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LAMPIRAN

A. Prosedur Kerja

1. pH

Pengukuran nilai pH *Tepache* menggunakan pH meter dengan cara dilakukan pengambilan sampel sebanyak 50 ml dengan 2x pengulangan.

2. Gula Reduksi

Uji Gula Reduksi 1. Pembuatan Kurva Standar

A. Timbang glukosa anhidrat sebanyak 0,0100 gram

B. Larutkan dalam 100 mL Aquades

C. Siapkan 11 Tabung reaksi, lalu beri kode.

kode	Glulosa	Aquades	Nelson C
S0	0	1	1
S1	0,1	0,9	1
S2	0,2	0,8	1
S3	0,3	0,7	1
S4	0,4	0,6	1
S5	0,5	0,5	1
S6	0,6	0,4	1
S7	0,7	0,3	1
S8	0,8	0,2	1
S9	0,9	0,1	1
S10	1	0	1

D. Panaskan selama 30 menit

E. Dinginkan

F. Tambahn 1 mL reagen arsenomolibdat

G. Tambah 7 mL aquades

2. Analisa Gula Reduksi

A. Timbang sampel sebanyak 1 gram

B. Tambahkan akuades 50 mL dalam Erlenmeyer

C. Masukkan dalam labu ukur 100 mL, tambahkan akuades hingga tanda batas.

D. Saring

E. Ambil 1 mL filtrate + 1 mL nelson c (25 mL nelson A : 1 mL nelson b), masukkan ke dalam tabung reaksi.

F. Panaskan selama 30 menit menggunakan kompor listrik.

G. Dinginkan 10 menit

H. Tambahkan 1 mL reagen arsenomolibdat, lalu gojog dan diamkan selama 15 menit hingga warna terbentuk

I. Tambahkan 7 mL akuades

J. Spektro

3. Total Asam

Metode titrasi asam-basa digunakan dalam pengukuran total asam *Tepache* kulit nanas. Tahapan pengukuran adalah 20 mL *Tepache* kulit nanas ditempatkan dalam erlenmeyer dan dilarutkan dengan aquades sebanyak 2 kali volume, lalu dilakukan penambahan indikator pp 1% sebanyak 2-3 tetes dilanjutkan dengan titrasi dengan NaOH 0,1 N hingga warna merah muda terbentuk. Warna merah muda yang timbul tidak akan berubah selama 30 detik. Rumus perhitungan total asam tertitrasi sebagai berikut:

$$\text{Total asam tertitrasi (\%)} = \frac{V_1 \times N \times B \times FP}{V_2} \times 100\%$$

Keterangan:

V1 = Volume NaOH (ml)

V2 = Berat Sampel (gram)

N = Normalitas NaOH 0,1 N

B = Berat setara asam asetat

Fp = Faktor pengenceran

4. Total Perbedaan Warna

Tuang sampel pada cawan hingga penuh. Nyalakan alat chromameter, kalibrasikan terlebih dahulu alat *chromameter* dengan larutan *Tepache* Lakukan pengujian pada sampel, catatlah hasil perolehan nilai L, a, dan b Lakukan hal yang sama pada sampel berikutnya hitunglah total perbedaan warna menggunakan rumus:

$$\text{Rumus total perbedaan warna} = \Delta E^* \quad \sqrt{\Delta L^{*2} + \Delta a^{*2} + \Delta b^{*2}}$$

$$\sqrt{(L_{\text{perlakuan}} - L_{\text{kontrol}})^2 + (a_{\text{perlakuan}} - a_{\text{kontrol}})^2 + (b_{\text{perlakuan}} - b_{\text{kontrol}})^2}$$

L*= nilai kecerahan (0-100) semakin tinggi nilai semakin cerah

a*= kecenderungan warna merah-hijau

b*= kecenderungan warna kuning-biru

5. Kadar Alkohol

- 1) Timbang sampel ± 1 gram, encerkan menjadi 100 mL sehingga perkiraan alcohol maksimal 0,1%
- 2) Ambil 1 mL larutan bicromat asam masukkan dalam Conway camber A
- 3) Ambil 1 mL larutan sampel masukkan dalam camber B
- 4) Tambah 1 mL larutan K_2CO_3/Na_2CO_3 jenuh dalam Camber C
- 5) Tutup Conway dengan penutupnya yang dilapisi dengan vaslin
- 6) Digoyang memutar supaya sampel campur dengan natrium karbonat jenuh
- 7) Inkubasi pada suhu $80^{\circ}C$ selama 2 Jam.
- 8) Bicromat asam dalam camber A diambil dan diencerkan menjadi 10 mL dengan pipet
- 9) Divortex dan tera serapan warna pada panjang gelombang 470 nm
- 10) Buat kurva standar.

