

## 7. LAMPIRAN

### 7.1. Analisis Proksimat

#### 7.1.1. Perhitungan Kadar Air

- **Sampel AK46**

Ulangan 1:

$$\frac{0,93}{4,9} \times 100\% = 18,98\%$$

Ulangan 2:

$$\frac{0,71}{5,07} \times 100\% = 14\%$$

Ulangan 3:

$$\frac{0,78}{5,06} \times 100\% = 15,42\%$$

- **Sampel AK55**

Ulangan 1:

$$\frac{0,95}{4,1} \times 100\% = 18,81\%$$

Ulangan 2:

$$\frac{0,77}{4,16} \times 100\% = 15,62\%$$

Ulangan 3:

$$\frac{0,89}{4,11} \times 100\% = 17,80\%$$

- **Sampel AK64**

Ulangan 1:

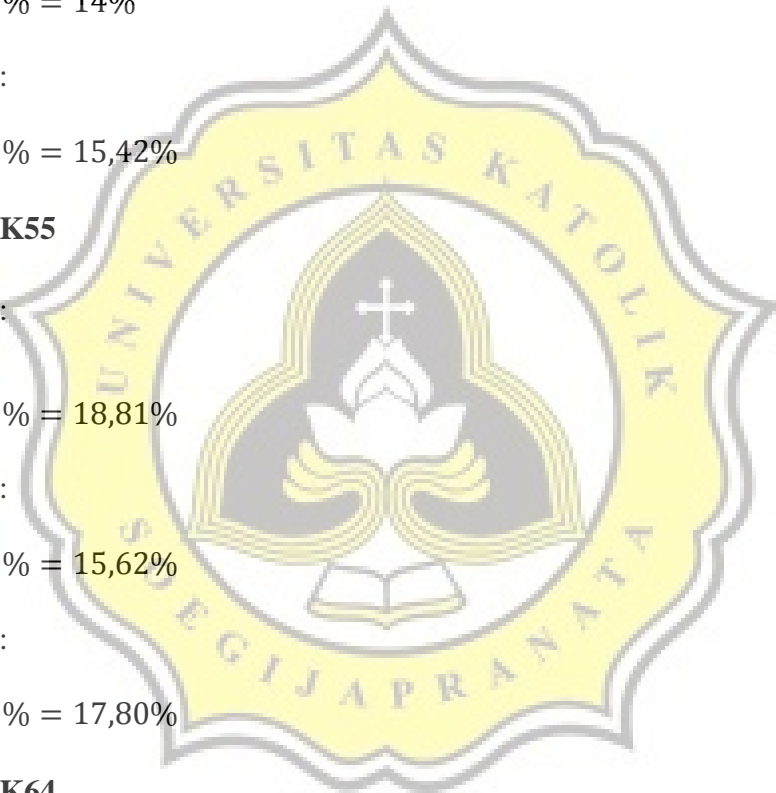
$$\frac{0,94}{4,08} \times 100\% = 18,73\%$$

Ulangan 2:

$$\frac{0,91}{4,11} \times 100\% = 18,13\%$$

Ulangan 3:

$$\frac{0,97}{4,03} \times 100\% = 19,40\%$$



### 7.1.2. Perhitungan Kadar Abu

- **Sampel AK46**

Ulangan 1:

$$\frac{0,11}{4,99} \times 100\% = 2,20\%$$

Ulangan 2:

$$\frac{0,11}{5,02} \times 100\% = 2,19\%$$

Ulangan 3:

$$\frac{0,13}{5,03} \times 100\% = 2,58\%$$

- **Sampel AK55**

Ulangan 1:

$$\frac{0,12}{5,01} \times 100\% = 2,40\%$$

Ulangan 2:

$$\frac{0,13}{5} \times 100\% = 2,60\%$$

Ulangan 3:

$$\frac{0,12}{5,05} \times 100\% = 2,38\%$$

- **Sampel AK64**

Ulangan 1:

