DAFTAR PUSTAKA

Abirami & Kowsalya. 2011. Nutrient And Nutraceutical Potentials Of Seaweed Biomass Ulva Lactuca And *Kappaphycus Alvarezii.* Departement Of Food Science And Nutrition, Avinashilingam University For Women, Coimbatore 641043, Tamil Nadu State, India.

Anonim, 1990. Workshop On Larval Culture Of The Milk Fish (*Chanos Chanos*) Gondol Research Station. Bali. Indonesia. Prepared By : The Oceanic Insatute. Hawai. 102 P.

Arifin, P.P. 2015. Evaluasi Pemberian Ekstrak Kunyit Curcuma Longa Linn. Pada Pakan Terhadap Enzim Pencernaan Dan Kinerja Pertumbuhan Ikan Gurame Osphronemus Gouramy. Skripsi. Institut Pertanian Bogor. 27.

Arta, I W., I G. L.O., Cakra, & A. A. A. S. Trisnadewi. 2020. Kualitas Kimia Silasejerami Padi yang Disuplementasi Daun Gamal dan Kaliandra. PS. Sarjana Peternakan, Fakultas Peternakan, Universitas Udayana, Denpasar, Bali.

Aslamyah, S. 2008. Pembelajaran Berbasis Scl Pada Mata Kuliah Biokimia Nutrisi. Unhas. Makassar.

Aslamyah, Siti., Muh Yusri Karim, & Badraeni. 2018. Pengaruh Dosis Mikroorganisme Mix. Dalam Memfermentasi Bahan Baku Pakan Yang Mengandung Sargassum Sp. Terhadap Kinerja Pertumbuhan, Komposisi Kimia Tubuh Dan Indeks Hepatosomatik Ikan Bandeng, (*Chanos Chanos Forsskal*). Program Studi Budidaya Perairan,Departemen Perikanan, Fakultas Ilmu Kelautan Dan Perikanan, Universitas Hasanuddin. Volume 1 (2) June 2018: 59-70.

Asosiasi Produsen Pakan Indonesia. 2012. 75% Kebutuhan Tepung Ikan Dari Impor. Http:// Asosiasi-Gpmt.Blogspot.Com/2012/11/75.

Aziz A. F., Nematollahi, A., Siavash, & Saei-Dehkordi, S. (2013). Proximate Composition And Fatty Acid Profile Of Edible Tissues Of Capoeta Damascina (Valenciennes, 1842) Reared In

Basir, B. 2013. Kinerja Prebiotik *Lactococcus Lactis* Dalam Saluran Pencernaan Udang Vanamei (*Litopenaeus Vannamei*) Dengan Pemberian Pakan Disuplemen Prebiotik Kacang Hijau (Doctoral Dissertation, Tesis. Universitas Hasanuddin. Makassar).

Boonyaratpalin, M. 1997. *Nutrient Requirements Of Marine Food Fish Cultured In Southeast Asia. Aquaculture, 151(1-4), 283–313.*

Dewi, Kirana Maha. 2013. Daya Hambat Ekstrak Rumput Laut (*Kappaphycus Alvarezii*) Terhadap Bakteri Plak Supragingiva (Eksperimental Laboratoris). Skripsi. Fakultas Kedokteran Gigi. Universitas Airlangga. Surabaya

Direktorat Jendral Perikanan Budidaya. 2011. Statistik Perikanan Budidaya Indonesia. Jakarta:Kementrian Kelautan Perikanan

Direktorat Kelautan Dan Perikanan. 2011. Strategi Pengembangan Infrastruktur Perikanan Dalam Mendukung Peningkatan Daya Saing. Info Kajian Bappenas, Direktorat Kelautan Dan Perikanan, 8(2):10-17

Doty, 2001. *Kappaphycus Alvarezii*, Manoa University Of Hawai P. A-21.

Effendi.1979. Metoda Biologi Perikanan. Yayasan Dewi Sri. Bogor. 112 Hal

Effendie, M.I.2002. Biologi Perikanan. Cetakan Kedua. Yogyakarta. Yayasan Pustaka Nusatama. 163 Halaman

Froese, R. And D. Pauly. Editors. (2022). Fishbase. *Chanos Chanos* (Forsskål, 1775). Accessed Through: World Register Of Marine Species At: Https://Www.Marinespecies.Org/Aphia.Php?P=Taxdetails&Id=217625 On 09-02-2022

Fu Sj, Xie Xj, 2004. Nutritional Homeostasis In Carnivorous Southern Catfish (Silurus Meridionalis): Is There A Mechanism For Increased Energy Expenditure During Carbohydrate Overfeeding? Comp Biochem Physiol Part A 130: 359- 363.

Furuichi M. 1988. Carbohydrates. In: Watanabe T (Ed.). Fish Nutrition And Mariculture. Departement Of Aquatic Biosciences, University Of Fisheries. Tokyo, Pp. 44-55.

Gomez-Gill, B. 1998. Evaluation Of Potential Probionts For Use In Penaeid Shrimp Larval Culture. *Journal*. Institute Of Agriculture, University Of Stirling.

Hadie, W & Jatna, S. 1986. Teknik Budidaya Bandeng. Bhantara Karya Aksara. Jakarta. 57 Hlm.

Kesarcodi-Watson A., Kaspar H., Lategan J. & Gibson L. 2008. Probiotics In Aquaculture : The Need, Principles And Mechanisms Of Action And Screening Processes. Aquaculture, 274: 1-14.

Hady, M. M., El-Banna, R. A., Teleb, H. M., & Shimaa, R. A. 2012. Impact Of Manna Oligosaccharide (Bio-Mos) And Esterified Glucomannan (Mtb-100) Dietary Supplementation On Performance And Health Status Of Barki Lambs Under Egyptian Conditions. *International Journal Of Chemical Engineering And Applications*, *3*(4), 264.

Haslinda. 2017. Pengaruh Fermentasi Bahan Pakan Dengan Mikroorganisme Mix Terhadap Komposisi Kimia Tubuh Dan Indeks Hepatosomatik Ikan Bandeng (*Chanos chanos* Frosskal). Universitas Hasanuddin. Makassar.

Jangkaru, Z. 1974. Makanan Ikan. Lembaga Penelitian Perikanan Darat, Bogor.

Jibril, Aisyah Humairah. 2021. Substitusi Tepung Ikan Dengan Tepung Bekicot Terhadap Rasio Konversi Pakan (FCR) Dan Komposisi Kimia Tubuh Udang Vaname. Universitas Hasanuddi. Makassar.

Khasani, I. 2007. Aplikasi Probiotik Menuju Sistem Budidaya Perikanan Berkelanjutan. Media Akuakultur. 2(2): 86-90.

Kurniasih, Nunung & Tina Dewi Rosahdi. 2013. Perbandingan Efektivitas Sari Kacang Merah Dan Kacang Hijau Sebagai Media Pertumbuhan Lactobacillus Acidophilus. Uin Sunan Gunung Djati. Bandung.

Kurniasih, N., & Rosahdi, T. D. 2013. Perbandingan Efektivitas Sari Kacang Merah Dan Kacang Hijau Sebagai Media Pertumbuhan *Lactobacillus Acidophilus*. Prosiding Seminar Nasional Sains Dan Teknologi Nuklir (Pp. 212-216).

Lain, 2005, *Process Technology For Euchema Seaplants*, Makassar, P. 1-9.

Lehninger Al. 1982. Dasar-Dasar Biokimia (Jilid 1). Thenawidjaja M (Penerjemah). Erlangga, Jakarta.

Lesmanawati, W. Widanarni. Sukenda. Dan W. Purbiantoro. 2013. Potensi Ekstrak Oligosakarida Ubi Jalar Sebagai Prebiotik Bakteri Probiotik Akuakultur (The Potential Of Sweet Potato Oligosaccharide Extract As Aquaculture Probiotic Bacteria Prebiotic). Jurnal Sains Terapan 3(1):21-25.

Lestari, Nurdera Aprilia., Siti Aslamyah, & Zainuddin. 2019. Komposisi Kimia Tubuh Dan Kadar Glikogen Pada Berbagai Dosis Ubi Jalar (Ipomea Batatas) Sebagai Prebiotik Dari Lactobacillus Sp. Pada Udang Vaname (Litopenaeus Vannamaei). Universitas Hasanuddin.

