DAFTAR PUSTAKA

Adubofuor, J., Amoah, I., & Osei-Bonsu, I. (2016). Sensory and physicochemical properties of pasteurized coconut water from two varieties of coconut. *Food Science and Quality Management*, *54*(October), 26–32. www.iiste.org

Agustina, R., Rahma, S., & Chrismania Sandhira, A. (2022). Karakteristik Trayek pH Indikator Alami dan Aplikasinya pada Titrasi Asam dan Basa. *Bivalen: Chemical Studies Journal*, *5*(2), 51–56.

Ara, A., Sarkar, S., Akter, A., & Roy, J. (2023). Evaluation of quality characteristics of coconut drinks during refrigerated storage. *Journal of Agriculture and Food Research*, *13*(4), 100661.

Arda, G., & Kencana, D. (2015). Gases concentration modeling of closed packaging of fresh Oyster mushrooms (Pleurotus ostreatus). *Jurnal Agrotekno*, *17*(2), 35–34.

Asaad, A. N., Jailani, F., Roha, S., & Mutalib, A. (2022). Physicochemical properties and sensory acceptability of different varieties of coconut water and flesh. *Scientific Research Journal*, *19*(1), 75–89.

Aswir, & Misbah, H. (2018). Uji Total Asam Dan Organoleptik Yoghurt Katuk. *Photosynthetica*, *2*(1), 1–13.

Ayu, A., & Shovitri, M. (2013). *Kemampuan Isolat Bacillus sp. dalam Mendegradasi Limbah Tangki Septik*. *2*(1), 7–11.

Azhdarpoor, A., Salehi, N., Heidari, H., Sarmadipour, M., & Mahmoudian, H. (2019). Relationship between Turbidity and Microbial Load of Water in Salman Farsi Dam Reservoir. *Journal of Environmental Pollution and Management*, *2*(2), 2–5.

Chen, S., Brahma, S., Mackay, J., Cao, C., & Aliakbarian, B. (2020). The role of smart packaging system in food supply chain. *Journal of Food Science*, *85*(3), 517–525.

Dari, D. W., Alfiatul, L., & Junita, D. (2021). Karakteristik Kimia Dan Derajat Keasaman Minuman Sari Buah Pedada (Sonneratia Sp.) Dengan Penambahan Natrium Benzoat. *Jurnal Teknologi Pangan Dan Gizi*, *20*(1), 35–44.

Devirizanty, D., Nurmalawati, S., & Hartanto, C. (2021). Perbandingan Unjuk Kinerja Berbagai Tipe pH Meter Digital Di Laboratorium Kimia. *Jurnal Pengelolaan Laboratorium Sains Dan Teknologi*, *1*(1), 1–9.

Dirpan, A., Djalal, M., & Ainani, A. F. (2022). A Simple Combination of Active and Intelligent Packaging Based on Garlic Extract and Indicator Solution in Extending and Monitoring the Meat Quality Stored at Cold Temperature. *Foods*, *11*(10).

Ekasari, C. P., & Widyarti, S. (2019). The physicochemical properties comparison of the natural coconut water and the packaging coconut water. *IOP Conference Series: Earth and Environmental Science*, *391*(1).

Ibrahim, S. (2020). Potensi Air Kelapa Muda Dalam Meningkatkan Kadar Kalium. *Indonesian Journal of Nursing and Health Sciences*, *1*(1), 37–48.

Ikko, A. P., Tamrin, & Hermanto. (2019). Pengaruh Suhu Dan Lama Pemanasan Terhadap Karakteristik Fisik, Kimia, Dan Penilaian Organoleptik Air Kelapa Kemasan. *J. Sains Dan Teknologi Pangan*, *4*(2), 2030–2040.

Ismayalomi, S., & Rahardjo, B. (2019). *Kajian Eksperimental Penambahan Plastik Pet (Polyethylene Terephtalate) Dan Asbuton Lga (Lawele Granular Asphalt) Pada*

Campuran Aspal. *24*(1), 1–14.

