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LAMPIRAN

Lampiran 1. Dokumentasi Penelitian

Lampiran 2. Langkah Prosedur Penelitian

1. Uji pH Larutan (Zahra, 2020)

- Siapkan alat dan bahan
- kemudian masukan bahan-bahan yang tersedia kedalam tabung reaksi.
- Lalu, masukan kedalam setiap tabung reaksi yang terisi bahan masing-masing satu buah kertas lakmus.
- Kemudian, amati perubahan yang terjadi pada kertas lakmus tersebut.
- Dan tentukan pH pada setiap bahan tadi.
- Kedua masukan beberapa tetes bahan pada plat tetes.
- Lalu tetesi setiap bahan dengan bromtimol biru, fenoftalein, metil merah, dan metil orange.
- Amati perubahan warna pada setiap bahan yang telah ditetesi dengan bahan-bahan kimia tadi.
- Setelah terjadi perubahan maka tentukan pH pada masing-masing bahan tersebut.
- Setelah kedua percobaan tersebut dilakukan maka bandingkan pH pada masing-masing bahan tersebut.

2. Uji Vitamin C Dengan Metode Titrasi Iodin Atau Metode *Jacobs* (Sudarmadji et al., 1984)

Penetapan kadar vitamin C dilakukan dengan cara menghaluskan bahan:

- Sebanyak 10 gram kemudian dilarutkan dengan aquades di dalam labu takar 100 mL sampai tanda tera.
- Setelah itu dihomogenkan dan disaring menggunakan kertas saring untuk memisahkan filtratnya.
- Sebanyak 5 mL filtrat dimasukkan ke dalam Erlenmeyer 125 mL, kemudian ditambahkan 2 mL larutan amilum 1%.
- Selanjutnya dititrasi menggunakan larutan iod 0,01 N. Titik akhir titrasi ditandai dengan perubahan warna larutan menjadi biru. Setiap ml iod equivalen dengan 0,88 mg asam askorbat. Kadar vitamin C dalam bahan dapat dihitung menggunakan rumus (1) dan (2) sebagai berikut :

$$mg\ AA = \frac{mL\ iod\ 0{,}01\ N\ x\ 0{,}88\ x\ FP\ x\ 10}{gram\ bahan} \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ (1)$$

$$\text{Kadar Vitamin C} = \frac{mg\ AA}{100\ gram\ bahan} \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ (2)$$

Keterangan :

Mg AA : mg asam askorbat

FP : faktor pengenceran

3. Uji Analisis Warna (*Chromameter/Hand Colorimeter*) (Annisa dan Rahayu, 2022)

- Tuang sampel pada cawan sampel hingga penuh
- Nyalakan alat chromameter/ hand colorimeter
- Kalibrasikan terlebih dahulu alat chromameter/ hand colorimeter
- dengan kertas berwarna putih
- Lakukan pengujian pada sampel
- Catatlah hasil perolehan nilai L*, a* dan b*
- Lakukan hal yang sama pada sampel berikutnya

Rumus total perbedaan warna = ΔE* √ΔL ∗ 2 + Δα ∗ 2 + Δb ∗ 2

√L perlakuan − L kontrol) 2 + (α perlakuan − α kontrol) 2 + (b perlakuan − b kontrol) 2

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

a*=kecenderungan warna merah hijau

b*= kecendrungan warna kuning-biru

Skor Analisis Chromameter L*= 29,82, a* = 3,14, -b* = 3,24

4. Uji Kadar Kafein(Supartiningsih et al., 2020)

- Kafein di ekstrak terlebih dahulu dari 1 gram sampel di larukan dalam 150 mL akuades panas
- kemudian di saring dan diambil filtratnya yang selanjutnya dimasukkan ke dalam corong pisah dan ditambahkan 1,5 gr $CaCO_3$
- kemudian diekstraksi sebanyak 4 kali dengan penambahan klorofom masing-masing 25 mL.
- Hasil ekstrak kemudian di uapkan menggunakan rotari evaporator sampai klorofom menguap dan ekstrak kafein yang tersisa diencerkan menggunakan akuades sebanyak 10 kali.
- Larutan kemudian diukur absorbansinya menggunakan Spektrofotometer UV-Vis pada panjang gelombang maksimum.
- Presisi dan akurasi dibuat dengan membuat sampel buatan dengan kadar sebesar 10 ppm yang dilakukan replikasi sebanyak 9 kali.
- Larutan di ukur absorbansinya menggunakan Spektrofotometri UV-Vis pada panjang gelombang maksimum