Lestari, Rizka Puji., Ayu Wulandari, Lulu Aadilah. 2014. Usulan Pkm Trio *Chanos Chanos* (Ikan Bandeng) In Mini Cafetaria. Universitas Pekalongan

Magdalena, Stella., Natadiputri Gh, Nailufar F, & Purwadaria T. 2013. Pemanfaatan Produk Alami Sebagai Pakan Fungsional. Fakultas Teknobiologi. Universitas Katolik Indonesia Atma Jaya

Marlin, A. 2008. Isolasi Oligosakarida Ubi Jalar (Ipomoea Batatas L.) Dan Pengaruh Pengolahan Terhadap Potensi Prebiotiknya. Tesis. Institut Pertanian Bogor. Bogor.

Mas'ud, Faisol. 2011. Prevalensi Dan Derajat Infeksi Dactylogyrus Sp. Pada Insang Benih Bandeng (*Chanos Chanos*) Di Tambak Tradisional, Kecamatan Glagah, Kabupaten Lamongan. Jurnal Ilmiah Perikanan Dan Kelautan Vol. 3, No. 1

Mayana, Mayana. Zainal A. Muchlisin. & Irma Dewiyanti. 2016. Pemanfaatan Ekstrak Bawang Merah (Allium Cepa) Dalam Pakan Sebagai Sumber Prebiotik Untuk Benih Ikan Seurukan (Osteochilus Vittatus). Jurnal Ilmiah Mahasiswa Kelautan Dan Perikanan Unsyiah Volume 1, Nomor 1: 25-34 Januari – April 2016. Program Studi Budidaya Perairan Fakultas Kelautan Dan Perikanan Universitas Syiah Kuala Darussalam. Banda Aceh.

Moongngarm, A., Trachoo, N. Sirigungwan. 2011. Low Molecular Weight Carbohydrates, Prebiotic Content, And Prebiotic Activity Of Selected Food Plants In Thailand. Advance Journal Of Food Science And Technology, 3(4): 269-274.

Mussatto, S, I, Mancilha, I, M. 2007. Nondigestible Oligosaccharides : A Review. Carbohydrate Polymers. 68(3):587-597

Naharuddin, A. I. 2018. Pengaruh Suplementasi Ekstrak Lumbricus Sp. Sebagai Feed Additive Dalam Pakan Fermentasi Terhadap Indeks Hepatosomatik Dan Glikogen Hati Dan Otot Ikan Bandeng (Chanos Chanos). Skripsi. Fakultas Ilmu Kelautan Dan Perikanan. Universitas Hasanuddin. 39.

Nichols Pd, Glencross B, Petrie Jr, Singh Sp. 2014. Readily Available Sources Of Long-Chain Omega-3 Oils: Is Farmed Australian Seafood A Better Source Of The Good Oil Than Wildcaught Seafood. Nutrients (6): 1063-1079.

Nur, A.N. 2011. Pengaruh Pemberian Berbagai Kombinasi Kadar Karbohidrat Pakan Dan Kromium Terhadap Deposit Glikogen Hepatopankreas Dan Otot Gelondongan Udang Windu (Penaeus Monodon). Skripsi. Universitas

Hasanuddin. Makassar.

Parwata I.M.O.A & Dewi P.F.S.2008, *Isolasi Dan Uji Aktivitas Antibakteri*, Vol. 1, No. 3, Pp. 1-5.

Permatasari, Vitta Rizky., Dwi Setyaningsih, Liesbetini Haditjaroko. 2018. Hidrolisis Rumput Laut *Euchema Cottonii* Menggunakan Asam Sulfat Dan Kultur Inaktif Untuk Produksi Prebiotik

Permatasari., Vitta Rizky Setyaningsih., Dwi Haditjaroko., Liesbetini. 2018. Pemanfaatan Rumput Laut Eucheuma Cottonii Untuk Memproduksi Prebiotik Galakto-Olisakarida. Institut Pertanian Bogor. Bogor.

Prajitno, 2007, *Uji Sensitivitas Falvonoid Rumput Laut (Euchema Cottoni) Sebagai Bioaktif Alami Terhadap Vibrio Harvey*, Thesis S2, Fakultas Perikanan. Univ. Brawijaya Malang.

Putra, A. N. 2010. Kajian Probiotik, Prebiotik Dan Sinbiotik Untuk Meningkatkan Kinerja Pertumbuhan Ikan Nila (Oreochromis Niloticus). Tesis. Program Pascasarjana. Institut Pertanian Bogor. Bogor.

Rahimi S, Shiraz Zm, Salehi Tz, Torshizi Mak, Grimes Jl. 2007. Prevention Of Salmonella Infection In Poultry By Specific Egg-Derived Antibody. Int J Poult Sci. 6:230-235.

Rahman, R., Lahming dan R. Fadillah. 2018. Evaluasi Komponen Gizi Pada Pakan Udang Fermentasi. Jurnal Pendidikan Teknologi Pertanian, Vol. 4: 101-111.

Rajasulochana P, Krishnamoorthy P, Dhamotharan R, 2013, *Research Journal Of Pharmaceutical, Biological And Chemical Sciences, An Investigation On The Antioxidant, Antifungal,And Antibacterial Of The Kappaphycus Alvarezii* Vol. 4, No. 1, P. 586.

Ratnawati E, Mustapa A, Anugriati. 2010. Penentuan Faktor Pengelolaan Yang Memengaruhi Produksi Ikan Bandeng (*Chanos Chanos*) Di Tambak Kabupaten Bone Provinsi Sulawesi Selatan. Balai Riset Perikanan Budi Daya Air Payau, Maros. *Forum Inovasi Teknologi Akuakultur 2010.*

Saanin, H. 1984. Taksonomi Dan Kunci Identifikasi Ikan, Jilid I-Ii. Edisi Ii. Bina Cipta. Bogor.

Saarela, M., G. Mogensen, R. Fonde, J. Matto And T.M. Sandholm. 2000. Probiotic Bacteria: Safety, Functional And Technological Properties. J. Biotechnol. 84(2000): 197 – 215

Salminen, S., E. Isolauri And E. Salminen. 1996. Clinical Uses Of Probiotics For Stabilizing The Gut Mucosal Barrier: Successful Strains And Future Challenges. Antonie Van Leeuwenhoek 70: 347 – 358.

Saparinto, C. 2007. Membuat Aneka Olahan Bandeng. Jakarta: Penebar Swadaya

Saparinto, Cahyo, Ida Purnomowati, Dan Diana Hidayati. 2006. Bandeng Duri Lunak. Yogyakarta : Kanisius.

Schrezenmeir J, Vrese M. 2001. Probiotics, Prebiotics And Synbiotic-Approaching A Definition. American Journal Of Clinical Nutrition 73: 361–364.

Shearer, Karl D. 1993. Factors affecting the proximate composition of cultured fishes

with emphasis on salmonids. National Marine Fisheries Service, National Oceanographic and Atmospheric Administration, Department of Commerce, Seattle, WA, USA.

Somaatmadja, S.1993. Prosea Sumber Daya Nabati Asia Tenggara 1. Kacang-Kacangan. Jakarta: Pt Gramedia Pustaka Utama.

Sutardi, T. 2006. Landasan Ilmu Nutrisi Jilid 1. Departemen Ilmu Makanan Ternak. Bogor: Fakultas Peternakan IPB.

Sutrisnani, C. S. 2012. Glicogen Storage Diseasetipe 1 Von Gierke Disease. Makalah. Program Pasca Sarjana Ilmu Biomedik. Malang.

Thirumaran G, Manivannaan K, Kartikhai Vira G, Anantharaman P, Balasubranian T., 2009, *Photosyntethic Pigment Of Different Colourstraint Of Cultured Seaweed Kappaphycus Alvarezii Doty Ex Silva In Vellar Estuary*, Academic Journal Of Plant Sprajitnocience, Vol 2, No.3 Pp. 150-153.

Torrecillas S, Makol A, Caballero Mj, Montero D, Robaina L, Real F, Sweetman J, Tort L, Izquierdo Ms. 2007. Immune Stimulation And Improved Infection Resistance In European Sea Bass Dicentrarchus Labrax Fed Mannan Oligosaccharides. Fish And Shellfish Immunology. 23:969-81

Verschuere, L., G. Robaut, P. Sorgeloos And W. Verstraete, 2000. Probiotic Bacteria As Biological Control Agents In Aquaculture. A Reviews. *Microbiology And Molecular Biology.* 64(4):655-671.

Volk W.A & Wheleer, 1988, Mikrobiologi Dasar, Jakarta : Erlanggga, P.215.

Wedemeyer Ga, Yasutake Wt. 1977. Clinical Methods For The Assesment Of The Effects Of Environmental Stress On Fish Health. Technical Paper Of The Us Fish And Wildlife Service. Volume 89. Usa Washington Dc: Us Departement Of The Interior Fish And Wildlife Service.

