

7. LAMPIRAN

7.1. Perhitungan

Perhitungan jumlah fortifikan yang ditambahkan :

AKG zat besi wanita = 18 mg/hari

20 % AKG = 20% x 18 mg/hari = 3,6 mg/hari

Jumlah kandungan zat besi dalam fortifikan kedelai = 113,86 ppm = 11,39 mg/ 100 g kedelai, sehingga jumlah yang ditambahkan ke dalam *guava jelly drink* (F3)

$$= \frac{3,6 \text{ mg}}{11,39 \text{ mg}} \times 100 \text{ g} = 31,61 \text{ g}$$

Jumlah kandungan zat besi dalam fortifikan kacang hijau = 58,756 ppm = 5,88 mg/ 100 g kedelai, sehingga jumlah yang ditambahkan ke dalam *guava jelly drink* (F2)

$$= \frac{3,6 \text{ mg}}{5,88 \text{ mg}} \times 100 \text{ g} = 61,22 \text{ g}$$

Jumlah fortifikan yang ditambahkan ke ke dalam *guava jelly drink* (F4) =

- fortifikan zat besi dari kedelai = $\frac{1,8 \text{ mg}}{11,39 \text{ mg}} \times 100 \text{ g} = 15,8 \text{ g}$

- fortifikan zat besi dari kacang hijau = $\frac{1,8 \text{ mg}}{5,88 \text{ mg}} \times 100 \text{ g} = 30,61 \text{ g}$

7.2. Gambar



Gambar 6. Proses ekstraksi zat besi kedelai (kanan) dan kacang hijau (kiri)



Gambar 7. Pengukuran kadar zat besi metode *Atomic Absorption Spectrophotometry*



(a)

(b)

(c)

Gambar 8. (a) Pembuatan *guava jelly drink*, (b) komposisi bahan, (c) fortifikan zat besi



Gambar 9. Analisa sensori *guava jelly drink*

7.3. Analisa Data

7.3.1. Penelitian Pendahuluan

7.3.1.1. Ekstraksi Zat Besi

Tests of Normality

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
kd	.212	9	.200*	.852	9	.079
ki	.194	9	.200*	.889	9	.195

a. Lilliefors Significance Correction

*. This is a lower bound of the true significance.

kd

Duncan^a

perlakuan	N	Subset for alpha = 0.05	
		1	2
e40%	3	.00606067	
e50%	3	.00652500	
e30%	3		.00917900
Sig.		.435	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

ki

Duncan^a

perlakuan	N	Subset for alpha = 0.05
		1
e40%	3	.00540000
e50%	3	.00573933
e30%	3	.00580967
Sig.		.828

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

7.3.1.2. Viskositas

Tests of Normality

perlakuan		Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
visko	oky	.153	6	.200*	.957	6	.794
	K08	.194	6	.200*	.919	6	.496
	K09	.170	6	.200*	.947	6	.719
	K10	.122	6	.200*	.982	6	.961
	K11	.140	6	.200*	.988	6	.982

a. Lilliefors Significance Correction

*. This is a lower bound of the true significance.

ANOVA

visko

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.209E10	4	3.023E9	296.109	.000
Within Groups	2.552E8	25	1.021E7		
Total	1.235E10	29			

visko

Duncan^a

perlakuan	N	Subset for alpha = 0.05			
		1	2	3	4
K08	6	86627.6667			
K09	6		113000.0000		
oky	6		116166.6667		
K10	6			121500.0000	
K11	6				149500.0000
Sig.		1.000	.098	1.000	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 6.000.

7.3.1.3. Kekenyalan (Kekuatan Gel)

Tests of Normality

perlakuan		Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
kekenyalan	Oky	.223	6	.200*	.893	6	.333
	K08	.170	6	.200*	.938	6	.644
	K09	.208	6	.200*	.942	6	.678
	K10	.183	6	.200*	.969	6	.884
	K11	.209	6	.200*	.948	6	.724

a. Lilliefors Significance Correction

*. This is a lower bound of the true significance.

ANOVA

kekenyalan

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	881.065	4	220.266	42.215	.000
Within Groups	130.443	25	5.218		
Total	1011.508	29			

kekenyalan

Duncan^a

perlakuan	N	Subset for alpha = 0.05			
		1	2	3	4
K08	6	28.5167			
K09	6	28.9500			
Oky	6		31.7333		
K10	6			37.1667	
K11	6				42.7333
Sig.		.745	1.000	1.000	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 6.000.