5. Analisa Uji Organoleptik (Kartika et al., 1998)

Nama : Hari/tanggal :

NIM : Tanda tangan :

Dihadapan saudara disajikan 9 sampel minuman kopi dengan penambahan ekstrak jenis jeruk menggunakan kode yang berbeda. Saudara diminta untuk memberi penialian kesukaan aroma dengan cara mencium, kesukaan warna dengan melihat, kesukaan rasa dengan cara mencicipi. Lalu memberi penialian 1 -7.

Kode Sampel	**Aroma**	**Warna**	**Rasa**
135			
175			
114			
246			
315			
291			
313			
377			
292			

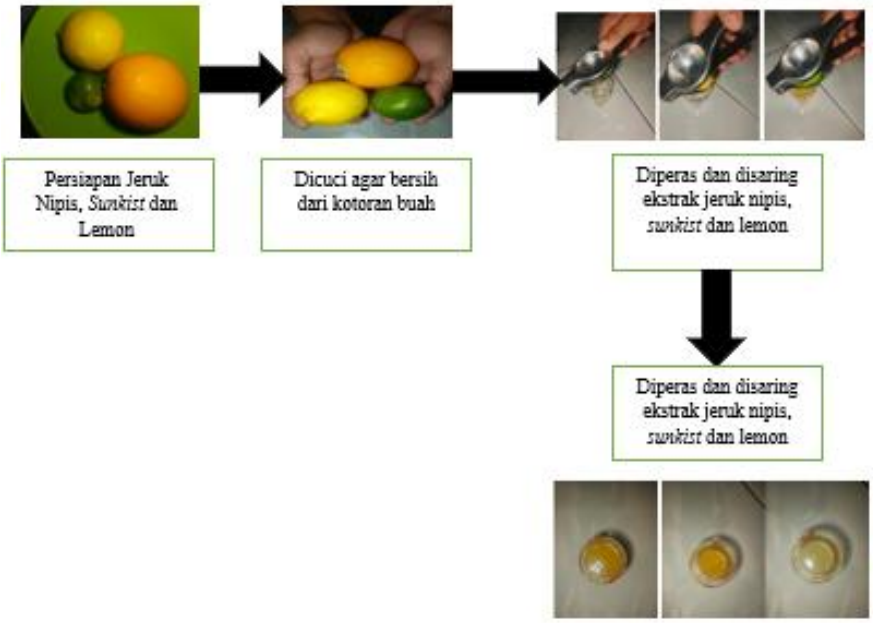
Komentar

……

Keterangan : 1= Sangat tidak suka
2= Tidak suka
3= Agak tidak suka
4= Netral
5= Agak suka
6= Suka
7= Sangat suka

Lampiran 3. Diagram Alir

a. Pembuatan ekstrak jenis jeruk

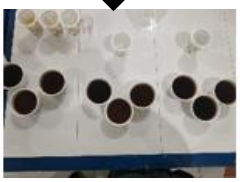


b. Pembuatan Kopi Dengan Seduhan Yang Berbeda

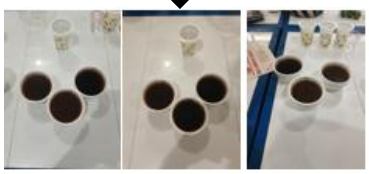
Penimbangan *RoastBean* Kopi Liberika (*Honey Proces*).

Grinder atau pengecilan ukuran sesuai *size* metode penyeduhan.