Wibowo, S. 2009. Budidaya Bawang Putih, Bawang Merah Dan Bawang Bombay. Penebar Swadaya, Jakarta.

Wiganjar, A.C.R. 2006. Performa Ayam Broiler Yang Diinfeksi Bakteri Salmonella Thypimurium Dengan Pakan Mengandung Ikatan Mannan Dari Bungkil Inti Sawit. [Skripsi]. Program Studi Nutrisi Dan Makanan Ternak. Fakultas Peternakan. Institut Pertanian Bogor. 37 Hlm.

Zainuddin, Haryati. Dan S. Aslamyah. 2015. Glikogen Dan Proksimat Tubuh Juvenile Udang Vaname Yang Diberi Pakan Dengan Kadar Karbohidrat Dan Frekuensi Pemberian Berbeda. Jurnal Akuakultur Indonesia 14 (1), 18-23.

Lampiran 1. Data komposisi kimia tubuh ikan bandeng dengan berbagai perlakuan prebiotik dari sumber yang berbeda dalam pakan

Perlakuan (Sumber Prebiotik)	Ulangan	Air (%)	Protein Kasar (% bk)	Lemak Kasar (% bk)	Abu (% bk)	Karbohidrat		Energi (Kkal/kg)
						Serat Kasar (% bk)	BETN (% bk)	
Awal		73.09	61.41	10.54	25.07	1.16	1.81	3.048,66
A	1	71.25	62.34	11.97	22.33	1.03	2.34	3.209,67
	2	69.64	63.98	11.97	20.41	1.31	2.33	3.266,90
	3	70.16	62.96	11.48	22.01	1.13	2.42	3.194,02
	Rata-rata	70.35	63.09	11.80	21.58	1.16	2.36	3.223,53
B	1	69.03	69.64	14.25	12.26	1.25	2.60	3.656,54
	2	69.31	68.37	14.69	12.99	1.69	2.26	3.639,43
	3	70.13	69.82	15.64	10.53	1.64	2.37	3.769,68
	Rata-rata	69.49	69.28	14.86	11.93	1.53	2.41	3.688,55
C	1	70.86	65.54	12.82	17.26	1.62	2.75	3.401,36
	2	70.39	64.42	12.75	19.34	1.47	2.03	3.337,91
	3	69.86	65.96	13.41	17.10	1.23	2.29	3.452,52
	Rata-rata	70.37	65.31	12.99	17.84	1.44	2.36	3.397,26
D	1	69.22	69.48	14.03	12.00	1.53	2.96	3.642,15
	2	69.98	69.48	15.31	11.34	1.60	2.26	3.728,81
	3	69.69	70.26	15.13	10.54	1.48	2.59	3.749,04
	Rata-rata	69.63	69.74	14.82	11.21	1.54	2.61	3.706,67
E	1	70.35	67.75	13.86	14.84	1.34	2.21	3.548,86
	2	69.35	66.96	13.86	15.47	1.34	2.37	3.525,27
	3	70.89	66.64	12.17	16.85	1.58	2.75	3.387,31
	Rata-rata	70.20	67.12	13.30	15.72	1.42	2.44	3.487,15

Lampiran 2. Data perubahan relatif komposisi kimia tubuh ikan bandeng dengan berbagai perlakuan prebiotik dari sumber yang berbeda dalam pakan

Perlakuan (Sumber Prebiotik)	Ulangan	Protein Kasar (% bk)	Lemak Kasar (% bk)	Abu (% bk)	Karbohidrat	
					Serat Kasar (% bk)	BETN (% bk)
A	1	1.51	13.56	-10.92	-11.20	29.28
	2	4.18	13.56	-18.58	12.93	28.72
	3	2.52	8.91	-12.20	-2.58	33.70
B	1	13.40	35.19	-51.09	7.75	43.64
	2	11.33	39.37	-48.18	45.68	24.86
	3	13.69	48.38	-57.99	41.37	30.93
C	1	6.72	21.63	-31.15	39.65	51.93
	2	4.90	20.96	-22.85	26.72	12.15
	3	7.40	27.22	-31.79	6.03	26.51
D	1	13.14	33.11	-52.13	31.89	63.53
	2	13.14	45.25	-54.76	37.93	24.86
	3	14.41	43.54	-57.95	27.58	43.09
E	1	10.32	31.49	-40.80	15.51	22.09
	2	9.03	31.49	-38.29	15.51	30.93
	3	8.51	15.46	-32.78	36.20	51.93

Lampiran 3. Data kadar glikogen hati dan otot ikan bandeng yang diberi perlakuan prebiotik dari sumber yang berbeda dalam pakan

Perlakuan (Sumber Prebiotik)	Ulangan	Glikogen Hati (mg/g)	Glikogen Otot (mg/g)
Awal		4.45	4.17
A	1	5.15	5.62
	2	5.22	5.59
	3	5.77	5.28
	Rata-rata	5.38	5.50
B	1	5.67	5.09
	2	5.46	4.92
	3	5.58	5.23
	Rata-rata	5.57	5.08
C	1	5.8	5.61
	2	5.60	5.58
	3	5.85	5.62
	Rata-rata	5.75	5.60
D	1	5.28	5.22
	2	5.85	5.80
	3	5.67	5.22
	Rata-rata	5.60	5.41
E	1	5.50	5.20
	2	5.79	5.49
	3	5.37	5.56
	Rata-rata	5.55	5.42

Lampiran 4. Hasil analisis ragam kadar air

ANOVA

Air

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	2.084	4	.521	1.296	.335
Within Groups	4.020	10	.402		
Total	6.104	14			

Post Hoc Tests

Multiple Comparisons

Dependent Variable: Air
Tukey HSD

(I) Perlakuan	(J) Perlakuan	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval Lower Bound	95% Confidence Interval Upper Bound
Kontrol	UJ	.86000	.51767	.496	-.8437	2.5637
	RL	-.02000	.51767	1.000	-1.7237	1.6837
	KH	.72000	.51767	.646	-.9837	2.4237
	BM	.15333	.51767	.998	-1.5503	1.8570
UJ	Kontrol	-.86000	.51767	.496	-2.5637	.8437
	RL	-.88000	.51767	.475	-2.5837	.8237
	KH	-.14000	.51767	.999	-1.8437	1.5637
	BM	-.70667	.51767	.661	-2.4103	.9970
RL	Kontrol	.02000	.51767	1.000	-1.6837	1.7237
	UJ	.88000	.51767	.475	-.8237	2.5837
	KH	.74000	.51767	.624	-.9637	2.4437
	BM	.17333	.51767	.997	-1.5303	1.8770
KH	Kontrol	-.72000	.51767	.646	-2.4237	.9837
	UJ	.14000	.51767	.999	-1.5637	1.8437
	RL	-.74000	.51767	.624	-2.4437	.9637
	BM	-.56667	.51767	.806	-2.2703	1.1370
BM	Kontrol	-.15333	.51767	.998	-1.8570	1.5503
	UJ	.70667	.51767	.661	-.9970	2.4103
	RL	-.17333	.51767	.997	-1.8770	1.5303
	KH	.56667	.51767	.806	-1.1370	2.2703

*. The mean difference is significant at the 0.05 level.

Homogeneous Subsets

Air

Tukey HSD[a]

Perlakuan	N	Subset for alpha = 0.05 1
UJ	3	69.4900
KH	3	69.6300
BM	3	70.1967
Kontrol	3	70.3500
RL	3	70.3700
Sig.		.475

Means for groups in homogeneous subsets are displayed.
a. Uses Harmonic Mean Sample Size = 3.000.