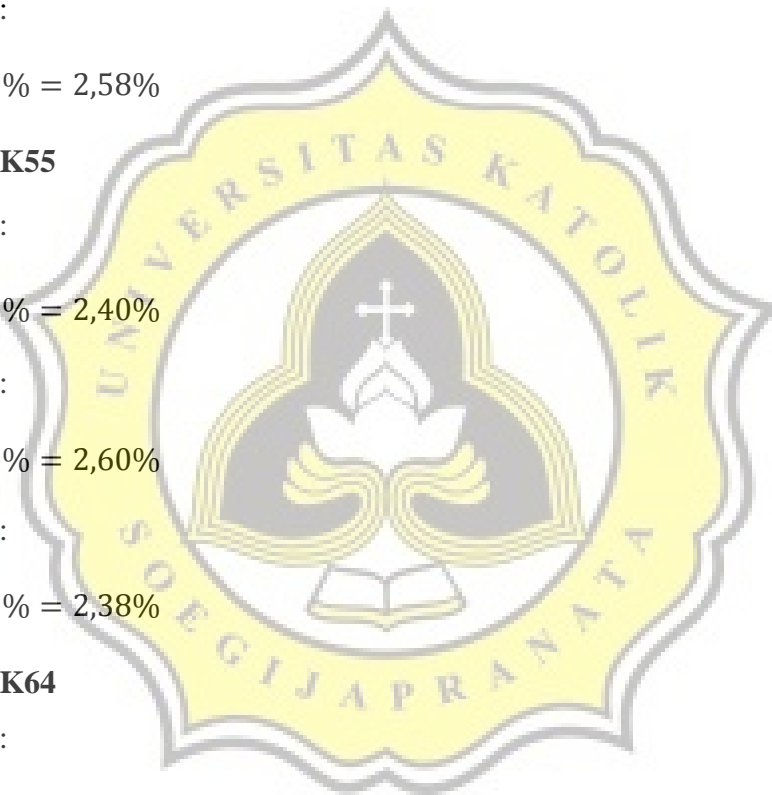
$$\frac{0,11}{4,98} \times 100\% = 2,21\%$$

Ulangan 2:

$$\frac{0,12}{5} \times 100\% = 2,40\%$$

Ulangan 3:

$$\frac{0,12}{4,41} \times 100\% = 2,72\%$$



### 7.1.3. Perhitungan Kadar Protein

- **Sampel AK46**

Ulangan 1:

$$\frac{7 \times 0,1 \times 14,008}{0,53} \times 100\% = 18,05\%$$

Ulangan 2:

$$\frac{8,5 \times 0,1 \times 14,008}{0,52} \times 100\% = 22,90\%$$

Ulangan 3:

$$\frac{12 \times 0,1 \times 14,008}{0,55} \times 100\% = 30,56\%$$

- **Sampel AK55**

Ulangan 1:

$$\frac{8,9 \times 0,1 \times 14,008}{0,53} \times 100\% = 23,52\%$$

Ulangan 2:

$$\frac{10,5 \times 0,1 \times 14,008}{0,51} \times 100\% = 28,84$$

Ulangan 3:

$$\frac{9,5 \times 0,1 \times 14,008}{0,52} \times 100\% = 25,59\%$$

- **Sampel AK64**

Ulangan 1:

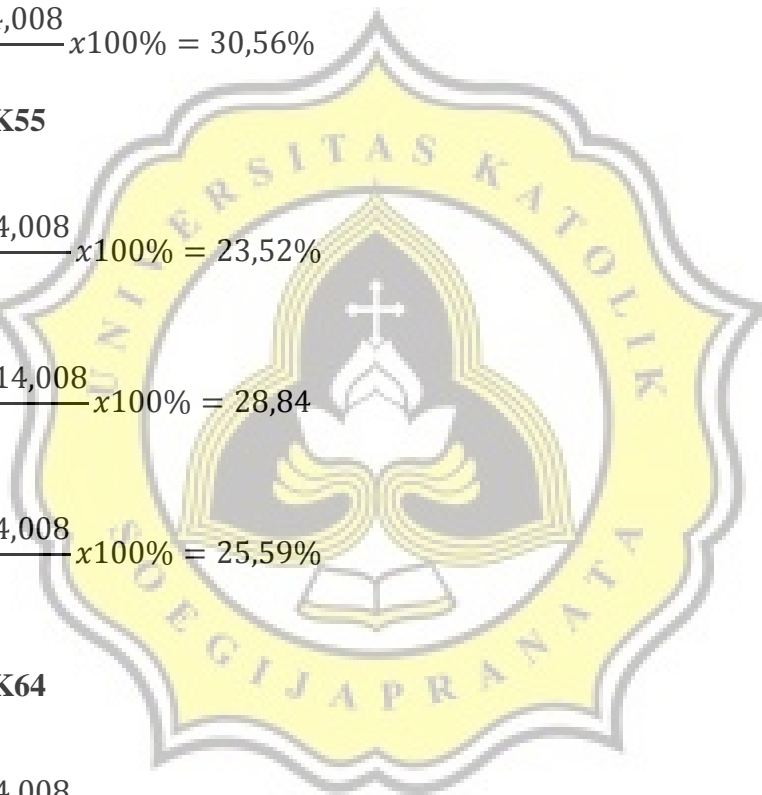
$$\frac{6,3 \times 0,1 \times 14,008}{0,51} \times 100\% = 17,30\%$$

Ulangan 2:

$$\frac{6 \times 0,1 \times 14,008}{0,5} \times 100\% = 16,81\%$$

Ulangan 3:

$$\frac{7,2 \times 0,1 \times 14,008}{0,52} \times 100\% = 19,41\%$$



#### 7.1.4. Perhitungan Kadar Lemak

- **Sampel AK46**

Ulangan 1:

$$\frac{(100 - 18,98)}{100} \times 19,61 \times 100\% = 15,89\%$$

Ulangan 2:

$$\frac{(100 - 14,00)}{100} \times 17,82 \times 100\% = 15,33\%$$

Ulangan 3:

$$\frac{(100 - 15,41)}{100} \times 18,64 \times 100\% = 15,77\%$$

- **Sampel AK55**

Ulangan 1:

$$\frac{(100 - 18,81)}{100} \times 19,61 \times 100\% = 15,96\%$$

Ulangan 2:

$$\frac{(100 - 15,61)}{100} \times 19,61 \times 100\% = 16,54\%$$

Ulangan 3:

$$\frac{(100 - 17,8)}{100} \times 20,29 \times 100\% = 16,76\%$$

- **Sampel AK64**

Ulangan 1:

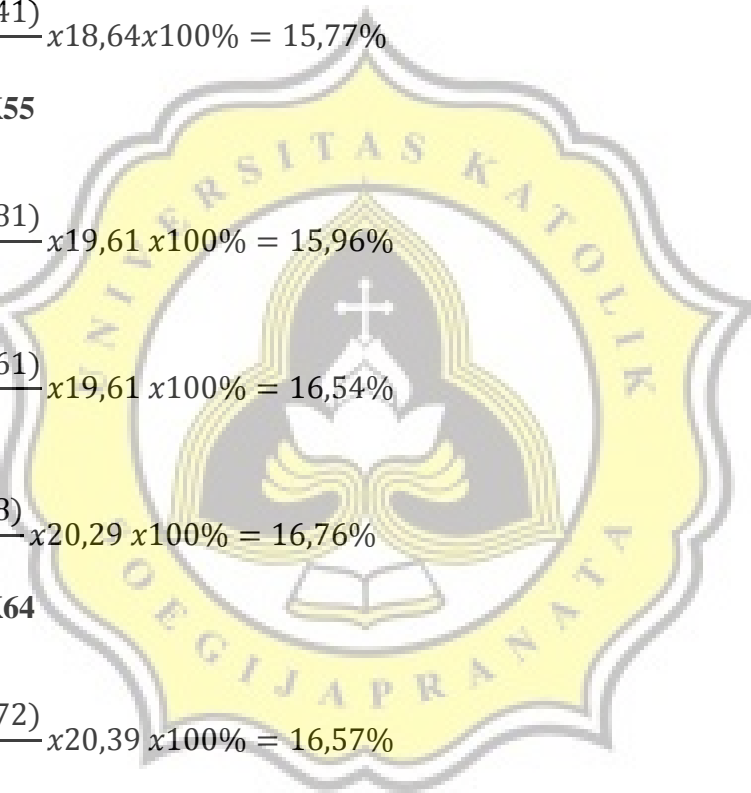
$$\frac{(100 - 18,72)}{100} \times 20,39 \times 100\% = 16,57\%$$