Isnawati, & Trimulyono, G. (2018). Temperature range and degree of acidity growth of isolate of indigenous bacteria on fermented feed "fermege." *Journal of Physics: Conference Series*, *953*(1), 0–5.

Jefriyanto, W., Shein, M. M., Rajak, A., & Djamal, M. (2017). *PROSIDING SNIPS 2017 Rancang Bangun Kolorimeter Berbasis Mikrokontroler Arduino Uno*. 87–94.

Khosuma, M. (2023). *Fabrication of CO 2 Detection Indicator to Monitor the Freshness of Coconut Water*: Universitas Hasnuddin

Laili, N. H., Abida, I. W., & Junaedi, A. S. (2022). Nilai Total Plate Count (TPC) Dan Jumlah Jenis Bakteri Air Limbah Cucian Garam (Bittern) Dari Tambak Garam Desa Banyuajuh Kecamatan Kamal Kabupaten Bangkalan. *Juvenil:Jurnal Ilmiah Kelautan Dan Perikanan*, *3*(1), 26–31.

Lee, P. R., Boo, C. X., & Liu, S. Q. (2013). Fermentation of coconut water by probiotic strains Lactobacillus acidophilus L10 and Lactobacillus casei L26. *Annals of Microbiology*, *63*(4), 1441–1450.

Li, X., Chen, F., Wang, X., Sun, L., Guo, L., Xiong, Y., Wang, Y., Zhou, H., Jia, S., Yang, F., & Ni, K. (2021). Impacts of Low Temperature and Ensiling Period on the Bacterial Community of Oat Silage by SMRT. *MDPI: Microorganisms*, *9*(2), 1–13.

Liang, C., Liu, L., Liu, J., Aihaiti, A., Tang, X., Liu, Y., & Fish, H. (2023). *New Insights on Low-Temperature Fermentation for Food*. 1–17.

Loppies, C. R. M., Apituley, D. A. N., Sormin, R. B. D., & Setha, B. (2021). Kandungan Mioglobin Ikan Tuna (Thunnus Albacares) Dengan Pemakaian Karbon Monoksida Dan Filter Smoke Selama Penyimpanan Beku. *Inasua: Jurnal Teknologi Hasil Perikanan*, *1*(1), 12–20.

Macena, M. W., Carvalho, R., Cruz-Lopes, L. P., & Guiné, R. P. F. (2021). Plastic food packaging: Perceptions and attitudes of portuguese consumers about environmental impact and recycling. *Sustainability (Switzerland)*, *13*(17).

Matsui, K. N., Granado, L. M., Oliveira, P. V. De, & Tadini, C. C. (2007). Peroxidase and polyphenol oxidase thermal inactivation by microwaves in green coconut water simulated solutions. *Swiss Society of Food Science and Technology*, *40*, 852–859.

Moazami Goodarzi, M., Moradi, M., Tajik, H., Forough, M., Ezati, P., & Kuswandi, B. (2020). Development of an easy-to-use colorimetric pH label with starch and carrot anthocyanins for milk shelf life assessment. *International Journal of Biological Macromolecules*, *153*, 240–247.

Morsy, M. K., Zór, K., Kostesha, N., Alstrøm, T. S., Heiskanen, A., El-Tanahi, H., Sharoba, A., Papkovsky, D., Larsen, J., Khalaf, H., Jakobsen, M. H., & Emnéus, J. (2016). Development and validation of a colorimetric sensor array for fish spoilage monitoring. *Food Control*, *60*, 346–352.

Nasatto, P. L., Pignon, F., Silveira, J. L. M., Duarte, M. E. R., Noseda, M. D., & Rinaudo, M. (2015). Methylcellulose, a cellulose derivative with original physical properties and extended applications. *Polymers*, *7*(5), 777–803.

Noiwan, D., Suppakul, P., & Rachtanapun, P. (2022). Preparation of Methylcellulose Film-Based CO2 Indicator for Monitoring the Ripeness Quality of Mango Fruit cv. Nam Dok Mai Si Thong. *Polymers*, *14*(17).