Lampiran 5. Hasil analisis ragam kadar protein kasar

ANOVA

Protein_Kasar

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	92.371	4	23.093	46.683	.000
Within Groups	4.947	10	.495		
Total	97.318	14			

Post Hoc Tests

Multiple Comparisons

Dependent Variable: Protein_Kasar
Tukey HSD

(I) Perlakuan	(J) Perlakuan	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval Lower Bound	95% Confidence Interval Upper Bound
Kontrol	UJ	-6.18333*	.57426	.000	-8.0733	-4.2934
	RL	-2.21333*	.57426	.021	-4.1033	-.3234
	KH	-6.64667*	.57426	.000	-8.5366	-4.7567
	BM	-4.02333*	.57426	.000	-5.9133	-2.1334
UJ	Kontrol	6.18333*	.57426	.000	4.2934	8.0733
	RL	3.97000*	.57426	.000	2.0801	5.8599
	KH	-.46333	.57426	.923	-2.3533	1.4266
	BM	2.16000*	.57426	.024	.2701	4.0499
RL	Kontrol	2.21333*	.57426	.021	.3234	4.1033
	UJ	-3.97000*	.57426	.000	-5.8599	-2.0801
	KH	-4.43333*	.57426	.000	-6.3233	-2.5434
	BM	-1.81000	.57426	.062	-3.6999	.0799
KH	Kontrol	6.64667*	.57426	.000	4.7567	8.5366
	UJ	.46333	.57426	.923	-1.4266	2.3533
	RL	4.43333*	.57426	.000	2.5434	6.3233
	BM	2.62333*	.57426	.007	.7334	4.5133
BM	Kontrol	4.02333*	.57426	.000	2.1334	5.9133
	UJ	-2.16000*	.57426	.024	-4.0499	-.2701
	RL	1.81000	.57426	.062	-.0799	3.6999
	KH	-2.62333*	.57426	.007	-4.5133	-.7334

*. The mean difference is significant at the 0.05 level.

Homogeneous Subsets

Protein_Kasar

Tukey HSD[a]

Perlakuan	N	Subset for alpha = 0.05 1	2	3
Kontrol	3	63.0933		
RL	3		65.3067	
BM	3		67.1167	
UJ	3			69.2767
KH	3			69.7400
Sig.		1.000	.062	.923

Means for groups in homogeneous subsets are displayed.
a. Uses Harmonic Mean Sample Size = 3.000.

Lampiran 6. Hasil analisis ragam kadar lemak kasar

ANOVA

Lemak_Kasar

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	20.252	4	5.063	11.783	.001
Within Groups	4.297	10	.430		
Total	24.548	14			

Post Hoc Tests

Multiple Comparisons

Dependent Variable: Lemak_Kasar
Tukey HSD

(I) Perlakuan	(J) Perlakuan	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval Lower Bound	95% Confidence Interval Upper Bound
Kontrol	UJ	-3.05333*	.53521	.001	-4.8147	-1.2919
	RL	-1.18667	.53521	.249	-2.9481	.5747
	KH	-3.01667*	.53521	.002	-4.7781	-1.2553
	BM	-1.49000	.53521	.109	-3.2514	.2714
UJ	Kontrol	3.05333*	.53521	.001	1.2919	4.8147
	RL	1.86667*	.53521	.037	.1053	3.6281
	KH	.03667	.53521	1.000	-1.7247	1.7981
	BM	1.56333	.53521	.089	-.1981	3.3247
RL	Kontrol	1.18667	.53521	.249	-.5747	2.9481
	UJ	-1.86667*	.53521	.037	-3.6281	-.1053
	KH	-1.83000*	.53521	.041	-3.5914	-.0686
	BM	-.30333	.53521	.977	-2.0647	1.4581
KH	Kontrol	3.01667*	.53521	.002	1.2553	4.7781
	UJ	-.03667	.53521	1.000	-1.7981	1.7247
	RL	1.83000*	.53521	.041	.0686	3.5914
	BM	1.52667	.53521	.098	-.2347	3.2881
BM	Kontrol	1.49000	.53521	.109	-.2714	3.2514
	UJ	-1.56333	.53521	.089	-3.3247	.1981
	RL	.30333	.53521	.977	-1.4581	2.0647
	KH	-1.52667	.53521	.098	-3.2881	.2347

*. The mean difference is significant at the 0.05 level.

Homogeneous Subsets

Lemak_Kasar

Tukey HSD[a]

Perlakuan	N	Subset for alpha = 0.05 1	2
Kontrol	3	11.8067	
RL	3	12.9933	
BM	3	13.2967	13.2967
KH	3		14.8233
UJ	3		14.8600
Sig.		.109	.089

Means for groups in homogeneous subsets are displayed.
a. Uses Harmonic Mean Sample Size = 3.000.

Lampiran 7. Hasil analisis ragam kadar abu

ANOVA

Abu

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	219.329	4	54.832	47.209	.000
Within Groups	11.615	10	1.161		
Total	230.944	14			

Post Hoc Tests

Multiple Comparisons

Dependent Variable: Abu
Tukey HSD

(I) Perlakuan	(J) Perlakuan	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval Lower Bound	95% Confidence Interval Upper Bound
Kontrol	UJ	9.65667*	.87995	.000	6.7607	12.5527
	RL	3.68333*	.87995	.013	.7873	6.5793
	KH	10.29000*	.87995	.000	7.3940	13.1860
	BM	5.86333*	.87995	.000	2.9673	8.7593
UJ	Kontrol	-9.65667*	.87995	.000	-12.5527	-6.7607
	RL	-5.97333*	.87995	.000	-8.8693	-3.0773
	KH	.63333	.87995	.947	-2.2627	3.5293
	BM	-3.79333*	.87995	.010	-6.6893	-.8973
RL	Kontrol	-3.68333*	.87995	.013	-6.5793	-.7873
	UJ	5.97333*	.87995	.000	3.0773	8.8693
	KH	6.60667*	.87995	.000	3.7107	9.5027
	BM	2.18000	.87995	.172	-.7160	5.0760
KH	Kontrol	-10.29000*	.87995	.000	-13.1860	-7.3940
	UJ	-.63333	.87995	.947	-3.5293	2.2627
	RL	-6.60667*	.87995	.000	-9.5027	-3.7107
	BM	-4.42667*	.87995	.004	-7.3227	-1.5307
BM	Kontrol	-5.86333*	.87995	.000	-8.7593	-2.9673
	UJ	3.79333*	.87995	.010	.8973	6.6893
	RL	-2.18000	.87995	.172	-5.0760	.7160
	KH	4.42667*	.87995	.004	1.5307	7.3227

*. The mean difference is significant at the 0.05 level.

Homogeneous Subsets

Abu

Tukey HSD[a]

Perlakuan	N	Subset for alpha = 0.05 1	2	3
KH	3	11.2933		
UJ	3	11.9267		
BM	3		15.7200	
RL	3		17.9000	
Kontrol	3			21.5833
Sig.		.947	.172	1.000

Means for groups in homogeneous subsets are displayed.
a. Uses Harmonic Mean Sample Size = 3.000.

Lampiran 8. Hasil analisis ragam kadar serat kasar

ANOVA

Serat_Kasar

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.284	4	.071	2.541	.106
Within Groups	.279	10	.028		
Total	.563	14			

Post Hoc Tests

Multiple Comparisons

Dependent Variable: Serat_Kasar
Tukey HSD

(I) Perlakuan	(J) Perlakuan	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval Lower Bound	95% Confidence Interval Upper Bound
Kontrol	UJ	-.37000	.13648	.122	-.8192	.0792
	RL	-.28333	.13648	.300	-.7325	.1658
	KH	-.38000	.13648	.109	-.8292	.0692
	BM	-.26333	.13648	.362	-.7125	.1858
UJ	Kontrol	.37000	.13648	.122	-.0792	.8192
	RL	.08667	.13648	.966	-.3625	.5358
	KH	-.01000	.13648	1.000	-.4592	.4392
	BM	.10667	.13648	.930	-.3425	.5558
RL	Kontrol	.28333	.13648	.300	-.1658	.7325
	UJ	-.08667	.13648	.966	-.5358	.3625
	KH	-.09667	.13648	.950	-.5458	.3525
	BM	.02000	.13648	1.000	-.4292	.4692
KH	Kontrol	.38000	.13648	.109	-.0692	.8292
	UJ	.01000	.13648	1.000	-.4392	.4592
	RL	.09667	.13648	.950	-.3525	.5458
	BM	.11667	.13648	.907	-.3325	.5658
BM	Kontrol	.26333	.13648	.362	-.1858	.7125
	UJ	-.10667	.13648	.930	-.5558	.3425
	RL	-.02000	.13648	1.000	-.4692	.4292
	KH	-.11667	.13648	.907	-.5658	.3325

*. The mean difference is significant at the 0.05 level.

Homogeneous Subsets

Serat_Kasar

Tukey HSD[a]

Perlakuan	N	Subset for alpha = 0.05 1
Kontrol	3	1.1567
BM	3	1.4200
RL	3	1.4400
UJ	3	1.5267
KH	3	1.5367
Sig.		.109

Means for groups in homogeneous subsets are displayed.
a. Uses Harmonic Mean Sample Size = 3.000.