7.3.1.4. Tingkat Keasaman (pH)

Tests of Normality

perlakuan	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
pH oky	.207	6	.200*	.892	6	.331
K08	.180	6	.200*	.920	6	.505
K09	.293	6	.117	.915	6	.473
K10	.215	6	.200*	.850	6	.158
K11	.180	6	.200*	.920	6	.505

a. Lilliefors Significance Correction

*. This is a lower bound of the true significance.

ANOVA

pH

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.295	4	.324	1129.203	.000
Within Groups	.007	25	.000		
Total	1.302	29			

pH

Duncan^a

perlakuan	N	Subset for alpha = 0.05			
		1	2	3	4
K08	6	3.7733			
K09	6	3.7767			
K10	6		3.7983		
K11	6			3.9367	
oky	6				4.3183
Sig.		.736	1.000	1.000	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 6.000.

7.3.1.5. Analisa Organoleptik

Test Statistics^a

N		30
Chi-square		6.070
df		3
Asymp. Sig.		.108
Monte Carlo Sig.	Sig.	.106
	95% Confidence Interval	
	Lower Bound	.100
	Upper Bound	.112

a. Friedman Test

7.3.2. Penelitian Utama

7.3.2.1. Ekstraksi Zat Besi

Tests of Normality

perlakuan		Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
kedelai	1.00	.184	6	.200*	.920	6	.508
kc.ijo	1.00	.229	6	.200*	.905	6	.404

a. Lilliefors Significance Correction

*. This is a lower bound of the true significance.

One-Sample Test

	Test Value = 0					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
kedelai	14.885	5	.000	113.85668	94.1946	133.5188
kc.ijo	24.317	5	.000	58.75610	52.5449	64.9673

7.3.2.2. Analisa Sensori

Atribut Rasa

Test Statistics^a

N	30
Chi-square	9.880
df	3
Asymp. Sig.	.020
Monte Carlo Sig. Sig.	.019
95% Confidence Interval Lower Bound	.016
Upper Bound	.022

a. Friedman Test

Test Statistics^{c, d}

Z	F2 - F1	F3 - F1	F4 - F1	F3 - F2	F4 - F2	F4 - F3
	-2.325 ^a	-2.673 ^a	-1.788 ^a	-.878 ^a	-.552 ^b	-.952 ^b
Asymp. Sig. (2-tailed)	.020	.008	.074	.380	.581	.341
Monte Carlo Sig. (2-tailed) Sig.	.019	.006	.079	.393	.613	.359
95% Confidence Interval Lower Bound	.016	.004	.074	.383	.603	.350
Upper Bound	.022	.007	.084	.402	.623	.369
Monte Carlo Sig. (1-tailed) Sig.	.010	.003	.040	.198	.302	.177
95% Confidence Interval Lower Bound	.008	.002	.036	.190	.293	.169
Upper Bound	.012	.005	.044	.205	.311	.184

a. Based on positive ranks.

b. Based on negative ranks.

c. Wilcoxon Signed Ranks Test

d. Based on 10000 sampled tables with starting seed 299883525.

Atribut Tekstur

Test Statistics^a

N	30
Chi-square	11.729
df	3
Asymp. Sig.	.008
Monte Carlo Sig. Sig.	.006
95% Confidence Interval Lower Bound	.004
Upper Bound	.007

a. Friedman Test

Test Statistics^{c, d}

	F2 - F1	F3 - F1	F4 - F1	F3 - F2	F4 - F2	F4 - F3
Z	-1.257 ^a	-3.044 ^a	-2.368 ^a	-1.797 ^a	-1.624 ^a	-.021 ^b
Asymp. Sig. (2-tailed)	.209	.002	.018	.072	.104	.983
Monte Carlo Sig. (2-tailed)	Sig. .218	.001	.016	.071	.111	.998
95% Confidence Interval						
Lower Bound	.210	.001	.013	.066	.105	.997
Upper Bound	.226	.002	.018	.076	.117	.999
Monte Carlo Sig. (1-tailed)	Sig. .114	.001	.007	.037	.057	.493
95% Confidence Interval						
Lower Bound	.107	.000	.006	.033	.052	.484
Upper Bound	.120	.001	.009	.040	.061	.503

a. Based on positive ranks.

b. Based on negative ranks.

c. Wilcoxon Signed Ranks Test

d. Based on 10000 sampled tables with starting seed 1861419652.