Ulangan 2:

$$\frac{(100 - 18,12)}{100} \times 19,42 \times 100\% = 15,90\%$$

Ulangan 3:

$$\frac{(100 - 19,4)}{100} \times 21,00 \times 100\% = 16,93\%$$



### 7.1.5. Perhitungan Kadar Karbohidrat

- **AK46**

Ulangan 1:

$$100 - (18,98 + 0,02 + 18,50 + 15,89) = 46,61\%$$

Ulangan 2:

$$100 - (14 + 0,02 + 22,90 + 15,33) = 47,75\%$$

Ulangan 3:

$$100 - (15,42 + 0,03 + 30,56 + 15,77) = 38,23\%$$

- **AK55**

Ulangan 1:

$$100 - (18,81 + 0,02 + 23,52 + 15,96) = 41,48\%$$

Ulangan 2:

$$100 - (15,62 + 0,03 + 28,84 + 16,54) = 38,98\%$$

Ulangan 3:

$$100 - (17,80 + 0,02 + 25,59 + 16,76) = 39,82\%$$

- **AK64**

Ulangan 1:

$$100 - (18,73 + 0,02 + 17,30 + 16,57) = 47,38\%$$

Ulangan 2:

$$100 - (18,13 + 0,02 + 16,81 + 15,90) = 49,14\%$$

Ulangan 3:

$$100 - (19,40 + 0,03 + 19,40 + 16,93) = 44,25\%$$

### 7.1.6. Perhitungan Total Kalori

- **AK46**

Ulangan 1:

$$\frac{(18,50 \times 4 + 15,89 \times 9 + 46,61 \times 4)}{100} \times 30 = 121,03$$

Ulangan 2:

$$\frac{(22,90x4 + 15,33x9 + 47,75x4)}{100}x30 = 126,16$$

Ulangan 3:

$$\frac{(30,56x4 + 15,77x9 + 38,23x4)}{100}x30 = 125,13$$

• **AK55**

Ulangan 1:

$$\frac{(23,52x4 + 15,96x9 + 41,68x4)}{100}x30 = 121,34$$

Ulangan 2:

$$\frac{(28,84x4 + 16,54x9 + 38,98x4)}{100}x30 = 126,04$$

Ulangan 3:

$$\frac{(25,59x4 + 16,76x9 + 39,82x4)}{100}x30 = 123,75$$

• **AK64**

Ulangan 1:

$$\frac{(17,30x4 + 16,57x9 + 47,38x4)}{100}x30 = 123,36$$

Ulangan 2:

$$\frac{(16,81x4 + 15,9x9 + 49,14x4)}{100}x30 = 122,07$$

Ulangan 3:

$$\frac{(19,40x4 + 16,93x9 + 44,25x4)}{100}x30 = 122,08$$

## 7.2. Data

### 7.2.1. Kadar Air

No	Nama Sampel	Berat Cawan sebelum	Berat sampel + cawan sebelum	Berat Cawan + sampel sesudah	Berat sampel awal	Berat sampel kering	Berat Air dalam sampel	Kadar Air
1	AK-46	24,8	29,7	28,77	4,9	3,97	0,93	18,98
2		25,9	30,97	30,26	5,07	4,36	0,71	14,00
3		21,2	26,26	25,48	5,06	4,28	0,78	15,42
1	AK-55	23,8	28,85	27,9	5,05	4,1	0,95	18,81
2		23,3	28,23	27,46	4,93	4,16	0,77	15,62
3		24,2	29,2	28,31	5	4,11	0,89	17,80
1	AK-64	23,07	28,09	27,15	5,02	4,08	0,94	18,73
2		24,18	29,2	28,29	5,02	4,11	0,91	18,13
3		21,83	26,83	25,86	5	4,03	0,97	19,40