Lampiran 9. Hasil analisis ragam kadar BETN

ANOVA

BETN

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.121	4	.030	.414	.795
Within Groups	.730	10	.073		
Total	.851	14			

Post Hoc Tests

Multiple Comparisons

Dependent Variable: BETN
Tukey HSD

(I) Perlakuan	(J) Perlakuan	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval Lower Bound	95% Confidence Interval Upper Bound
Kontrol	UJ	-.04667	.22062	.999	-.7727	.6794
	RL	.00667	.22062	1.000	-.7194	.7327
	KH	-.24000	.22062	.809	-.9661	.4861
	BM	-.08000	.22062	.996	-.8061	.6461
UJ	Kontrol	.04667	.22062	.999	-.6794	.7727
	RL	.05333	.22062	.999	-.6727	.7794
	KH	-.19333	.22062	.899	-.9194	.5327
	BM	-.03333	.22062	1.000	-.7594	.6927
RL	Kontrol	-.00667	.22062	1.000	-.7327	.7194
	UJ	-.05333	.22062	.999	-.7794	.6727
	KH	-.24667	.22062	.794	-.9727	.4794
	BM	-.08667	.22062	.994	-.8127	.6394
KH	Kontrol	.24000	.22062	.809	-.4861	.9661
	UJ	.19333	.22062	.899	-.5327	.9194
	RL	.24667	.22062	.794	-.4794	.9727
	BM	.16000	.22062	.946	-.5661	.8861
BM	Kontrol	.08000	.22062	.996	-.6461	.8061
	UJ	.03333	.22062	1.000	-.6927	.7594
	RL	.08667	.22062	.994	-.6394	.8127
	KH	-.16000	.22062	.946	-.8861	.5661

*. The mean difference is significant at the 0.05 level.

Homogeneous Subsets

BETN

Tukey HSD[a]

Perlakuan	N	Subset for alpha = 0.05 1
RL	3	2.3567
Kontrol	3	2.3633
UJ	3	2.4100
BM	3	2.4433
KH	3	2.6033
Sig.		.794

Means for groups in homogeneous subsets are displayed.
a. Uses Harmonic Mean Sample Size = 3.000.

Lampiran 10. Hasil analisis ragam kadar energi

ANOVA

Energi

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	496247.737	4	124061.934	30.087	.000
Within Groups	41233.799	10	4123.380		
Total	537481.536	14			

Post Hoc Tests

Multiple Comparisons

Dependent Variable: Energi
Tukey HSD

(I) Perlakuan	(J) Perlakuan	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval Lower Bound	95% Confidence Interval Upper Bound
Kontrol	UJ	-465.02000*	52.43014	.000	-637.5719	-292.4681
	RL	-173.73333*	52.43014	.048	-346.2852	-1.1814
	KH	-483.13667*	52.43014	.000	-655.6886	-310.5848
	BM	-263.61667*	52.43014	.004	-436.1686	-91.0648
UJ	Kontrol	465.02000*	52.43014	.000	292.4681	637.5719
	RL	291.28667*	52.43014	.002	118.7348	463.8386
	KH	-18.11667	52.43014	.996	-190.6686	154.4352
	BM	201.40333*	52.43014	.021	28.8514	373.9552
RL	Kontrol	173.73333*	52.43014	.048	1.1814	346.2852
	UJ	-291.28667*	52.43014	.002	-463.8386	-118.7348
	KH	-309.40333*	52.43014	.001	-481.9552	-136.8514
	BM	-89.88333	52.43014	.468	-262.4352	82.6686
KH	Kontrol	483.13667*	52.43014	.000	310.5848	655.6886
	UJ	18.11667	52.43014	.996	-154.4352	190.6686
	RL	309.40333*	52.43014	.001	136.8514	481.9552
	BM	219.52000*	52.43014	.013	46.9681	392.0719
BM	Kontrol	263.61667*	52.43014	.004	91.0648	436.1686
	UJ	-201.40333*	52.43014	.021	-373.9552	-28.8514
	RL	89.88333	52.43014	.468	-82.6686	262.4352
	KH	-219.52000*	52.43014	.013	-392.0719	-46.9681

*. The mean difference is significant at the 0.05 level.

Homogeneous Subsets

Energi

Tukey HSD[a]

Perlakuan	N	Subset for alpha = 0.05 1	2	3
Kontrol	3	3223.5300		
RL	3		3397.2633	
BM	3		3487.1467	
UJ	3			3688.5500
KH	3			3706.6667
Sig.		1.000	.468	.996

Means for groups in homogeneous subsets are displayed.
a. Uses Harmonic Mean Sample Size = 3.000.

Lampiran 11. Hasil analisis ragam kadar karbohidrat

ANOVA

Karbohidrat

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.604	4	.151	1.372	.311
Within Groups	1.101	10	.110		
Total	1.705	14			

Post Hoc Tests

Multiple Comparisons

Dependent Variable: Karbohidrat
Tukey HSD

(I) Perlakuan	(J) Perlakuan	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval Lower Bound	95% Confidence Interval Upper Bound
Kontrol	UJ	-.41333	.27096	.570	-1.3051	.4784
	RL	-.27333	.27096	.846	-1.1651	.6184
	KH	-.61667	.27096	.229	-1.5084	.2751
	BM	-.34333	.27096	.715	-1.2351	.5484
UJ	Kontrol	.41333	.27096	.570	-.4784	1.3051
	RL	.14000	.27096	.984	-.7517	1.0317
	KH	-.20333	.27096	.939	-1.0951	.6884
	BM	.07000	.27096	.999	-.8217	.9617
RL	Kontrol	.27333	.27096	.846	-.6184	1.1651
	UJ	-.14000	.27096	.984	-1.0317	.7517
	KH	-.34333	.27096	.715	-1.2351	.5484
	BM	-.07000	.27096	.999	-.9617	.8217
KH	Kontrol	.61667	.27096	.229	-.2751	1.5084
	UJ	.20333	.27096	.939	-.6884	1.0951
	RL	.34333	.27096	.715	-.5484	1.2351
	BM	.27333	.27096	.846	-.6184	1.1651
BM	Kontrol	.34333	.27096	.715	-.5484	1.2351
	UJ	-.07000	.27096	.999	-.9617	.8217
	RL	.07000	.27096	.999	-.8217	.9617
	KH	-.27333	.27096	.846	-1.1651	.6184

*. The mean difference is significant at the 0.05 level.

Homogeneous Subsets

Karbohidrat

Tukey HSD[a]

Perlakuan	N	Subset for alpha = 0.05 1
Kontrol	3	3.5233
RL	3	3.7967
BM	3	3.8667
UJ	3	3.9367
KH	3	4.1400
Sig.		.229

Means for groups in homogeneous subsets are displayed.
a. Uses Harmonic Mean Sample Size = 3.000.

Lampiran 12. Hasil analisis ragam kadar glikogen hati

ANOVA

Glikogen_Hati

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.209	4	.052	.950	.475
Within Groups	.550	10	.055		
Total	.759	14			

Post Hoc Tests

Multiple Comparisons

Dependent Variable: Glikogen_Hati
Tukey HSD

(I) Perlakuan	(J) Perlakuan	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval Lower Bound	95% Confidence Interval Upper Bound
Kontrol	UJ	-.19000	.19150	.853	-.8202	.4402
	RL	-.37000	.19150	.361	-1.0002	.2602
	KH	-.22000	.19150	.778	-.8502	.4102
	BM	-.17333	.19150	.889	-.8036	.4569
UJ	Kontrol	.19000	.19150	.853	-.4402	.8202
	RL	-.18000	.19150	.875	-.8102	.4502
	KH	-.03000	.19150	1.000	-.6602	.6002
	BM	.01667	.19150	1.000	-.6136	.6469
RL	Kontrol	.37000	.19150	.361	-.2602	1.0002
	UJ	.18000	.19150	.875	-.4502	.8102
	KH	.15000	.19150	.930	-.4802	.7802
	BM	.19667	.19150	.838	-.4336	.8269
KH	Kontrol	.22000	.19150	.778	-.4102	.8502
	UJ	.03000	.19150	1.000	-.6002	.6602
	RL	-.15000	.19150	.930	-.7802	.4802
	BM	.04667	.19150	.999	-.5836	.6769
BM	Kontrol	.17333	.19150	.889	-.4569	.8036
	UJ	-.01667	.19150	1.000	-.6469	.6136
	RL	-.19667	.19150	.838	-.8269	.4336
	KH	-.04667	.19150	.999	-.6769	.5836

*. The mean difference is significant at the 0.05 level.