Atribut Aroma

Test Statistics^a

N	30
Chi-square	22.000
df	3
Asymp. Sig.	.000
Monte Carlo Sig.	Sig. .000
95% Confidence Interval	
Lower Bound	.000
Upper Bound	.000

a. Friedman Test

Test Statistics^{c, d}

	F2 - F1	F3 - F1	F4 - F1	F3 - F2	F4 - F2	F4 - F3
Z	-3.671 ^a	-3.412 ^a	-2.806 ^a	-.879 ^b	-1.563 ^b	-1.043 ^b
Asymp. Sig. (2-tailed)	.000	.001	.005	.380	.118	.297
Monte Carlo Sig. (2-tailed)	Sig. .000	.001	.004	.400	.127	.319
95% Confidence Interval						
Lower Bound	.000	.000	.003	.390	.120	.310
Upper Bound	.000	.001	.005	.410	.133	.328
Monte Carlo Sig. (1-tailed)	Sig. .000	.000	.002	.199	.065	.162
95% Confidence Interval						
Lower Bound	.000	.000	.001	.191	.060	.154
Upper Bound	.000	.001	.002	.206	.070	.169

a. Based on positive ranks.

b. Based on negative ranks.

c. Wilcoxon Signed Ranks Test

d. Based on 10000 sampled tables with starting seed 1535910591.

Atribut Warna

Test Statistics^a

N		30
Chi-square		16.120
df		3
Asymp. Sig.		.001
Monte Carlo Sig.	Sig.	.001
	95% Confidence Interval	Lower Bound
		.000
		Upper Bound
		.001

a. Friedman Test

Test Statistics^{b,c}

		F2 - F1	F3 - F1	F4 - F1	F3 - F2	F4 - F2	F4 - F3
Z		-1.880 ^a	-3.033 ^a	-3.054 ^a	-1.929 ^a	-2.140 ^a	-.241 ^a
Asymp. Sig. (2-tailed)		.060	.002	.002	.054	.032	.810
Monte Carlo Sig. (2-tailed)	Sig.	.061	.002	.002	.059	.034	.830
	95% Confidence Interval	Lower Bound	.057	.001	.001	.055	.030
		Upper Bound	.066	.003	.002	.064	.037
Monte Carlo Sig. (1-tailed)	Sig.	.032	.001	.001	.030	.015	.415
	95% Confidence Interval	Lower Bound	.029	.000	.000	.027	.013
		Upper Bound	.036	.002	.001	.034	.017

a. Based on positive ranks.

b. Wilcoxon Signed Ranks Test

c. Based on 10000 sampled tables with starting seed 475497203.

Atribut Overall

Test Statistics^a

N		30
Chi-square		18.360
df		3
Asymp. Sig.		.000
Monte Carlo Sig.	Sig.	.000
	95% Confidence Interval	Lower Bound
		.000
		Upper Bound
		.000

a. Friedman Test

Test Statistics^{c,d}

		F2 - F1	F3 - F1	F4 - F1	F3 - F2	F4 - F2	F4 - F3
Z		-3.117 ^a	-3.467 ^a	-2.545 ^a	-.799 ^a	-.798 ^b	-1.367 ^b
Asymp. Sig. (2-tailed)		.002	.001	.011	.424	.425	.172
Monte Carlo Sig. (2-tailed)	Sig.	.001	.000	.010	.457	.440	.174
	95% Confidence Interval	Lower Bound	.000	.000	.008	.448	.431
		Upper Bound	.002	.000	.011	.467	.450
Monte Carlo Sig. (1-tailed)	Sig.	.000	.000	.005	.230	.215	.087
	95% Confidence Interval	Lower Bound	.000	.000	.003	.222	.207
		Upper Bound	.001	.000	.006	.238	.223

a. Based on positive ranks.

b. Based on negative ranks.

c. Wilcoxon Signed Ranks Test

d. Based on 10000 sampled tables with starting seed 257291219.