Metode penyeduhan kopi liberika (*French press,* V60 dan *Cold brew*).



Penambahan Ekstrak jenis jeruk (Nipis, *sunkist* dan lemon)



Seduhan Kopi dengan Penambahan Ekstrak 3 Jeruk

Analisis:

Organoleptik(Rasa, warna, aroma)

Kadar kafein

Kadar pH

Kadar Vitamin C

Analisis warna dengan *Chromameter*

A. Lampiran Perhitungan SPSS 23

a. Uji pH

Tests of Between-Subjects Effects

Dependent Variable: pH

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	1.767[a]	8	.221	27.236	.000
Intercept	375.563	1	375.563	46302.249	.000
A	.112	2	.056	6.929	.015
B	1.636	2	.818	100.875	.000
A * B	.018	4	.005	.570	.691
Error	.073	9	.008		
Total	377.403	18			
Corrected Total	1.840	17			

a. R Squared = .960 (Adjusted R Squared = .925)

A		N	Subset 1	Subset 2
Duncan[a,b]	A1	6	4.4683	
	A2	6	4.5733	4.5733
	A3	6		4.6617
	Sig.		.074	.124

B		N	Subset 1	Subset 2
Duncan[a,b]	B1	6	4.3317	
	B3	6	4.3783	
	B2	6		4.9933
	Sig.		.393	1.000

Means for groups in homogeneous subsets are displayed.
Based on observed means.
The error term is Mean Square(Error) = .008.
a. Uses Harmonic Mean Sample Size = 6.000.

b. Alpha = ,05.

b. Uji Kadar Vitamin C

Tests of Between-Subjects Effects

Dependent Variable: VITAMIN_C

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	.014[a]	8	.002	53.031	.000
Intercept	.087	1	.087	2578.011	.000
A	.007	2	.004	106.489	.000
B	.003	2	.002	51.258	.000
A * B	.004	4	.001	27.189	.000
Error	.000	9	3.383E-5		
Total	.102	18			
Corrected Total	.015	17			

a. R Squared = .979 (Adjusted R Squared = .961)

A		N	Subset 1	Subset 2	Subset 3
Duncan[a,b]	A1	6	.0418		
	A2	6		.0788	
	A3	6			.0882
	Sig.		1.000	1.000	1.000

B		N	Subset 1	Subset 2	Subset 3
Duncan[a,b]	B3	6	.0525		
	B1	6		.0698	
	B2	6			.0865
	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) = 3.383E-5.
a. Uses Harmonic Mean Sample Size = 6.000.
b. Alpha = ,05.

c. Uji chromameter

Tests of Between-Subjects Effects

Dependent Variable: CHROMAMETER

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	2828.312[a]	8	353.539	102.018	.000
Intercept	18463.373	1	18463.373	5327.809	.000
A	1563.871	2	781.936	225.636	.000
B	930.785	2	465.393	134.294	.000
A * B	333.655	4	83.414	24.070	.000
Error	31.189	9	3.465		
Total	21322.874	18			
Corrected Total	2859.501	17			

a. R Squared = .989 (Adjusted R Squared = .979)

A		N	Subset 1	Subset 2	Subset 3
Duncan[a,b]	A1	6	23.9067		
	A3	6		27.0950	
	A2	6			45.0800
	Sig.		1.000	1.000	1.000

B		N	Subset 1	Subset 2
Duncan[a,b]	B1	6	26.8950	
	B2	6	26.9900	
	B3	6		42.1967
	Sig.		.932	1.000

Means for groups in homogeneous subsets are displayed.

Based on observed means.