Homogeneous Subsets

Glikogen_Hati

Tukey HSD[a]

Perlakuan	N	Subset for alpha = 0.05 1
Kontrol	3	5.3800
BM	3	5.5533
UJ	3	5.5700
KH	3	5.6000
RL	3	5.7500
Sig.		.361

Means for groups in homogeneous subsets are displayed.
a. Uses Harmonic Mean Sample Size = 3.000.

Lampiran 13. Hasil analisis ragam kadar glikogen otot

ANOVA

Glikogen_Otot

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.461	4	.115	2.761	.088
Within Groups	.417	10	.042		
Total	.878	14			

Post Hoc Tests

Multiple Comparisons

Dependent Variable: Glikogen_Otot
Tukey HSD

(I) Perlakuan	(J) Perlakuan	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval Lower Bound	95% Confidence Interval Upper Bound
Kontrol	UJ	.41667	.16675	.167	-.1321	.9654
	RL	-.10667	.16675	.965	-.6554	.4421
	KH	.08333	.16675	.986	-.4654	.6321
	BM	.08000	.16675	.988	-.4688	.6288
UJ	Kontrol	-.41667	.16675	.167	-.9654	.1321
	RL	-.52333	.16675	.063	-1.0721	.0254
	KH	-.33333	.16675	.332	-.8821	.2154
	BM	-.33667	.16675	.324	-.8854	.2121
RL	Kontrol	.10667	.16675	.965	-.4421	.6554
	UJ	.52333	.16675	.063	-.0254	1.0721
	KH	.19000	.16675	.783	-.3588	.7388
	BM	.18667	.16675	.793	-.3621	.7354
KH	Kontrol	-.08333	.16675	.986	-.6321	.4654
	UJ	.33333	.16675	.332	-.2154	.8821
	RL	-.19000	.16675	.783	-.7388	.3588
	BM	-.00333	.16675	1.000	-.5521	.5454
BM	Kontrol	-.08000	.16675	.988	-.6288	.4688
	UJ	.33667	.16675	.324	-.2121	.8854
	RL	-.18667	.16675	.793	-.7354	.3621
	KH	.00333	.16675	1.000	-.5454	.5521

*. The mean difference is significant at the 0.05 level.

Homogeneous Subsets

Glikogen_Otot

Tukey HSD[a]

Perlakuan	N	Subset for alpha = 0.05 1
UJ	3	5.0800
KH	3	5.4133
BM	3	5.4167
Kontrol	3	5.4967
RL	3	5.6033
Sig.		.063

Means for groups in homogeneous subsets are displayed.
a. Uses Harmonic Mean Sample Size = 3.000.

Lampiran 14. Hasil analisis ragam kadar protein kasar

ANOVA

Protein_Kasar

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	245.063	4	61.266	46.762	.000
Within Groups	13.101	10	1.310		
Total	258.164	14			

Post Hoc Tests

Multiple Comparisons

Dependent Variable: Protein_Kasar
Tukey HSD

(I) Perlakuan	(J) Perlakuan	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval Lower Bound	95% Confidence Interval Upper Bound
Kontrol	UJ	-10.07000*	.93458	.000	-13.1458	-6.9942
	RL	-3.60333*	.93458	.021	-6.6791	-.5276
	KH	-10.82667*	.93458	.000	-13.9024	-7.7509
	BM	-6.55000*	.93458	.000	-9.6258	-3.4742
UJ	Kontrol	10.07000*	.93458	.000	6.9942	13.1458
	RL	6.46667*	.93458	.000	3.3909	9.5424
	KH	-.75667	.93458	.922	-3.8324	2.3191
	BM	3.52000*	.93458	.024	.4442	6.5958
RL	Kontrol	3.60333*	.93458	.021	.5276	6.6791
	UJ	-6.46667*	.93458	.000	-9.5424	-3.3909
	KH	-7.22333*	.93458	.000	-10.2991	-4.1476
	BM	-2.94667	.93458	.062	-6.0224	.1291
KH	Kontrol	10.82667*	.93458	.000	7.7509	13.9024
	UJ	.75667	.93458	.922	-2.3191	3.8324
	RL	7.22333*	.93458	.000	4.1476	10.2991
	BM	4.27667*	.93458	.007	1.2009	7.3524
BM	Kontrol	6.55000*	.93458	.000	3.4742	9.6258
	UJ	-3.52000*	.93458	.024	-6.5958	-.4442
	RL	2.94667	.93458	.062	-.1291	6.0224
	KH	-4.27667*	.93458	.007	-7.3524	-1.2009

*. The mean difference is significant at the 0.05 level.

Homogeneous Subsets

Protein_Kasar

Tukey HSD[a]

Perlakuan	N	Subset for alpha = 0.05 1	2	3
Kontrol	3	2.7367		
RL	3		6.3400	
BM	3		9.2867	
UJ	3			12.8067
KH	3			13.5633
Sig.		1.000	.062	.922

Means for groups in homogeneous subsets are displayed.
a. Uses Harmonic Mean Sample Size = 3.000.

Lampiran 15. Hasil analisis ragam kadar lemak kasar

ANOVA

Lemak_Kasar

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1823.163	4	455.791	11.790	.001
Within Groups	386.590	10	38.659		
Total	2209.753	14			

Post Hoc Tests

Multiple Comparisons

Dependent Variable: Lemak_Kasar
Tukey HSD

(I) Perlakuan	(J) Perlakuan	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval Lower Bound	95% Confidence Interval Upper Bound
Kontrol	UJ	-28.97000*	5.07668	.001	-45.6778	-12.2622
	RL	-11.26000	5.07668	.248	-27.9678	5.4478
	KH	-28.62333*	5.07668	.002	-45.3311	-11.9156
	BM	-14.13667	5.07668	.109	-30.8444	2.5711
UJ	Kontrol	28.97000*	5.07668	.001	12.2622	45.6778
	RL	17.71000*	5.07668	.037	1.0022	34.4178
	KH	.34667	5.07668	1.000	-16.3611	17.0544
	BM	14.83333	5.07668	.088	-1.8744	31.5411
RL	Kontrol	11.26000	5.07668	.248	-5.4478	27.9678
	UJ	-17.71000*	5.07668	.037	-34.4178	-1.0022
	KH	-17.36333*	5.07668	.041	-34.0711	-.6556
	BM	-2.87667	5.07668	.977	-19.5844	13.8311
KH	Kontrol	28.62333*	5.07668	.002	11.9156	45.3311
	UJ	-.34667	5.07668	1.000	-17.0544	16.3611
	RL	17.36333*	5.07668	.041	.6556	34.0711
	BM	14.48667	5.07668	.098	-2.2211	31.1944
BM	Kontrol	14.13667	5.07668	.109	-2.5711	30.8444
	UJ	-14.83333	5.07668	.088	-31.5411	1.8744
	RL	2.87667	5.07668	.977	-13.8311	19.5844
	KH	-14.48667	5.07668	.098	-31.1944	2.2211

*. The mean difference is significant at the 0.05 level.

Homogeneous Subsets

Lemak_Kasar

Tukey HSD[a]

Perlakuan	N	Subset for alpha = 0.05 1	2
Kontrol	3	12.0100	
RL	3	23.2700	
BM	3	26.1467	26.1467
KH	3		40.6333
UJ	3		40.9800
Sig.		.109	.088

Means for groups in homogeneous subsets are displayed.
a. Uses Harmonic Mean Sample Size = 3.000.

Lampiran 16. Hasil analisis ragam kadar lemak kasar

ANOVA

Lemak_Kasar

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1823.163	4	455.791	11.790	.001
Within Groups	386.590	10	38.659		
Total	2209.753	14			

Post Hoc Tests

Multiple Comparisons

Dependent Variable: Lemak_Kasar
Tukey HSD

(I) Perlakuan	(J) Perlakuan	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval Lower Bound	95% Confidence Interval Upper Bound
Kontrol	UJ	-28.97000*	5.07668	.001	-45.6778	-12.2622
	RL	-11.26000	5.07668	.248	-27.9678	5.4478
	KH	-28.62333*	5.07668	.002	-45.3311	-11.9156
	BM	-14.13667	5.07668	.109	-30.8444	2.5711
UJ	Kontrol	28.97000*	5.07668	.001	12.2622	45.6778
	RL	17.71000*	5.07668	.037	1.0022	34.4178
	KH	.34667	5.07668	1.000	-16.3611	17.0544
	BM	14.83333	5.07668	.088	-1.8744	31.5411
RL	Kontrol	11.26000	5.07668	.248	-5.4478	27.9678
	UJ	-17.71000*	5.07668	.037	-34.4178	-1.0022
	KH	-17.36333*	5.07668	.041	-34.0711	-.6556
	BM	-2.87667	5.07668	.977	-19.5844	13.8311
KH	Kontrol	28.62333*	5.07668	.002	11.9156	45.3311
	UJ	-.34667	5.07668	1.000	-17.0544	16.3611
	RL	17.36333*	5.07668	.041	.6556	34.0711
	BM	14.48667	5.07668	.098	-2.2211	31.1944
BM	Kontrol	14.13667	5.07668	.109	-2.5711	30.8444
	UJ	-14.83333	5.07668	.088	-31.5411	1.8744
	RL	2.87667	5.07668	.977	-13.8311	19.5844
	KH	-14.48667	5.07668	.098	-31.1944	2.2211

*. The mean difference is significant at the 0.05 level.