Obaidi, A. Al, Karaca, I. M., Ayhan, Z., Haskaraca, G., & Gultekin, E. (2022). Fabrication and validation of CO2-sensitive indicator to monitor the freshness of poultry meat. *Food Packaging and Shelf Life*, *34*(August), 100930.

Okatama, I. (2016). Analisa Peleburan Limbah Plastik Jenis PET Menjadi Biji Plastik Melalui Pengujian Alat Peleburan Plastik. *Jurnal Teknik Mesin*, *05*(3), 109–113.

Pambudi, A., Farid, M., & Nurdiansah, H. (2017). Analisa Morfologi dan Spektroskopi Infra Merah Serat Bambu Betung (Dendrocalamus Asper) Hasil Proses Alkalisasi Sebagai Penguat Komposit Absorbsi Suara. *Jurnal Teknik ITS*, *6*(2), 441–444.

Parmar, P. T., Singh, A. K., & Borad, S. G. (2021). Coconut (Cocos nucifera). In A. Goyal (Ed.), *Oilseed: Healthy Attributes and Food Applications* (pp. 163–189). Springer Singapore.

Păusescu, J., Dreavă, D.-M., Bîtcan, I., Argetoianu, R., Dăescu, D., & Medeleanu, M. (2022). Bio-Based pH Indicator Films for Intelligent Food. *Polymers*.

Puligundla, P., Jung, J., & Ko, S. (2012). Carbon dioxide sensors for intelligent food packaging applications. *Food Control*, *25*(1), 328–333.

Rahmidar, L., Wahidianiawati, S., & Sudiarti, T. (2018). Pembuatan dan Karakterisasi Metil Selulosa dari Bonggol dan Kulit Nanas (Ananas comocus). *Jurnal Pendidikan Dan Ilmu Kimia*, *2*(1), 88–96.

Rinidar, & Isa, M. (2017). *Biokimia Dasar: Pencernaan dan Absorsi Makanan*. Syiah Kuala University press.

Rismaya, R., Syamsir, E., Nurtama, B., & Tohyeng, N. (2022). *Effects of water addition and baking time on the production process optimization of pumpkin muffins : Pilot plant study*. *5*(2), 183–207.

Rittershaus, E. S. C., Baek, S. H., & Sassetti, C. M. (2013). The normalcy of dormancy: Common themes in microbial quiescence. *Cell Host and Microbe*, *13*(6), 643–651.

Rivaldi, S., Yunus, Y., & Munawar, A. A. (2019). Prediksi Kadar Total Padatan Terlarut (TPT) dan Vitamin C Buah Mangga Arumanis *(Mangifera indica L)* Menggunakan Near Infrared Spectroscopy (NIRS) dengan Metode Partial Least Square (PLS) (Prediction of Soluble Solids Content (SSC) and Vitamin C. *Jurnal Ilmiah Mahasiswa Pertanian*, *4*(2), 349–358.

Sanganamoni, S., & Pavuluri, S. R. (2017). Effect of Thermal treatment on some physico-chemical properties of tender coconut water. *International Journal of Chemical Studie*, *5*(4), 2054–2058.

Sari, N. W., Fajri, M., Terpadu, L., Unggul, U. E., Barat, J., & Jeruk, K. (2018). Analisis Fitokimia Dan Gugus Fungsi Dari Ekstrak Etanol Pisang P. *Indonesian Journal of Biotechnology and Biodiversity*, *2*(1), 30–34.

Sharma, R., Garg, P., Kumar, P., Bhatia, S. K., & Kulshrestha, S. (2020). Microbial Fermentation and Its Role in Quality Improvement of Fermented Foods. *MDPI: Fermentation*, *3*(1), 1–20.

Suryani, Y., & Taupiqurrahman, O. (2021). *Mikrobiologi Dasar* (A. Fadillah (ed.)). LP2M UIN SGD Bandung.

Tan, T., Cheng, L., Bhat, R., Rusul, G., & Easa, A. M. (2014). Composition , physicochemical properties and thermal inactivation kinetics of polyphenol oxidase and peroxidase from coconut (Cocos nucifera) water obtained from immature , mature and overly-mature

coconut. *Food Chemistry*, *142*, 121–128.

