000	.1769	.4675

Based on observed means.

The error term is Mean Square(Error) = .022.

Lampiran 3. Analisis ragam dan uji lanjut daya putus nugget dangke substitusi tepung terigu dengan tepung jagung

Standar Deviasi

tepung	Lama penyimpanan	Mean	Std. Deviation	N
A1	B1	.2033	.00577	3
	B2	.3033	.00577	3
	B3	.3800	.02646	3
	Total	.2956	.07796	9
A2	B1	.2133	.00577	3
	B2	.3367	.00577	3
	B3	.4000	.01000	3
	Total	.3167	.08246	9
A3	B1	.2067	.00577	3
	B2	.3133	.01155	3
	B3	.3667	.01528	3
	Total	.2956	.07126	9
Total	B1	.2078	.00667	9
	B2	.3178	.01641	9
	B3	.3822	.02167	9
	Total	.3026	.07502	27

Dependent Variable: Daya Putus Nugget

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	.144 ^a	8	.018	121.206	.000
Intercept	2.472	1	2.472	1.669E4	.000
A	.003	2	.001	9.025	.002
B	.140	2	.070	472.675	.000
A * B	.001	4	.000	1.563	.227
Error	.003	18	.000		
Total	2.618	27			
Corrected Total	.146	26			

a. R Squared = .982 (Adjusted R Squared = .974)

Daya Putus Nugget
LSD

(I) tepung	(J) I tepung	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
A1	A2	-.0211 [*]	.00574	.002	-.0332	-.0091
	A3	.0000	.00574	1.000	-.0121	.0121
A2	A1	.0211 [*]	.00574	.002	.0091	.0332
	A3	.0211 [*]	.00574	.002	.0091	.0332
A3	A1	.0000	.00574	1.000	-.0121	.0121
	A2	-.0211 [*]	.00574	.002	-.0332	-.0091

Based on observed means.
The error term is Mean Square(Error) = .000.

Daya Putus Nugget
LSD

(I) Lama penyimp anan	(J) Lama penyimp anan	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
B1	B2	-.1100 [*]	.00574	.000	-.1221	-.0979
	B3	-.1744 [*]	.00574	.000	-.1865	-.1624
B2	B1	.1100 [*]	.00574	.000	.0979	.1221
	B3	-.0644 [*]	.00574	.000	-.0765	-.0524
B3	B1	.1744 [*]	.00574	.000	.1624	.1865
	B2	.0644 [*]	.00574	.000	.0524	.0765

Based on observed means.
The error term is Mean Square(Error) = .000.

Lampiran 4. Analisis ragam dan uji lanjut kadar air nugget dangke substitusi tepung terigu dengan tepung jagung

Standar Deviasi

tepung	Lama penyimpanan	Mean	Std. Deviation	N
A1	B1	53.2233	.10263	3
	B2	53.3933	.21079	3
	B3	50.5567	.53079	3
	Total	52.3911	1.40802	9
A2	B1	49.2967	.59349	3
	B2	47.7633	.22811	3
	B3	45.8567	.15044	3
	Total	47.6389	1.52782	9
A3	B1	51.0267	.05508	3
	B2	47.5533	.09238	3
	B3	44.0467	.09074	3
	Total	47.5422	3.02326	9
Total	B1	51.1822	1.73092	9
	B2	49.5700	2.87351	9
	B3	46.8200	2.92343	9
	Total	49.1907	3.07577	27

Dependent Variable:kadar air

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	244.402 ^a	8	30.550	350.973	.000
Intercept	65332.682	1	65332.682	7.506E5	.000
A	138.314	2	69.157	794.502	.000
B	87.572	2	43.786	503.032	.000
A * B	18.516	4	4.629	53.179	.000
Error	1.567	18	.087		
Total	65578.651	27			

kadar air
LSD

(I) tepung	(J) tepung	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
A1	A2	4.7522*	.13908	.000	4.4600	5.0444
	A3	4.8489 [~]	.13908	.000	4.5567	5.1411
A2	A1	-4.7522*	.13908	.000	-5.0444	-4.4600
	A3	.0967	.13908	.496	-.1955	.3889
A3	A1	-4.8489*	.13908	.000	-5.1411	-4.5567
	A2	-.0967	.13908	.496	-.3889	.1955

Based on observed means.