Timbang Ethanol Absolute 125 Mgr encerkan menjadi 100 Ml sehingga konsentrasinya 1 Mgr/ml

(Bj ethanol $0,8 \times 125 \text{ Mgr} = 100 \text{ Mgr Ethanol}$)

	Absorbansi	Konsentrasi
S 0	0.62	0.00
S 1	0.455	0.25
S 2	0.295	0.5
S 3	0.155	0.75
S 4	0.02	1.0

6. Uji Organoleptik

Nama :

Hari/tanggal :

Nim :

Tanda Tangan :

Dihadapan saudara telah disajikan 9 sampel *Tepache* dengan kode yang berbeda, saudara diminta untuk memberikan penilaian berdasarkan warna, aroma dan rasa. Terkait warna dilakukan dengan cara melihat, untuk aroma dengan cara mencium, dan pada rasa dengan cara mencicipinya. Kemudian saudara diminta untuk memberikan nilai tingkat kesukaan terhadap sampel yang telah ditentukan.

Netralkan dengan air putih setiap saudara berganti sampel.

Kode Sampel	Warna	Aroma	Rasa

Komentar (harus diisi) :

Warna

Aroma

Rasa

Keterangan:

1 = sangat tidak suka

5 = agak suka

2 = tidak suka

6 = suka

3 = Agak tidak suka

7 = sangat suka

4 = Netral

B. Dokumentasi Penelitian





C. Data Perhitungan SPSS

1. pH

Tests of Between-Subjects Effects

Dependent Variable: pH

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	.061 ^a	8	.008	13.152	.000
Intercept	327.595	1	327.595	561590.867	.000
A	.046	2	.023	39.267	.000
B	.014	2	.007	12.181	.003
A * B	.001	4	.000	.581	.684
Error	.005	9	.001		
Total	327.661	18			
Corrected Total	.067	17			

a. R Squared = .921 (Adjusted R Squared = .851)

A		N	Subset	
			1	2
Duncan ^{a,b}	A3	6	4.2217	
	A2	6	4.2400	
	A1	6		4.3367
	Sig.		.221	1.000

B		N	Subset	
			1	2
Duncan ^{a,b}	B1	6	4.2267	
	B2	6		4.2817
	B3	6		4.2900
	Sig.		1.000	.565

Means for groups in homogeneous subsets are displayed.

Based on observed means.

The error term is Mean Square(Error) = .001.

a. Uses Harmonic Mean Sample Size = 6.000.

b. Alpha = .05.

2. Gula Reduksi

Tests of Between-Subjects Effects

Dependent Variable: GULA_REDUKSI

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	1296.091 ^a	8	162.011	63.479	.000
Intercept	21383.120	1	21383.120	8378.236	.000
A	432.880	2	216.440	84.805	.000
B	273.134	2	136.567	53.509	.000
A * B	590.077	4	147.519	57.800	.000
Error	22.970	9	2.552		
Total	22702.181	18			
Corrected Total	1319.061	17			

a. R Squared = .983 (Adjusted R Squared = .967)

GULA_REDUKSI

A		N	Subset		
			1	2	3
Duncan ^{a,b}	A3	6	29.2967		
	A2	6		33.0483	
	A1	6			41.0550
	Sig.		1.000	1.000	1.000

GULA_REDUKSI

B		N	Subset	
			1	2
Duncan ^{a,b}	B3	6	31.2800	
	B2	6	32.1683	
	B1	6		39.9517
	Sig.		.361	1.000

Means for groups in homogeneous subsets are displayed.

Based on observed means.

The error term is Mean Square(Error) = .001.

a. Uses Harmonic Mean Sample Size = 6.000.

b. Alpha = .05.

3. Total Asam Titrasi

Tests of Between-Subjects Effects

Dependent Variable: TOTAL_ASAM

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	64.279 ^a	8	8.035	3.392	.044
Intercept	5283.920	1	5283.920	2230.611	.000
A	19.240	2	9.620	4.061	.055
B	.976	2	.488	.206	.818
A * B	44.064	4	11.016	4.650	.026
Error	21.319	9	2.369		
Total	5369.519	18			
Corrected Total	85.599	17			

a. R Squared = .751 (Adjusted R Squared = .530)

TOTAL_ASAM

A		N	Subset	
			1	2
Duncan ^{a,b}	A2	6	15.6717	
	A3	6		17.8333
	A1	6		17.8950
	Sig.		1.000	.946

TOTAL_ASAM

B		N	Subset
			1
Duncan ^{a,b}	B2	6	16.8117
	B3	6	17.2333
	B1	6	17.3550
	Sig.		.573

Means for groups in homogeneous subsets are displayed.

Based on observed means.

The error term is Mean Square(Error) = .001.

a. Uses Harmonic Mean Sample Size = 6.000.

b. Alpha = .05.

4. Total Perbedaan Warna

Tests of Between-Subjects Effects

Dependent Variable: CHROMA

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	4533.034 ^a	8	566.629	2.610	.087
Intercept	76751.008	1	76751.008	353.553	.000
A	1452.884	2	726.442	3.346	.082
B	1937.754	2	968.877	4.463	.045
A * B	1142.395	4	285.599	1.316	.335
Error	1953.762	9	217.085		
Total	83237.804	18			
Corrected Total	6486.796	17			

a. R Squared = .699 (Adjusted R Squared = .431)

CHROMA

A		N	Subset
			1
Duncan ^{a,b}	A1	6	58.7167
	A2	6	59.1783
	A3	6	78.0017
	Sig.		.058

CHROMA

B		N	Subset	
			1	2
Duncan ^{a,b}	B3	6	50.6867	
	B1	6		71.4467
	B2	6		73.7633
	Sig.		1.000	.792

Means for groups in homogeneous subsets are displayed.