Wulandari, D. A., & Yulkifli. (2018). Studi Awal Rancang Bangun Colorimeter Sebagai Pendeteksi Pada Pewarna Makanan Menggunakan Sensor Photodioda. *Pillar of Physics*, *11*(2), 81–87.

Yin, C. S. (2016). *Coconut Hanbook* (S. Liu (ed.)). Tetra Oak South East Asia.

Yunus, Y., & Zubaidah, E. (2015). Pengaruh Konsentrasi Sukrosa Dan Lama Fermentasi Terhadap Viabilitas L . Casei Selama Penyimpanan Beku Velva Pisang Ambon. *Jurnal Pangan Dan Agroindustri*, *3*(2), 303–312.

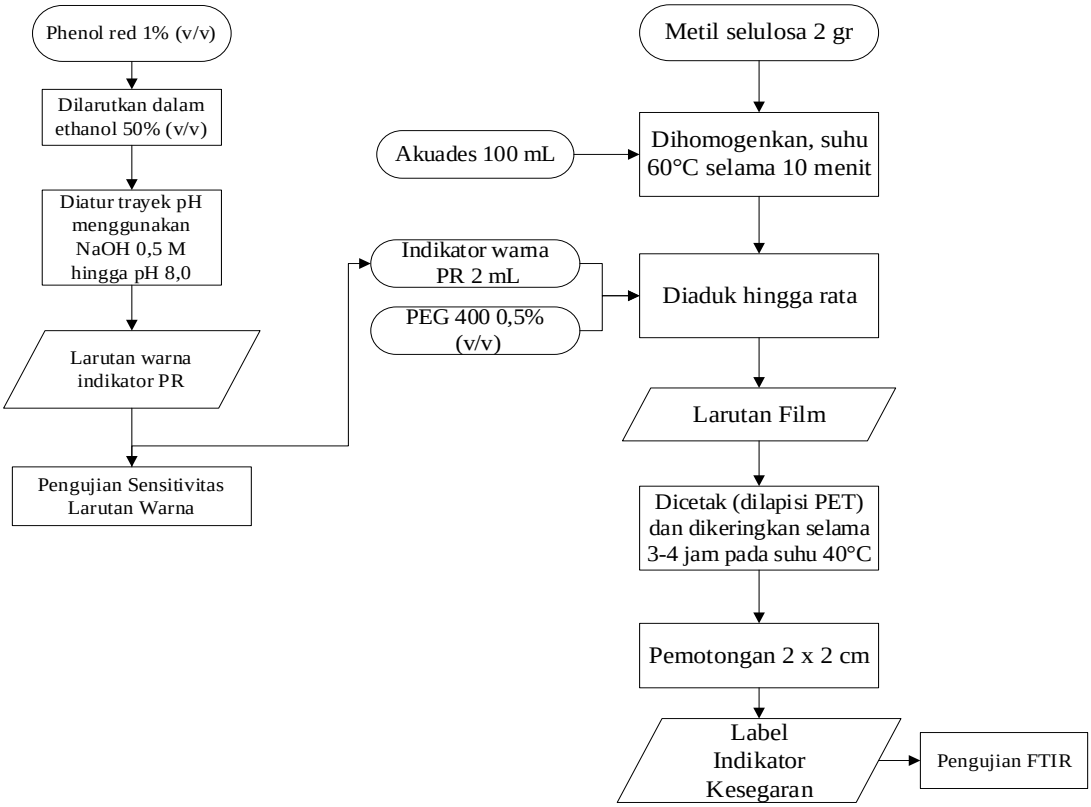
Zhang, G., Chen, W., Chen, W., & Chen, H. (2018). Improving the quality of matured coconut (Cocos nucifera Linn.) water by low alcoholic fermentation with Saccharomyces cerevisiae: antioxidant and volatile profiles. *Journal of Food Science and Technology*, *55*(3), 964–976.