The error term is Mean Square(Error) = .087.

*. The mean difference is significant at the .05 level.

kadar air
LSD

(I) Lama penyimpanan	(J) Lama penyimpanan	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
B1	B2	1.6122*	.13908	.000	1.3200	1.9044
	B3	4.3622 [~]	.13908	.000	4.0700	4.6544
B2	B1	-1.6122*	.13908	.000	-1.9044	-1.3200
	B3	2.7500 [~]	.13908	.000	2.4578	3.0422
B3	B1	-4.3622*	.13908	.000	-4.6544	-4.0700
	B2	-2.7500 [~]	.13908	.000	-3.0422	-2.4578

Based on observed means.

The error term is Mean Square(Error) = .087.

Lampiran 5. Analisis ragam dan uji lanjut kadar protein nugget dangke substitusi tepung terigu dengan tepung jagung

Standar Deviasi

tepung	Lama penyimpanan	Mean	Std. Deviation	N
A1	B1	11.7567	.23798	3
	B2	9.4333	.00577	3
	B3	9.3433	.38423	3
	Total	10.1778	1.20617	9
A2	B1	12.3000	.16462	3
	B2	11.8933	.10693	3
	B3	10.7767	.06807	3
	Total	11.6567	.69094	9
A3	B1	10.7833	.10408	3
	B2	10.1500	.13000	3
	B3	9.7367	.20648	3
	Total	10.2233	.47542	9
Total	B1	11.6133	.68301	9
	B2	10.4922	1.09893	9
	B3	9.9522	.67828	9
	Total	10.6859	1.07412	27

Dependent Variable:kadar protein

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	29.361 ^a	8	3.670	103.927	.000
Intercept	3083.103	1	3083.103	8.730E4	.000
A	12.731	2	6.365	180.249	.000
B	12.923	2	6.462	182.973	.000
A * B	3.707	4	.927	26.244	.000
Error	.636	18	.035		
Total	3113.100	27			

kadar protein
LSD

(I)I tepung	(J) tepung	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
A1	A2	-1.4789*	.08859	.000	-1.6650	-1.2928
	A3	-.0456	.08859	.613	-.2317	.1406
A2	A1	1.4789*	.08859	.000	1.2928	1.6650
	A3	1.4333 [~]	.08859	.000	1.2472	1.6194
A3	A1	.0456	.08859	.613	-.1406	.2317
	A2	-1.4333 [~]	.08859	.000	-1.6194	-1.2472

Based on observed means.

The error term is Mean Square(Error) = .035.

*. The mean difference is significant at the .05 level.

kadar protein
LSD

(I) Lama penyimp anan	(J) Lama penyimp anan	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
B1	B2	1.1211*	.08859	.000	.9350	1.3072
	B3	1.6611 [~]	.08859	.000	1.4750	1.8472
B2	B1	-1.1211*	.08859	.000	-1.3072	-.9350
	B3	.5400 [~]	.08859	.000	.3539	.7261
B3	B1	-1.6611*	.08859	.000	-1.8472	-1.4750
	B2	-.5400 [~]	.08859	.000	-.7261	-.3539

Lampiran 6. Analisis ragam dan uji lanjut kadar serat nugget dangke substitusi tepung terigu dengan tepung jagung

Standar Deviasi

tepung	Lama penyimpanan	Mean	Std. Deviation	N
A1	B1	.2267	.00577	3
	B2	.2733	.00577	3
	B3	.2567	.00577	3
	Total	.2522	.02108	9
A2	B1	.2600	.01000	3
	B2	.2167	.00577	3
	B3	.3467	.00577	3
	Total	.2744	.05769	9
A3	B1	.2900	.01000	3
	B2	.3667	.00577	3
	B3	.3267	.00577	3
	Total	.3278	.03383	9
Total	B1	.2589	.02848	9
	B2	.2856	.06579	9
	B3	.3100	.04123	9
	Total	.2848	.05056	27

Dependent Variable:kadar serat

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	.066 ^a	8	.008	170.327	.000
Intercept	2.190	1	2.190	4.549E4	.000
A	.027	2	.014	281.846	.000
B	.012	2	.006	122.154	.000
A * B	.027	4	.007	138.654	.000
Error	.001	18	4.815E-5		
Total	2.257	27			
Corrected Total	.066	26			

kadar serat
LSD

(I) Level tepung jagung	(J) Level tepung jagung	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
A1	A2	-.0222 [*]	.00327	.000	-.0291	-.0154
	A3	-.0756 ⁻	.00327	.000	-.0824	-.0687
A2	A1	.0222 [*]	.00327	.000	.0154	.0291
	A3	-.0533 ⁻	.00327	.000	-.0602	-.0465
A3	A1	.0756 [*]	.00327	.000	.0687	.0824
	A2	.0533 ⁻	.00327	.000	.0465	.0602

Based on observed means.