### 7.2.2. Kadar Abu

No	Nama Sampel	Berat cawan sebelum	Berat sampel + cawan sebelum	Berat Cawan + sampel sesudah	Berat sampel awal	Berat sampel kering	Kadar Abu
1	AK-46	21,82	26,81	21,93	4,99	0,11	2,20
2		26,18	31,2	26,29	5,02	0,11	2,19
3		26,86	31,89	26,99	5,03	0,13	2,58
1	AK-55	25,35	30,36	25,47	5,01	0,12	2,40
2		22,78	27,78	22,91	5	0,13	2,60
3		28,13	33,18	28,25	5,05	0,12	2,38
1	AK-64	23,06	28,04	23,17	4,98	0,11	2,21
2		23,73	28,73	23,85	5	0,12	2,40
3		22,65	27,06	22,77	4,41	0,12	2,72

### 7.2.3. Kadar Protein

No	Nama Sampel	Berat sampel awal	TAT HCl	Kadar Protein
1	AK-46	0,53	7	18,50
2		0,52	8,5	22,90
3		0,55	12	30,56
1	AK-55	0,53	8,9	23,52
2		0,51	10,5	28,84
3		0,52	9,5	25,59
1	AK-64	0,51	6,3	17,30
2		0,5	6	16,81
3		0,52	7,2	19,40

### 7.2.4. Kadar Lemak

No	Nama Sampel	Berat sampel awal	Berat cawan	Berat Cawan + Residu	Berat lemak	Kadar lemak berat kering	Kadar lemak berat basah
1	AK-46	1	29,2	29,28	0,08	17,65	14,30
2		1,01	32,65	32,83	0,18	15,84	13,62
3		1,02	30,82	31,01	0,19	16,50	13,96
1	AK-55	1,03	30,37	30,57	0,2	19,61	15,92
2		1	29,17	29,37	0,2	20,39	17,20
3		1,02	30,89	31,09	0,2	20,39	16,76
1	AK-64	1,03	42,39	42,63	0,24	21,36	17,36
2		1,01	37,52	37,75	0,23	22,33	18,28
3		1,01	59,49	59,69	0,2	21,00	16,93



### 7.2.5. Kadar Karbohidrat

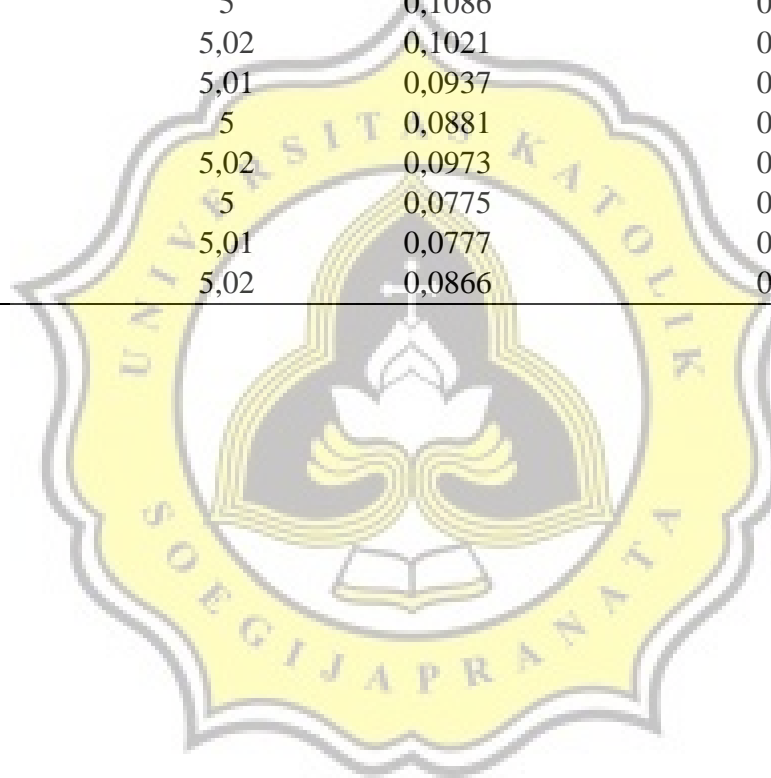
No	Nama Sampel	Kadar Air	Kadar Abu	Kadar Protein	Kadar Lemak	Kadar Karbohidrat
1	AK-46	18,98	0,02	18,50	17,65	44,85
2		14,00	0,02	22,90	15,84	47,23
3		15,42	0,03	30,56	16,50	37,49
1	AK-55	18,81	0,02	23,52	19,61	38,03
2		15,62	0,03	28,84	20,39	35,13
3		17,80	0,02	25,59	20,39	36,20
1	AK-64	18,73	0,02	17,30	21,36	42,59
2		18,13	0,02	16,81	22,33	42,71
3		19,40	0,03	19,40	21,00	40,18