The error term is Mean Square(Error) = 3.465.

a. Uses Harmonic Mean Sample Size = 6.000.

b. Alpha = ,05.

d. Organoleptik Kesukaan Warna

Tests of Between-Subjects Effects

Dependent Variable: ORGANOLEPTIK_WARNA

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	4.075[a]	8	.509	18.712	.000
Intercept	420.500	1	420.500	15446.939	.000
A	2.036	2	1.018	37.393	.000
B	1.451	2	.725	26.648	.000
A * B	.588	4	.147	5.403	.017
Error	.245	9	.027		
Total	424.820	18			
Corrected Total	4.320	17			

a. R Squared = .943 (Adjusted R Squared = .893)

A		N	Subset 1	Subset 2
Duncan[a,b]	A2	6	4.5750	
	A3	6	4.6167	
	A1	6		5.3083
	Sig.		.672	1.000

B		N	Subset 1	Subset 2	Subset 3
Duncan[a,b]	B2	6	4.5083		
	B1	6		4.7917	
	B3	6			5.2000
	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) = .027.
a. Uses Harmonic Mean Sample Size = 6.000.
b. Alpha = ,05.

e. Organoleptik Kesukaan Rasa

Tests of Between-Subjects Effects

Dependent Variable: ORGANOLEPTIK_RASA

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	1.540[a]	8	.193	19.250	.000
Intercept	429.245	1	429.245	42924.500	.000
A	.861	2	.430	43.042	.000
B	.126	2	.063	6.292	.020
A * B	.553	4	.138	13.833	.001
Error	.090	9	.010		
Total	430.875	18			
Corrected Total	1.630	17			

a. R Squared = .945 (Adjusted R Squared = .896)

A		N	Subset 1	Subset 2
Duncan[a,b]	A3	6	4.7083	
	A2	6	4.7500	
	A1	6		5.1917
	Sig.		.489	1.000

B		N	Subset 1	Subset 2
Duncan[a,b]	B3	6	4.7667	
	B2	6		4.9250
	B1	6		4.9583
	Sig.		1.000	.578

Means for groups in homogeneous subsets are displayed.

Based on observed means.

The error term is Mean Square(Error) = .010.

a. Uses Harmonic Mean Sample Size = 6.000.

b. Alpha = ,05.

f. Organoleptik Kesukaan Aroma

Tests of Between-Subjects Effects

Dependent Variable: ORGANOLEPTIK_AROMA

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	.998[a]	8	.125	4.380	.020
Intercept	403.753	1	403.753	14180.610	.000
A	.351	2	.176	6.166	.021
B	.388	2	.194	6.810	.016
A * B	.259	4	.065	2.273	.141
Error	.256	9	.028		
Total	405.008	18			
Corrected Total	1.254	17			

a. R Squared = .796 (Adjusted R Squared = .614)

A		N	Subset 1	Subset 2
Duncan[a,b]	A2	6	4.5917	
	A3	6	4.6917	
	A1	6		4.9250
	Sig.		.331	1.000

	B	N	Subset 1	Subset 2
Duncan[a,b]	B2	6	4.6083	
	B3	6	4.6583	
	B1	6		4.9417
	Sig.		.620	1.000

Means for groups in homogeneous subsets are displayed.

Based on observed means.

The error term is Mean Square(Error) = .028.

a. Uses Harmonic Mean Sample Size = 6.000.

b. Alpha = ,05.

g. Uji Kadar Kafein

Tests of Between-Subjects Effects

Dependent Variable: KADAR_KAFEIN

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	.050[a]	8	.006	113.625	.000
Intercept	1.037	1	1.037	18662.400	.000
A	.042	2	.021	375.600	.000
B	.008	2	.004	71.100	.000
A * B	.001	4	.000	3.900	.042
Error	.000	9	5.556E-5		
Total	1.088	18			
Corrected Total	.051	17			

a. R Squared = .990 (Adjusted R Squared = .981)

A			Subset		
		N	1	2	3
Duncan[a,b]	A2	6	.1767		
	A3	6		.2500	
	A1	6			.2933
	Sig.		1.000	1.000	1.000

B			Subset		
		N	1	2	3
Duncan[a,b]	B3	6	.2183		
	B1	6		.2333	
	B2	6			.2683
	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) = 5.556E-5.

a. Uses Harmonic Mean Sample Size = 6.000.

b. Alpha = ,05.