The error term is Mean Square(Error) = 4.81E-005.

*. The mean difference is significant at the .05 level.

kadar serat
LSD

(I) Lama penyimp anan	(J) Lama penyimp anan	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
B1	B2	-.0267 [*]	.00327	.000	-.0335	-.0198
	B3	-.0511 [*]	.00327	.000	-.0580	-.0442
B2	B1	.0267 [*]	.00327	.000	.0198	.0335
	B3	-.0244 ⁻	.00327	.000	-.0313	-.0176
B3	B1	.0511 [*]	.00327	.000	.0442	.0580
	B2	.0244 ⁻	.00327	.000	.0176	.0313

Based on observed means.

The error term is Mean Square(Error) = 4.81E-005.

Lampiran 7. Analisis ragam dan uji lanjut warna nugget dangke substitusi tepung terigu dengan tepung jagung

Standar Deviasi

tepung	Penyimpanan	Mean	Std. Deviation	N
A1	B1	4.13	1.252	30
	B2	3.57	1.357	30
	B3	3.50	1.383	30
	Total	3.73	1.347	90
A2	B1	4.00	1.017	30
	B2	3.90	1.125	30
	B3	4.10	1.155	30
	Total	4.00	1.091	90
A3	B1	4.27	.691	30
	B2	4.17	.747	30
	B3	4.17	1.053	30
	Total	4.20	.837	90
Total	B1	4.13	1.008	90
	B2	3.88	1.120	90
	B3	3.92	1.229	90
	Total	3.98	1.124	270

Dependent Variable:Warna

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	17.933 ^a	8	2.242	1.817	.074
Intercept	4272.133	1	4272.133	3.464E3	.000
A	9.867	2	4.933	4.000	.019
B	3.356	2	1.678	1.360	.258
A * B	4.711	4	1.178	.955	.433
Error	321.933	261	1.233		
Total	4612.000	270			
Corrected Total	339.867	269			

Warna
LSD

(I)I tepung	(J)I tepung	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
A1	A2	-.27	.166	.108	-.59	.06
	A3	-.47*	.166	.005	-.79	-.14
A2	A1	.27	.166	.108	-.06	.59
	A3	-.20	.166	.228	-.53	.13
A3	A1	.47*	.166	.005	.14	.79
	A2	.20	.166	.228	-.13	.53

Based on observed means.

The error term is Mean Square(Error) = 1.233.

*. The mean difference is significant at the .05 level.

Lampiran 8. Analisis ragam dan uji lanjut aroma nugget dangke substitusi tepung terigu dengan tepung jagung

Standar Deviasi

tepung	Penyimpanan	Mean	Std. Deviation	N
A1	B1	3.00	.871	30
	B2	3.27	1.048	30
	B3	3.23	.858	30
	Total	3.17	.927	90
A2	B1	3.27	1.081	30
	B2	3.33	.802	30
	B3	3.27	1.015	30
	Total	3.29	.963	90
A3	B1	2.90	.662	30
	B2	3.07	.691	30
	B3	3.03	.718	30
	Total	3.00	.687	90
Total	B1	3.06	.891	90
	B2	3.22	.858	90
	B3	3.18	.869	90
	Total	3.15	.872	270

Dependent Variable: Aroma

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	5.607 ^a	8	.701	.919	.502
Intercept	2682.226	1	2682.226	3.515E3	.000
A	3.785	2	1.893	2.480	.086
B	1.341	2	.670	.878	.417
A * B	.481	4	.120	.158	.959
Error	199.167	261	.763		
Total	2887.000	270			
Corrected Total	204.774	269			

a. R Squared = .027 (Adjusted R Squared = -.002)