### 7.2.6. Kalori

No	Nama Sampel	Protein	Lemak	Karbohidrat	Total	Kalori per saji (30g)
1	AK-46	74,00	158,82	179,40	412,23	123,6686251
2		91,59	142,57	188,94	423,10	126,9313477
3		122,25	148,54	149,97	420,76	126,2282439
1	AK-55	94,09	176,47	152,13	422,70	126,8087648
2		115,36	183,50	140,51	439,36	131,8089308
3		102,37	183,50	144,79	430,65	129,1940094
1	AK-64	69,22	192,23	170,36	431,81	129,5422094
2		67,24	200,97	170,84	439,04	131,7133576
3		77,58	189,00	160,71	427,29	128,1873469

### 7.2.7. Kadar Betakaroten

Nama sampel	Ulangan	Berat Sampel	Absorbansi	Kadar Betakaroten(mg/100g)
AK46	1	4,99	0,1174	0,589
	2	5	0,1086	0,513
	3	5,02	0,1021	0,455
AK55	1	5,01	0,0937	0,385
	2	5	0,0881	0,338
	3	5,02	0,0973	0,415
AK64	1	5	0,0775	0,247
	2	5,01	0,0777	0,248
	3	5,02	0,0866	0,323



### 7.3. Analisa SPSS

#### 7.3.1. Analisa Normalitas

**One-Sample Kolmogorov-Smirnov Test**

		Air_T	Abu_T	Protein_T	Lemak_T	Karbo_T	Kalori_T
N		9	9	9	9	9	9
Normal Parameters <sup>a,b</sup>	Mean	17.4313	2.4091	22.6022	19.6871	40.2556	128.2314
	Std. Deviation	1.92261	.19215	5.01049	2.01815	4.36856	2.64847
Most Extreme Differences	Absolute	.243	.185	.183	.191	.157	.133
	Positive	.160	.185	.183	.095	.157	.133
	Negative	-.243	-.153	-.124	-.191	-.148	-.128
Test Statistic		.243	.185	.183	.191	.157	.133
Asymp. Sig. (2-tailed)		.135 <sup>c</sup>	.200 <sup>c,d</sup>	.200 <sup>c,d</sup>	.200 <sup>c,d</sup>	.200 <sup>c,d</sup>	.200 <sup>c,d</sup>

a. Test distribution is Normal.

b. Calculated from data.

c. Lilliefors Significance Correction.

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

### 7.3.2. Kadar Air

#### Air\_T

Tukey HSD<sup>a</sup>

KodeT	N	Subset for alpha =	
		0.05	1
ak46	3	16,1329	
ak55	3	17,4102	
ak64	3	18,7509	
Sig.			,251

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3,000.