Homogeneous Subsets

Lemak_Kasar

Tukey HSD[a]

Perlakuan	N	Subset for alpha = 0.05 1	2
Kontrol	3	12.0100	
RL	3	23.2700	
BM	3	26.1467	26.1467
KH	3		40.6333
UJ	3		40.9800
Sig.		.109	.088

Means for groups in homogeneous subsets are displayed.
a. Uses Harmonic Mean Sample Size = 3.000.

Lampiran 17. Hasil analisis ragam kadar abu

ANOVA

Abu

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	3489.726	4	872.431	47.201	.000
Within Groups	184.834	10	18.483		
Total	3674.560	14			

Post Hoc Tests

Multiple Comparisons

Dependent Variable: Abu
Tukey HSD

(I) Perlakuan	(J) Perlakuan	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval Lower Bound	95% Confidence Interval Upper Bound
Kontrol	UJ	38.52000*	3.51031	.000	26.9673	50.0727
	RL	14.69667*	3.51031	.013	3.1440	26.2494
	KH	41.04667*	3.51031	.000	29.4940	52.5994
	BM	23.39000*	3.51031	.000	11.8373	34.9427
UJ	Kontrol	-38.52000*	3.51031	.000	-50.0727	-26.9673
	RL	-23.82333*	3.51031	.000	-35.3760	-12.2706
	KH	2.52667	3.51031	.947	-9.0260	14.0794
	BM	-15.13000*	3.51031	.010	-26.6827	-3.5773
RL	Kontrol	-14.69667*	3.51031	.013	-26.2494	-3.1440
	UJ	23.82333*	3.51031	.000	12.2706	35.3760
	KH	26.35000*	3.51031	.000	14.7973	37.9027
	BM	8.69333	3.51031	.172	-2.8594	20.2460
KH	Kontrol	-41.04667*	3.51031	.000	-52.5994	-29.4940
	UJ	-2.52667	3.51031	.947	-14.0794	9.0260
	RL	-26.35000*	3.51031	.000	-37.9027	-14.7973
	BM	-17.65667*	3.51031	.004	-29.2094	-6.1040
BM	Kontrol	-23.39000*	3.51031	.000	-34.9427	-11.8373
	UJ	15.13000*	3.51031	.010	3.5773	26.6827
	RL	-8.69333	3.51031	.172	-20.2460	2.8594
	KH	17.65667*	3.51031	.004	6.1040	29.2094

*. The mean difference is significant at the 0.05 level.

Homogeneous Subsets

Abu

Tukey HSD[a]

Perlakuan	N	Subset for alpha = 0.05 1	2	3
KH	3	-54.9467		
UJ	3	-52.4200		
BM	3		-37.2900	
RL	3		-28.5967	
Kontrol	3			-13.9000
Sig.		.947	.172	1.000

Means for groups in homogeneous subsets are displayed.
a. Uses Harmonic Mean Sample Size = 3.000.

Lampiran 18. Hasil analisis ragam kadar serat kasar

ANOVA

Serat_Kasar

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2108.861	4	527.215	2.539	.106
Within Groups	2076.195	10	207.619		
Total	4185.056	14			

Post Hoc Tests

Multiple Comparisons

Dependent Variable: Serat_Kasar
Tukey HSD

(I) Perlakuan	(J) Perlakuan	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval Lower Bound	95% Confidence Interval Upper Bound
Kontrol	UJ	-31.88333	11.76491	.122	-70.6026	6.8359
	RL	-24.41667	11.76491	.301	-63.1359	14.3026
	KH	-32.75000	11.76491	.109	-71.4693	5.9693
	BM	-22.69000	11.76491	.363	-61.4093	16.0293
UJ	Kontrol	31.88333	11.76491	.122	-6.8359	70.6026
	RL	7.46667	11.76491	.966	-31.2526	46.1859
	KH	-.86667	11.76491	1.000	-39.5859	37.8526
	BM	9.19333	11.76491	.930	-29.5259	47.9126
RL	Kontrol	24.41667	11.76491	.301	-14.3026	63.1359
	UJ	-7.46667	11.76491	.966	-46.1859	31.2526
	KH	-8.33333	11.76491	.950	-47.0526	30.3859
	BM	1.72667	11.76491	1.000	-36.9926	40.4459
KH	Kontrol	32.75000	11.76491	.109	-5.9693	71.4693
	UJ	.86667	11.76491	1.000	-37.8526	39.5859
	RL	8.33333	11.76491	.950	-30.3859	47.0526
	BM	10.06000	11.76491	.907	-28.6593	48.7793
BM	Kontrol	22.69000	11.76491	.363	-16.0293	61.4093
	UJ	-9.19333	11.76491	.930	-47.9126	29.5259
	RL	-1.72667	11.76491	1.000	-40.4459	36.9926
	KH	-10.06000	11.76491	.907	-48.7793	28.6593

*. The mean difference is significant at the 0.05 level.

Homogeneous Subsets

Serat_Kasar

Tukey HSD[a]

Perlakuan	N	Subset for alpha = 0.05 1
Kontrol	3	-.2833
BM	3	22.4067
RL	3	24.1333
UJ	3	31.6000
KH	3	32.4667
Sig.		.109

Means for groups in homogeneous subsets are displayed.
a. Uses Harmonic Mean Sample Size = 3.000.

Lampiran 19. Hasil analisis ragam kadar BETN

ANOVA

BETN

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	369.124	4	92.281	.414	.795
Within Groups	2228.543	10	222.854		
Total	2597.667	14			

Post Hoc Tests

Multiple Comparisons

Dependent Variable: BETN
Tukey HSD

(I) Perlakuan	(J) Perlakuan	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval Lower Bound	95% Confidence Interval Upper Bound
Kontrol	UJ	-2.57667	12.18891	.999	-42.6914	37.5380
	RL	.37000	12.18891	1.000	-39.7447	40.4847
	KH	-13.26000	12.18891	.809	-53.3747	26.8547
	BM	-4.41667	12.18891	.996	-44.5314	35.6980
UJ	Kontrol	2.57667	12.18891	.999	-37.5380	42.6914
	RL	2.94667	12.18891	.999	-37.1680	43.0614
	KH	-10.68333	12.18891	.899	-50.7980	29.4314
	BM	-1.84000	12.18891	1.000	-41.9547	38.2747
RL	Kontrol	-.37000	12.18891	1.000	-40.4847	39.7447
	UJ	-2.94667	12.18891	.999	-43.0614	37.1680
	KH	-13.63000	12.18891	.794	-53.7447	26.4847
	BM	-4.78667	12.18891	.994	-44.9014	35.3280
KH	Kontrol	13.26000	12.18891	.809	-26.8547	53.3747
	UJ	10.68333	12.18891	.899	-29.4314	50.7980
	RL	13.63000	12.18891	.794	-26.4847	53.7447
	BM	8.84333	12.18891	.946	-31.2714	48.9580
BM	Kontrol	4.41667	12.18891	.996	-35.6980	44.5314
	UJ	1.84000	12.18891	1.000	-38.2747	41.9547
	RL	4.78667	12.18891	.994	-35.3280	44.9014
	KH	-8.84333	12.18891	.946	-48.9580	31.2714

*. The mean difference is significant at the 0.05 level.

Homogeneous Subsets

BETN

Tukey HSD[a]

Perlakuan	N	Subset for alpha = 0.05 1
RL	3	30.1967
Kontrol	3	30.5667
UJ	3	33.1433
BM	3	34.9833
KH	3	43.8267
Sig.		.794

Means for groups in homogeneous subsets are displayed.
a. Uses Harmonic Mean Sample Size = 3.000.