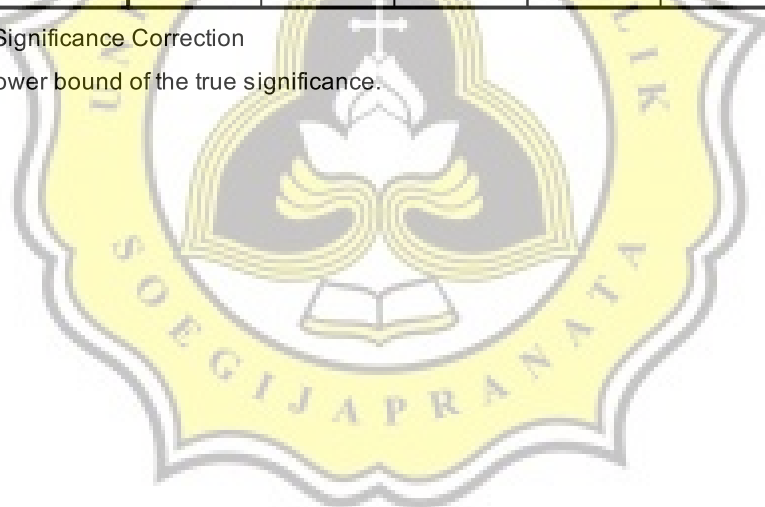
7.3.2.3. Analisa Kimiawi

Tests of Normality

perlakuan		Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
air	kontrol	.282	6	.147	.853	6	.166
	mix	.247	6	.200*	.916	6	.474
abu	kontrol	.202	6	.200*	.949	6	.735
	mix	.317	6	.060	.777	6	.036
lemak	kontrol	.245	6	.200*	.856	6	.175
	mix	.161	6	.200*	.934	6	.611
protein	kontrol	.247	6	.200*	.880	6	.267
	mix	.214	6	.200*	.937	6	.638
karbohidrat	kontrol	.281	6	.149	.823	6	.095
	mix	.297	6	.107	.822	6	.091
Fe	kontrol	.249	6	.200*	.877	6	.254
	mix	.291	6	.123	.851	6	.159
vit.C	kontrol	.295	6	.111	.823	6	.093
	mix	.301	6	.095	.907	6	.414

a. Lilliefors Significance Correction

*. This is a lower bound of the true significance.



Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
air	Equal variances assumed	3.412	.094	-12.020	10	.000	-1.37333	.11426	-1.62791	-1.11875
	Equal variances not assumed			-12.020	8.989	.000	-1.37333	.11426	-1.63185	-1.11482
abu	Equal variances assumed	.533	.482	-8.246	10	.000	-.20995	.02546	-.26668	-.15322
	Equal variances not assumed			-8.246	9.744	.000	-.20995	.02546	-.26688	-.15301
lemak	Equal variances assumed	5.275	.045	2.131	10	.059	.07990	.03750	-.00365	.16345
	Equal variances not assumed			2.131	8.312	.064	.07990	.03750	-.00601	.16581
protein	Equal variances assumed	.183	.678	-3.808	10	.003	-.15182	.03987	-.24066	-.06298
	Equal variances not assumed			-3.808	9.185	.004	-.15182	.03987	-.24175	-.06190
karbohidrat	Equal variances assumed	3.935	.075	10.362	10	.000	1.65188	.15942	1.29668	2.00708
	Equal variances not assumed			10.362	8.940	.000	1.65188	.15942	1.29089	2.01287
Fe	Equal variances assumed	.150	.707	-6.576	10	.000	-48.54724	7.38294	-64.99746	-32.09703
	Equal variances not assumed			-6.576	9.653	.000	-48.54724	7.38294	-65.07790	-32.01658
vit.C	Equal variances assumed	.225	.645	-.022	10	.983	-.14667	6.80761	-15.31496	15.02163
	Equal variances not assumed			-.022	9.360	.983	-.14667	6.80761	-15.45665	15.16332

7.3. Worksheet Analisa Organoleptik

Worksheet Uji Ranking Hedonik

Tanggal uji : 12 Januari 2017

Jenis sampel : *Guava jelly drink*

Identifikasi Sampel

Kode

Guava jelly drink kontrol

A

Guava jelly drink dengan Fe kacang hijau

B

Guava jelly drink dengan Fe kedelai

C

Guava jelly drink dengan Fe kacang hijau + kedelai

D

Kode kombinasi urutan penyajian :

ABCD = 1 BACD = 5 CABD = 9 DABC = 13

ACBD = 2 BADC = 6 CADB = 10 DACB = 14

ABDC = 3 BCAD = 7 CBAD = 11 DBAC = 15

ADBC = 4 BCDA = 8 CBDA = 12

Penyajian :

Booth	Panelis	Kode Sampel
I	#1, 16, 31	862 245 458 396
II	#2, 17, 32	223 183 398 765
III	#3, 18, 33	756 954 174 266
I	#4, 19, 34	544 459 537 532
II	#5, 20, 35	829 681 614 547
III	#6, 21, 36	113 199 933 941
I	#7, 22, 37	481 797 918 621
II	#8, 23, 38	662 875 282 335
III	#9, 24, 39	339 477 776 818
I	#10, 25, 40	538 653 489 216
II	#11, 26, 41	721 824 749 967
III	#12, 27, 42	259 967 532 522
I	#13, 28, 43	859 475 172 986
II	#14, 29, 44	728 894 612 333
III	#15, 30, 45	191 218 116 464