Based on observed means.

The error term is Mean Square(Error) = .001.

a. Uses Harmonic Mean Sample Size = 6.000.

b. Alpha = .05.

5. Kadar Alkohol

Tests of Between-Subjects Effects

Dependent Variable: KADAR_ALKOHOL

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	3.946 ^a	8	.493	1719.950	.000
Intercept	22.244	1	22.244	77569.258	.000
A	3.858	2	1.929	6726.624	.000
B	.072	2	.036	124.953	.000
A * B	.016	4	.004	14.111	.001
Error	.003	9	.000		
Total	26.193	18			
Corrected Total	3.948	17			

a. R Squared = .999 (Adjusted R Squared = .999)

KADAR_ALKOHOL

A		N	Subset		
			1	2	3
Duncan ^{a,b}	A1	6	.5389		
	A2	6		1.1234	
	A3	6			1.6727
	Sig.		1.000	1.000	1.000

KADAR_ALKOHOL

B		N	Subset		
			1	2	3
Duncan ^{a,b}	B3	6	1.0334		
	B2	6		1.1138	
	B1	6			1.1879
	Sig.		1.000	1.000	1.000

Means for groups in homogeneous subsets are displayed.

Based on observed means.

The error term is Mean Square(Error) = .001.

a. Uses Harmonic Mean Sample Size = 6.000.

b. Alpha = .05.

6. Uji Organoleptik

a. Warna

Tests of Between-Subjects Effects

Dependent Variable: WARNA

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	2.715 ^a	8	.339	488.700	.000
Intercept	451.501	1	451.501	650161.800	.000
A	2.373	2	1.186	1708.200	.000
B	.126	2	.063	90.600	.000
A * B	.217	4	.054	78.000	.000
Error	.006	9	.001		
Total	454.223	18			
Corrected Total	2.721	17			

a. R Squared = .998 (Adjusted R Squared = .996)

WARNA

A		N	Subset		
			1	2	3
Duncan ^{a,b}	A3	6	4.5250		
	A2	6		5.1000	
	A1	6			5.4000
	Sig.		1.000	1.000	1.000

WARNA

B		N	Subset	
			1	2
Duncan ^{a,b}	B1	6	4.9333	
	B3	6	4.9667	
	B2	6		5.1250
	Sig.		.056	1.000

Means for groups in homogeneous subsets are displayed.

Based on observed means.

The error term is Mean Square(Error) = .001.

a. Uses Harmonic Mean Sample Size = 6.000.

b. Alpha = .05.

b. Rasa

Tests of Between-Subjects Effects

Dependent Variable: RASA

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	3.843 ^a	8	.480	93.473	.000
Intercept	493.503	1	493.503	96033.108	.000
A	3.662	2	1.831	356.297	.000
B	.130	2	.065	12.676	.002
A * B	.051	4	.013	2.459	.121
Error	.046	9	.005		
Total	497.393	18			
Corrected Total	3.889	17			

a. R Squared = .988 (Adjusted R Squared = .978)

RASA

A		N	Subset		
			1	2	3
Duncan ^{a,b}	A3	6	4.6250		
	A2	6		5.3833	
	A1	6			5.7000
	Sig.		1.000	1.000	1.000

RASA

B		N	Subset		
			1	2	3
Duncan ^{a,b}	B2	6	5.1333		
	B3	6		5.2333	
	B1	6			5.3417
	Sig.		1.000	1.000	1.000

Means for groups in homogeneous subsets are displayed.

Based on observed means.

The error term is Mean Square(Error) = .001.

a. Uses Harmonic Mean Sample Size = 6.000.

b. Alpha = .05.

c. Aroma

Tests of Between-Subjects Effects

Dependent Variable: AROMA

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	1.764 ^a	8	.220	34.505	.000
Intercept	464.109	1	464.109	72643.130	.000
A	1.460	2	.730	114.283	.000
B	.177	2	.088	13.848	.002
A * B	.126	4	.032	4.946	.022
Error	.058	9	.006		
Total	465.930	18			
Corrected Total	1.821	17			

a. R Squared = .968 (Adjusted R Squared = .940)

AROMA

A		N	Subset		
			1	2	3
Duncan ^{a,b}	A3	6	4.7583		
	A2	6		5.0250	
	A1	6			5.4500
	Sig.		1.000	1.000	1.000

AROMA

B		N	Subset	
			1	2
Duncan ^{a,b}	B2	6	4.9417	
	B3	6		5.1167
	B1	6		5.1750
	Sig.		1.000	.238

Means for groups in homogeneous subsets are displayed.

Based on observed means.

The error term is Mean Square(Error) = .001.

a. Uses Harmonic Mean Sample Size = 6.000.

b. Alpha = .05.