Zhang, Y., & Lim, L. (2017). Colorimetric array indicator for NH3 and CO2 detection. *Sensors & Actuators: B. Chemical*, *23239*, 11.

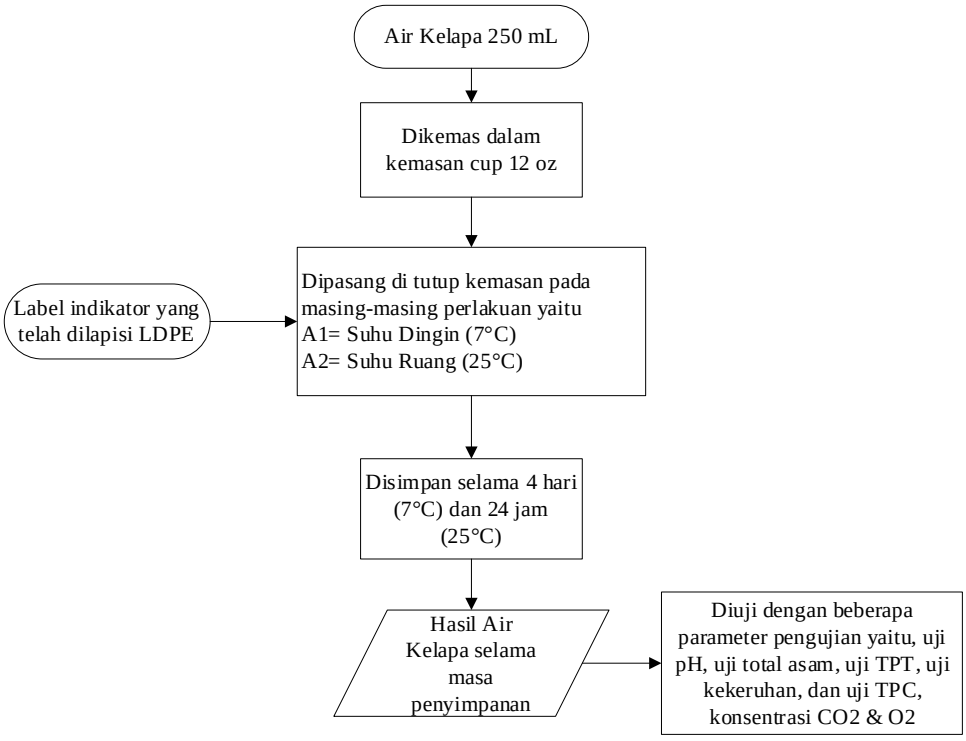
LAMPIRAN

Lampiran 1. Diagram Alir

1. Pembuatan Larutan Indikator Warna dan Label Indikator Kesegaran



2. Pengaplikasian Label Indikator pada Air Kelapa



Lampiran 2. Hasil Pengujian pH

Waktu (Hari)	pH (Suhu Dingin)			Rata-rata
	A1	A2	A3	
0	5,35	5,32	5,31	5,33
1	5,31	5,32	5,31	5,31
2	5,27	5,25	5,24	5,25
3	4,38	4,39	4,4	4,39
4	4,13	4,08	4,09	4,10

Waktu (Jam)	pH (Suhu Ruang)			Rata-rata
	A1	A2	A3	
0	5,23	5,22	5,22	5,22
4	5,22	5,23	5,22	5,22
8	5,19	5,20	5,21	5,20
12	5,17	5,16	5,15	5,16
16	5,15	5,15	5,14	5,14
20	5,10	5,10	5,07	5,09
24	4,65	4,63	4,64	4,64

Lampiran 3. Hasil Analisis Sidik Ragam dan Uji Lanjut DUNCAN Parameter PH

ANOVA

pH

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	4.081	4	1.020	4372.500	.000
Within Groups	.002	10	.000		
Total	4.083	14			

pH

Duncan[a]

		Subset for alpha = 0.05			
Penyimpanan	N	1	2	3	4
Hari ke-4	3	4.1000			
Hari ke-3	3		4.3900		
Hari ke-2	3			5.2533	
Hari ke-0	3				5.3100
Hari ke-1	3				5.3133
Sig.		1.000	1.000	1.000	.795