7.4. Lembar Analisa Organoleptik

UJI RANKING HEDONIK			
Nama	:	Tanggal	:
Usia	:	No. HP/ IDLine	:
Produk	: <i>Guava jelly drink</i>	Atribut	: Overall
<p>Intruksi :</p> <p>Bilas dahulu mulut Anda dengan berkumur-kumur dengan air yang telah disediakan sebelum menguji sampel. Di hadapan Anda terdapat 4 sampel <i>guava jelly drink</i>. Cicipi sampel secara berurutan dari kiri ke kanan, kemudian rasakan masing-masing rasanya. Setelah mencicipi semua sampel, Anda boleh mengulang sesering yang Anda perlukan. Urutkan sampel dari yang Anda tidak sukai (=1) hingga sampel yang paling Anda sukai (=4).</p>			
Kode Sampel		Ranking (tidak boleh double)	
_____		_____	
_____		_____	
_____		_____	
_____		_____	
Terima Kasih			

UJI RANKING HEDONIK			
Nama	:	Tanggal	:
Usia	:	No. HP/ IDLine	:
Produk	: <i>Guava jelly drink</i>	Atribut	: Aroma
<p>Intruksi :</p> <p>Bilas dahulu mulut Anda dengan berkumur-kumur dengan air yang telah disediakan sebelum menguji sampel. Di hadapan Anda terdapat 4 sampel <i>guava jelly drink</i>. Cicipi sampel secara berurutan dari kiri ke kanan, kemudian rasakan masing-masing rasanya. Setelah mencicipi semua sampel, Anda boleh mengulang sesering yang Anda perlukan. Urutkan sampel dari yang Anda tidak sukai (=1) hingga sampel yang paling Anda sukai (=4).</p>			
Kode Sampel		Ranking (tidak boleh double)	
_____		_____	
_____		_____	
_____		_____	
_____		_____	
Terima Kasih			

UJI RANKING HEDONIK

Nama : Tanggal :
 Usia : No. HP/ IDLine :
 Produk : *Guava jelly drink* Atribut : **Rasa**

Intruksi :

Bilas dahulu mulut Anda dengan berkumur-kumur dengan air yang telah disediakan sebelum menguji sampel. Di hadapan Anda terdapat 4 sampel *guava jelly drink*. Cicipi sampel secara berurutan dari kiri ke kanan, kemudian rasakan masing-masing rasanya. Setelah mencicipi semua sampel, Anda boleh mengulang sesering yang Anda perlukan. Urutkan sampel dari yang Anda **tidak sukai (=1)** hingga sampel yang **paling Anda sukai (=4)**.

Kode Sampel	Ranking (tidak boleh <i>double</i>)
_____	_____
_____	_____
_____	_____
_____	_____

Terima Kasih

UJI RANKING HEDONIK

Nama : Tanggal :
 Usia : No. HP/ IDLine :
 Produk : *Guava jelly drink* Atribut : **Warna**

Intruksi :

Bilas dahulu mulut Anda dengan berkumur-kumur dengan air yang telah disediakan sebelum menguji sampel. Di hadapan Anda terdapat 4 sampel *guava jelly drink*. Cicipi sampel secara berurutan dari kiri ke kanan, kemudian rasakan masing-masing rasanya. Setelah mencicipi semua sampel, Anda boleh mengulang sesering yang Anda perlukan. Urutkan sampel dari yang Anda **tidak sukai (=1)** hingga sampel yang **paling Anda sukai (=4)**.

Kode Sampel	Ranking (tidak boleh <i>double</i>)
_____	_____
_____	_____
_____	_____
_____	_____

Terima Kasih

UJI RANKING HEDONIK

Nama : Tanggal :
 Usia : No. HP/ IDLine :
 Produk : *Guava jelly drink* Atribut : **Tekstur**

Intruksi :

Bilas dahulu mulut Anda dengan berkumur-kumur dengan air yang telah disediakan sebelum menguji sampel. Di hadapan Anda terdapat 4 sampel *guava jelly drink*. Cicipi sampel secara berurutan dari kiri ke kanan, kemudian rasakan masing-masing rasanya. Setelah mencicipi semua sampel, Anda boleh mengulang sesering yang Anda perlukan. Urutkan sampel dari yang Anda **tidak sukai (=1)** hingga sampel yang **paling Anda sukai (=4)**.

Kode Sampel	Ranking (tidak boleh <i>double</i>)
_____	_____
_____	_____
_____	_____
_____	_____

Terima Kasih