Lampiran 20. Penjabaran analisis proksimat

PROSEDUR ANALISIS PROKSIMAT

ANALISIS KADAR AIR

1. Cawan porselin yang telah bersih diovenkan pada suhu 105°C selama 2 jam
2. Dinginkan dalam eksikator selama ½ jam kemudian ditimbang (a gram)
3. Kedalam cawan porselin ditimbang ± 1 gram contoh (b gram)
4. Ovenkan pada suhu 105°C selama 8 jam atau biarkan bermalam
5. Keluarkan dari oven dan dinginkan dalam eksikator selama ½ jam kemudian timbang (c gram)

Perhitungan :

% Bahan Kering $= \frac{C - A}{B} \times 100\%$

% Air = 100% - % Bahan Kering

ANALISIS KADAR ABU

1. Cawan porselin bersama contoh dalam penetapan kadar air dimasukkan kedalam tanur listrik
2. Suhu tanur diatur hingga 600°C, kemudian dibiarkan 3 jam sampai menjadi abu (untuk mempercepat proses pengabuan sekali-kali tanur dibuka)
3. Biarkan agak dingin kemudian masukkan kedalam eksikator selama ½ jam
4. Kemudian timbang (d gram)

Perhitungan :

% Abu $= \frac{D - A}{B - A} \times 100\%$

Keterangan : Disimpan untuk penetapan kadar mineral

ANALISIS SERAT KASAR

1. Timbang ± 0,3 gram sampel kedalam tabung reaksi 50 ml
2. Tambahkan 30 ml H_2SO_4 0,3 N
3. Refluks (panaskan) selama 30 menit
4. Tambahkan 15 NaOH 1,5 N
5. Refluks selama 30 menit
6. Saring kedalam sintered glass No. 1 sambil dihisap menggunakan pompa vacuum
7. Cuci berturut-turut dengan 40 ml air panas, 40 ml H2SO4, 0,3 N, 40 ml air panas dan 10 ml aseton
8. Keringkan dalam oven 8 jam atau dibiarkan bermalam
9. Dinginkan dalam eksikator selama ½ jam kemudia timbang (a gram)
10. Abukan dalam tanur listrik selama 3 jam pada suhu 500°C
11. Biarkan agak dingin kemudian masukkan dalam eksikator selama ½ jam kemudian

timbang

Perhitungan :

% Serat Kasar $= \frac{A-B}{Berat\ Sampel} + \times 100\%$

ANALISIS PROTEIN KASAR

1. Timbang dengan teliti ± 1 gram sampel
2. Masukkan kedalam labu khjedhal
3. Tambahkan ± 1 gram campuran selenium dan 20 ml H_2SO_4 pekat
4. Labu khjedhal bersama isinya digoyangkan sampai semua sampel terbasahi dengan H_2SO_4
5. Destruksi dalam lemari asam sampai jernih
6. Biarkan dingin kemudian impitkan hingga tanda garis dengan air suling lalu kocok hingga homogen
7. Biarkan dingin kemudian impitkan hingga tanda garis dengan air suling lalu kocok hingga homogeny
8. Siapkan penampungan yang terdiri dari 10 ml H_3BO_3 2% + 4 tetes larutan indikator campuran dalam Erlenmeyer
9. Pipit 5 ml larutan sampel kedalam labu destilasi
10. Tambahkan 10 ml NaOH 30% dan 100 ml air suling
11. Kemudian suling hingga volume penampung menjadi ± 50 ml
12. Bilas ujung penyuling dengan air suling kemudian penampung bersama isinya dititrasi dengan larutan H_2SO_4 0,0171 N

Perhitungan :

% Protein Kasar $= \frac{V \times N \times 14 \times 6{,}25 \times P}{Berat\ sampel\ (mgr)} \times 100\%$

Keterangan :

V = Volume Titrasi Contoh

N = Normalitas Larutan H_2SO_4

P = Faktor Pengenceran

ANALISIS LEMAK KASAR

1. Timbang ± 1 gram sampel
2. Masukkan kedalam tabung reaksi berskala 15 ml
3. Tambahkan chloroform mendekati skala 10 ml
4. Tutup rapat kemudian kocok dan biarkan bermalam
5. Himpitkan hingga skala 10 ml dengan chloroform
6. Lalu kocok kembali
7. Saring dengan kertas saring kedalam tabung reaksi
8. Pipit 5 ml kedalam cawan yang telah diketahui beratnya (a gram)

9. Ovenkan pada suhu 100°C selama 4 jam
10. Keluarkan lalu masukkan ke dalam eksikator ½ jam
11. Kemudian timbang (b gram)

Perhitungan :

% Kadar Lemak $= \frac{P \times (b-a)}{Berat\ Sampel} \times 100\%$

P = Pengenceran (10/5)

KADAR TOTAL GULA

Cara Kerja

- Timbang seksama ± 5 ml sampel ke labu ukur 100 ml
- Tambahkan 50 ml aquades HCl pekat 5 ml, panaskan suhu 68-70° selama 10 menit
- Dinginkan dan netralkan dengan larutan NaOH 30% (dengan lakmus atau fenoltalein)
- Impitkan hingga tanda garis 100 ml
- Pipet 10 ml saringan ke dalam Erlenmeyer 500 ml, tambahkan 25 ml larutan luff (dengan pipet) dan beberapa butir batu didih serta 15 ml air suling
- Panaskan campuran tersebut dengan nyala yang tetap. Usahakan agar larutan dapat mendidih dalam waktu 3 menit (gunakan stopwatch), didihkan terus selama tepat 10 menit (dihitung dari saat mulai mendidih dan gunakan stopwatch) kemudian dengan cepat dinginkan dalam bak berisi es
- Setelah dingin tambahkan 15 ml larutan KI 20% dan 25 ml H_2SO_4 25% perlahan-lahan
- Titar secepatnya dengan larutan thio 0,1 N (gunakan penunjuk larutan kanji 0,5%)
- Kerjakan juga blanko

Perhitungan :

% Total Gula $= \frac{P \times V \times mg\ Glukosa}{mg\ sampel} \times 100\%$

KADAR PADATAN TERLARUT

1. Pipet 50 ml larutan sampel kedalam cawan porselin yang telah diketahui beratnya
2. Ovenkan selama 6 jam
3. Keluarkan cawan dan dinginkan dalam eksikator
4. Timbang cawan yang telah dingin

Perhitungan :

% Padatan Terlarut $= \frac{Cawan\ berisi\ sampel\ setelah\ oven - cawan\ kosong}{Berat\ Sampel} \times 100\%$

KADAR NaCl

1. Pipet 20 ml sampel kedalam Erlenmeyer
2. Tambahkan 1 ml larutan potassium kromat 5%
3. Titrasi dengan larutan $AgNO_3$ 0,1 N
4. Titik akhir titrasi apabila timbul warna orange atau jingga pertama

Perhitungan :

% NaCl $= \frac{V \times N \times 58{,}4}{mg\ sampel} \times 100\%$

KADAR ASAM ASETAT

1. Pipet 20 ml sampel kedalam Erlenmeyer 250 ml
2. Tambahkan 5 tetes indikator PP
3. Titrasi dengan NaOH 0,1 N hingga berwarna merah

Perhitungan :

% Asam Asetat $= \frac{V \times N \times 40}{mg\ sampel} \times 100\%$

ANALISIS KADAR KARBOHIDRAT

- Sampel ditimbang dengan seksama ± 5 gram kedalam Erlenmeyer 500 ml
- HCl 3% ditambahkan sebanyak 200 ml dan didihkan selama 3 jam dengan pendingin tegak
- Larutan didinginkan dan dinetralkan dengan larutan NaOH 30% (uji kualitatif dengan kertas lakmus atau Phenolphthalein dan tambahkan sedikit CH_3COOH 3% agar suasana larutan agak sedikit asam
- Pindahkan isinya kedalam labu ukur 500 ml, dan aquades ditambahkan sampai tanda batas, kemudian saring
- Filtrate dipipet sebanyak 10 ml kedalam Erlenmeyer 500 ml dan ditambahkan larutan luff school sebanyak 25 ml, kemudian ditambahkan air suling sebanyak 15 ml dan beberapa batu didih
- Campuran tersebut dipanaskan dengan nyala yang tetap. Diusahakan agar larutan dapat mendidih dalam waktu 3 menit (menggunakan stopwatch) didihkan terus sampai 10 menit
- Dinginkan es batu dalam bak
- Setelah dingin ditambahkan Kl 20% sebanyak 15 ml dan H2SO4 25% sebanyak 25 ml perlahan-lahan
- Titrasi secepatnya dengan larutan $Na_2S_2O_3$ 0,1 N (gunakan indikator amilum 0,5%)
- Kerjakan blanko