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

ANOVA

pH

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.799	6	.133	232.903	.000
Within Groups	.008	14	.001		
Total	.807	20			

pH

Duncan[a]

		Subset for alpha = 0.05					
Penyimpanan	N	1	2	3	4	5	6
24 Jam	3	4.6400					
20 Jam	3		5.0900				
16 Jam	3			5.1467			
12 Jam	3			5.1600	5.1600		
8 Jam	3				5.2000	5.2000	
4 Jam	3					5.2233	5.2233
0 Jam	3						5.2533
Sig.		1.000	1.000	.506	.060	.252	.147

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

Lampiran 4. Hasil Pengujian Total Asam

Waktu (Hari)	**Total Asam (Suhu Dingin)**			**Rata-rata**
	A1	**A2**	**A3**	
0	0,15	0,10	0,10	0,12
1	0,06	0,09	0,08	0,08
2	0,09	0,10	0,09	0,09
3	0,29	0,19	0,26	0,25
4	0,29	0,29	0,26	0,28

Waktu (Jam)	**Total Asam (Suhu Ruang)**			**Rata-rata**
	A1	**A2**	**A3**	
0	0,10	0,11	0,11	0,11
4	0,12	0,11	0,11	0,11
8	0,11	0,11	0,11	0,11
12	0,17	0,11	0,13	0,14
16	0,19	0,15	0,14	0,16

20	0,21	0,20	0,20	0,20
24	0,27	0,26	0,28	0,27

Lampiran 5. Hasil Analisis Sidik Ragam dan Uji Lanjut DUNCAN Parameter Total Asam

ANOVA

TAT

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.105	4	.026	32.674	.000
Within Groups	.008	10	.001		
Total	.113	14			

TAT

Duncan[a]

		Subset for alpha = 0.05	
Penyimpanan	N	1	2
Hari ke-1	3	.0767	
Hari ke-2	3	.0933	
Hari ke-0	3	.1167	
Hari ke-3	3		.2467
Hari ke-4	3		.2800
Sig.		.130	.181

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

ANOVA

Total_Asam

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.066	6	.011	41.976	.000
Within Groups	.004	14	.000		
Total	.070	20			

Total_Asam

Duncan[a]

Penyimpanan	N	Subset for alpha = 0.05			
		1	2	3	4
0 Jam	3	.1067			
8 Jam	3	.1100			
4 Jam	3	.1133			
12 Jam	3	.1367	.1367		
16 Jam	3		.1600		
20 Jam	3			.2033	
24 Jam	3				.2700
Sig.		.054	.099	1.000	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

Lampiran 6. Hasil Pengujian Total Padatan Terlarut

Waktu (Hari)	TPT (Suhu Dingin)			Rata-rata
	A1	A2	A3	
0	6,1	6,1	6,1	6,1
1	5,5	5,7	5,5	5,566666667
2	5,4	5,4	5,3	5,366666667
3	4,8	5,3	5,3	5,1333333
4	5,3	5,3	5,3	5,3

Waktu (Jam)	TPT (Suhu Ruang)			Rata-rata
	A1	A2	A3	
0	5,4	5,4	5,5	5,433333
4	5,4	5,4	5,4	5,4
8	5,3	5,4	5,4	5,366667
12	5,3	5,35	5,4	5,35
16	5,4	5,1	5,4	5,3
20	5,2	5,2	5,3	5,233333
24	5,1	5,1	5,2	5,133333

Lampiran 7. Hasil Analisis Sidik Ragam dan Uji Lanjut DUNCAN Parameter TPT

ANOVA

TPT

	Sum of Squares	df	Mean Square	F	Sig.