Lampiran 9. Analisis ragam dan uji lanjut rasa nugget dangke substitusi tepung terigu dengan tepung jagung

Standar Deviasi

tepung	Penyimpanan	Mean	Std. Deviation	N
A1	B1	4.63	.999	30
	B2	4.53	1.042	30
	B3	4.50	1.009	30
	Total	4.56	1.007	90
A2	B1	4.40	.968	30
	B2	4.37	.999	30
	B3	4.17	1.053	30
	Total	4.31	1.002	90
A3	B1	4.13	.776	30
	B2	4.10	.803	30
	B3	3.93	.868	30
	Total	4.06	.812	90
Total	B1	4.39	.932	90
	B2	4.33	.960	90
	B3	4.20	.997	90
	Total	4.31	.963	270

Dependent Variable:Rasa

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	13.185 ^a	8	1.648	1.820	.073
Intercept	5009.515	1	5009.515	5.533E3	.000
A	11.252	2	5.626	6.214	.002
B	1.696	2	.848	.937	.393
A * B	.237	4	.059	.065	.992
Error	236.300	261	.905		
Total	5259.000	270			

Rasa
LSD

(I) tepung	(J) tepung	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
A1	A2	.24	.142	.086	-.03	.52
	A3	.50	.142	.000	.22	.78
A2	A1	-.24	.142	.086	-.52	.03
	A3	.26	.142	.073	-.02	.53
A3	A1	-.50 [*]	.142	.000	-.78	-.22
	A2	-.26	.142	.073	-.53	.02

Based on observed means.

The error term is Mean Square(Error) = .905.

*. The mean difference is significant at the .05 level.

Lampiran 10. Analisis ragam dan uji lanjut tekstur nugget dangke substitusi tepung terigu dengan tepung jagung

Standar Deviasi

tepung	Penyimpanan	Mean	Std. Deviation	N
A1	B1	4.43	.679	30
	B2	4.40	.770	30
	B3	4.10	1.094	30
	Total	4.31	.870	90
A2	B1	5.00	.910	30
	B2	4.77	.774	30
	B3	4.87	.973	30
	Total	4.88	.885	90
A3	B1	4.70	.877	30
	B2	4.53	.819	30
	B3	4.60	.814	30
	Total	4.61	.831	90
Total	B1	4.71	.851	90
	B2	4.57	.794	90
	B3	4.52	1.008	90
	Total	4.60	.889	270

Dependent Variable: Tekstur

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	17.733 ^a	8	2.217	2.966	.003
Intercept	5713.200	1	5713.200	7.644E3	.000
A	14.467	2	7.233	9.678	.000
B	1.756	2	.878	1.174	.311
A * B	1.511	4	.378	.505	.732
Error	195.067	261	.747		
Total	5926.000	270			

Tekstur
LSD

(I) tepung	(J) tepung	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
A1	A2	-.57*	.129	.000	-.82	-.31
	A3	-.30 [^]	.129	.021	-.55	-.05
A2	A1	.57*	.129	.000	.31	.82
	A3	.27 [^]	.129	.040	.01	.52
A3	A1	.30*	.129	.021	.05	.55
	A2	-.27 [^]	.129	.040	-.52	-.01

Based on observed means.

The error term is Mean Square(Error) = .747.

*. The mean difference is significant at the .05 level.

Lampiran 11. Analisis ragam dan uji lanjut kesukaan nugget dangke substitusi tepung terigu dengan tepung jagung

Standar Deviasi

tepung	Penyimpanan	Mean	Std. Deviation	N
A1	B1	4.00	.947	30
	B2	3.40	.724	30
	B3	3.13	.730	30
	Total	3.51	.877	90
A2	B1	4.10	.995	30
	B2	3.70	.702	30
	B3	3.67	.802	30
	Total	3.82	.856	90
A3	B1	4.67	1.028	30
	B2	3.87	.730	30
	B3	3.63	.669	30
	Total	4.06	.928	90
Total	B1	4.26	1.023	90
	B2	3.66	.737	90
	B3	3.48	.768	90
	Total	3.80	.912	270