Between Groups	1.669	4	.417	20.867	.000
Within Groups	.200	10	.020		
Total	1.869	14			

TPT

Duncan[a]

		Subset for alpha = 0.05		
Waktu	N	1	2	3
Hari ke-3	3	5.1333		
Hari ke-4	3	5.3000	5.3000	
Hari ke-2	3	5.3667	5.3667	
Hari ke-1	3		5.5667	
Hari ke-0	3			6.1000
Sig.		.082	.052	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

ANOVA

TPT

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.195	6	.033	4.964	.006
Within Groups	.092	14	.007		
Total	.287	20			

TPT

Duncan[a]

		Subset for alpha = 0.05		
Penyimpanan	N	1	2	3
24 Jam	3	5.1333		
20 Jam	3	5.2333	5.2333	
16 Jam	3		5.3000	5.3000
12 Jam	3		5.3500	5.3500
8 Jam	3		5.3667	5.3667
4 Jam	3			5.4000
0 Jam	3			5.4333
Sig.		.152	.083	.088

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

Lampiran 8. Hasil Pengujian Kekeruhan

Waktu (Hari)	Turbidity (Suhu Dingin)			Rata-rata
	A1	A2	A3	
0	21,6	20	19,7	20,43333333
1	21,77	23,88	25,45	23,7
2	52	54	45	50,33333333
3	237	267	250	251,3333333
4	313	316	321	316,6666667

Waktu (Jam)	Turbidity (Suhu Ruang)			Rata-rata
	A1	A2	A3	
0	27,4	29,11	29,99	28,83333
4	29,69	28,5	29,6	29,26333
8	30,7	32,6	31,14	31,48
12	28,67	28,46	37,88	31,67
16	73	82	86,5	80,5
20	140	135	185,5	153,5
24	257	334,5	279	290,1667

Lampiran 9. Hasil Analisis Sidik Ragam dan Uji Lanjut DUNCAN Parameter Kekeruhan

ANOVA

Kekeruhan

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	237559.383	4	59389.846	1102.044	.000
Within Groups	538.906	10	53.891		
Total	238098.289	14			

Kekeruhan

Duncan[a]

		Subset for alpha = 0.05			
Penyimpanan	N	1	2	3	4
Hari ke-0	3	20.4333			

hari ke-1	3	23.7000			
Hari ke-2	3		50.3333		
Hari ke-3	3			251.3333	
hari ke-4	3				316.6667
Sig.		.598	1.000	1.000	1.000

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

ANOVA

Kekeruhan

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	175237.617	6	29206.269	83.491	.000
Within Groups	4897.360	14	349.811		
Total	180134.977	20			

Kekeruhan

Duncan[a]

		Subset for alpha = 0.05			
Penyimpanan	N	1	2	3	4
0 Jam	3	28.8333			
4 Jam	3	29.2633			
8 Jam	3	31.4800			
12 Jam	3	31.6700			
16 Jam	3		80.5000		
20 Jam	3			153.5000	
24 Jam	3				290.1667
Sig.		.866	1.000	1.000	1.000

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

Lampiran 10. Hasil Pengujian TPC

Waktu (Hari)	**TPC (Suhu Dingin)**			**Rata-rata**
	A1	**A2**	**A3**	
0	4,54	4,66	4,63	4,61
1	4,70	4,93	4,06	4,56
2	6,55	4,47	5,47	5,53
3	5,62	5,53	5,51	5,55
4	1,39	1,39	1,39	1,39

Waktu (Jam)	TPC (Suhu Ruang)			Rata-rata
	A1	A2	A3	
0	3,54	3,38	3,46	3,46
4	4,22	4,38	4,31	4,30
8	5,77	5,79	5,78	5,78
12	6,96	7,04	7,00	7,00
16	7,87	7,90	8,15	7,97
20	8,24	8,34	8,30	8,29
243.54	8,60	8,45	8,54	8,53

Lampiran 11. Hasil Analisis Sidik Ragam dan Uji Lanjut DUNCAN Parameter TPC

ANOVA

TPC

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	35.227	4	8.807	36.756	.000
Within Groups	2.396	10	.240		
Total	37.624	14			

TPC

Duncan[a]