Dependent Variable: Kesukaan

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	46.363 ^a	8	5.795	8.525	.000
Intercept	3891.204	1	3891.204	5.724E3	.000
A	13.430	2	6.715	9.877	.000
B	29.896	2	14.948	21.988	.000
A * B	3.037	4	.759	1.117	.349
Error	177.433	261	.680		
Total	4115.000	270			
Corrected Total	223.796	269			

Kesukaan
LSD

(I) tepung	(J) Level tepung jagung	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
A1	A2	-.31 [*]	.123	.012	-.55	-.07
	A3	-.54 [*]	.123	.000	-.79	-.30
A2	A1	.31 [*]	.123	.012	.07	.55
	A3	-.23	.123	.059	-.48	.01
A3	A1	.54 [*]	.123	.000	.30	.79
	A2	.23	.123	.059	.00	.48

Kesukaan
LSD

(I) Penyimp anan	(J) Penyimp anan	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
B1	B2	.60 [*]	.123	.000	.36	.84
	B3	.78 [*]	.123	.000	.54	1.02
B2	B1	-.60 [*]	.123	.000	-.84	-.36
	B3	.18	.123	.149	-.06	.42
B3	B1	-.78 [*]	.123	.000	-1.02	-.54
	B2	-.18	.123	.149	-.42	.06

Kesukaan
LSD

(I) Penyimp anan	(J) Penyimp anan	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
B1	B2	.60*	.123	.000	.36	.84
	B3	.78	.123	.000	.54	1.02
B2	B1	-.60*	.123	.000	-.84	-.36
	B3	.18	.123	.149	-.06	.42
B3	B1	-.78*	.123	.000	-1.02	-.54
	B2	-.18	.123	.149	-.42	.06

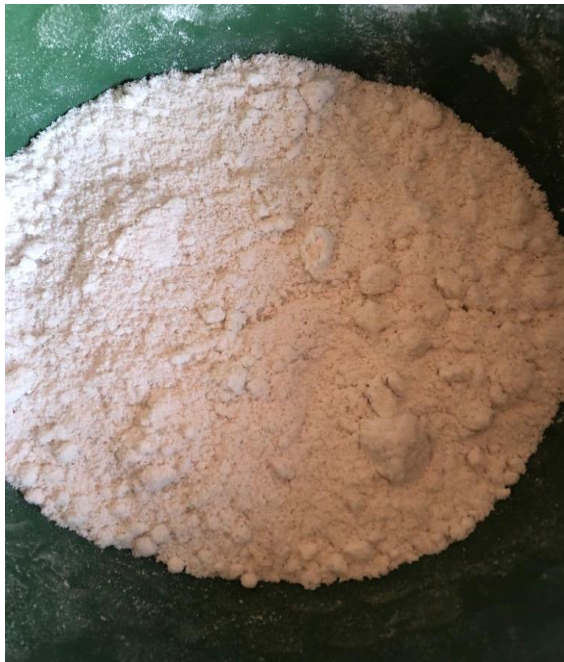
Based on observed means.

The error term is Mean Square(Error) = .680.

*. The mean difference is significant at the .05 level.

Lampiran 12. Dokumentasi penelitian

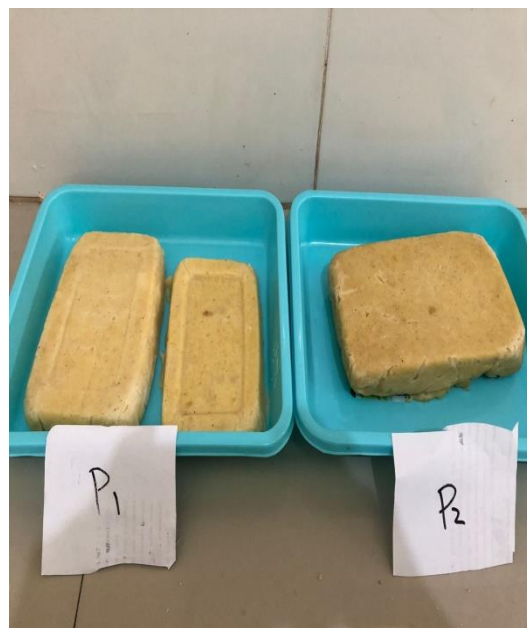
Pembuatan tepung jagung





Pembuatan Nugget Dangke







Pengujian Fisikokimia



Pengujian Organoleptik