		Subset for alpha = 0.05		
Waktu	N	1	2	3
Hari ke-4	3	1.3900		
Hari ke-1	3		4.5667	
Hari ke-0	3		4.6167	
Hari ke-2	3			5.5367
Hari ke-3	3			5.5567
Sig.		1.000	.903	.961

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

ANOVA

TPC

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	73.018	6	12.170	1835.942	.000

Within Groups	.093	14	.007		
Total	73.111	20			

TPC

Duncan[a]

		Subset for alpha = 0.05						
Penyimpanan	N	1	2	3	4	5	6	7
0 Jam	3	3.4600						
4 Jam	3		4.3033					
8 Jam	3			5.7800				
12 Jam	3				7.0000			
16 Jam	3					7.9733		
20 Jam	3						8.2933	
24 Jam	3							8.5300
Sig.		1.000	1.000	1.000	1.000	1.000	1.000	1.000

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

Lampiran 12. Hasil Pengujian Kolorimetri Label Indikator

Waktu (Hari)	ºHue (Suhu Dingin)			Rata-rata
	A1	A2	A3	
0	326,99	326,95	326,82	326,92
1	338,73	339,81	338,08	338,87
2	5,03	5,52	4,78	5,11
3	61,76	61,76	58,86	60,66
4	104,98	102,65	105,35	104,32

Waktu (Jam)	ºHue (Suhu Ruang)			Rata-rata
	A1	A2	A3	
0	348	352	340	346,67
4	78	78	78	78,00
8	79	74	74	75,66
12	87	82	80	83,00
16	109	97	99	101,67
20	101	102	101	101,33
24	103	98	103	101,33

Lampiran 13. Analisis Sidik Ragam dan Uji Lanjut DUNCAN Parameter ºHue

ANOVA

Hue

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	289592.444	4	72398.111	61781.567	.000
Within Groups	11.718	10	1.172		
Total	289604.162	14			

Hue

Duncan[a]

		Subset for alpha = 0.05				
Penyimpanan	N	1	2	3	4	5
Hari 2	3	5.1100				
Hari 3	3		60.7933			
Hari 4	3			104.3267		
Hari 0	3				326.9200	
Hari 1	3					338.8733
Sig.		1.000	1.000	1.000	1.000	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

ANOVA

Hue

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	171553.905	6	28592.317	1841.836	.000
Within Groups	217.333	14	15.524		
Total	171771.238	20			

Hue

Duncan[a]

		Subset for alpha = 0.05			
Penyimpanan	N	1	2	3	4
8 Jam	3	75.6667			
4 Jam	3	78.0000	78.0000		

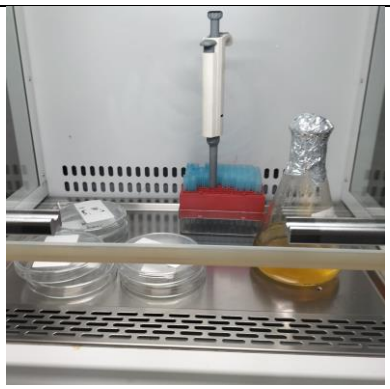
12 Jam	3		83.0000		
20 Jam	3			101.3333	
24 Jam	3			101.3333	
16 Jam	3			101.6667	
0 Jam	3				346.6667
Sig.		.480	.142	.923	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

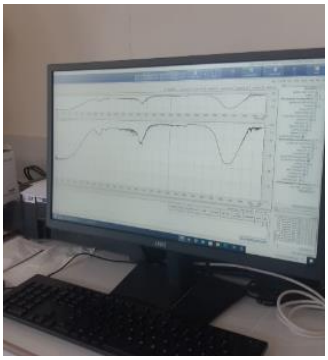
Lampiran 14. Dokumentasi Penelitian

<table>
<tr><td>  </td></tr>
<tr><td>Pembuatan dan Pengaplikasian Label Indikator</td></tr>
<tr><td>  </td></tr>
<tr><td>pH</td></tr>
<tr><td>  </td></tr>
<tr><td>Total Asam</td></tr>
<tr><td>  </td></tr>
<tr><td>TPT</td></tr>
</table>


TPC

Kolorimetri

FTIR