### 7.3.3. Kadar Abu

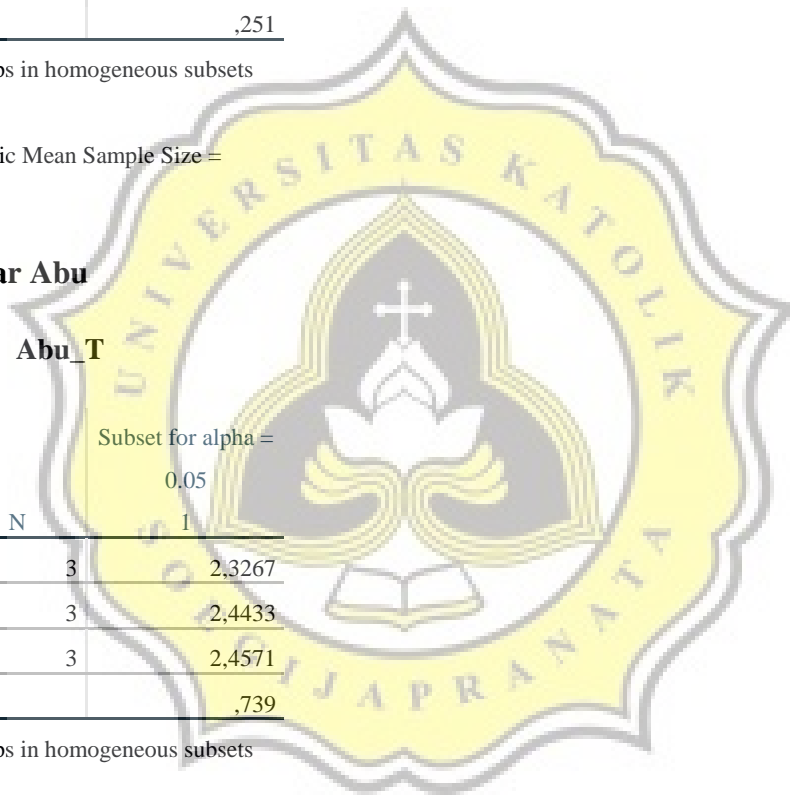
#### Abu\_T

Tukey HSD<sup>a</sup>

KodeT	N	Subset for alpha =	
		0.05	1
ak46	3	2,3267	
ak64	3	2,4433	
ak55	3	2,4571	
Sig.			,739

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3,000.



### 7.3.4. Kadar Protein

#### Protein\_T

Tukey HSD<sup>a</sup>

KodeT	N	Subset for alpha =	
		0.05	1
ak64	3	17,8367	
ak46	3	23,9867	
ak55	3	25,9833	
Sig.			,097

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3,000.

### 7.3.5. Kadar Lemak

#### Lemak\_T

Tukey HSD<sup>a</sup>

KodeT	N	Subset for alpha =	
		0.05	1
ak46	3	15.6633	
ak55	3	16.4200	
ak64	3	16.4667	
Sig.			.125

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

### 7.3.6. Kadar Karbohidrat

**Kalori\_T**

Tukey HSD<sup>a</sup>

KodeT	N	Subset for alpha = 0.05 1
ak64	3	122.1696
ak55	3	123.7083
ak46	3	124.1077
Sig.		.525

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

### 7.3.7. Kalori

**Kalori\_T**

Tukey HSD<sup>a</sup>

KodeT	N	Subset for alpha = 0.05 1
ak64	3	122.1696
ak55	3	123.7083
ak46	3	124.1077
Sig.		.525

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

### 7.3.8. Kadar Betakaroten

#### IU\_100g

Tukey HSD<sup>a</sup>

NamaSampel	N	Subset for alpha = 0.05	
		1	2
AK64	3	272.1950	
AK55	3	377.7400	
AK46	3		519.9477
Sig.		.100	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

#### Micro\_RE

Tukey HSD<sup>a</sup>

NamaSampel	N	Subset for alpha = 0.05	
		1	2
AK64	3	81.6585	
AK55	3	113.3220	
AK46	3		155.9843
Sig.		.100	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

### 7.3.9. Analisa Sensoris

#### 7.3.9.1. Warna

#### Test Statistics<sup>a</sup>

N		50
Chi-Square		12,408
df		3
Asymp. Sig.		,006
Monte Carlo	Sig.	,000
Sig.	95% Confidence Interval	Lower Bound
		Upper Bound
		,088

a. Friedman Test

### 7.3.9.2. Aroma

#### Test Statistics<sup>a</sup>

N			50
Chi-Square			12,408
df			3
Asymp. Sig.			,006
Monte Carlo Sig.	Sig.		,000
	95% Confidence Interval	Lower Bound	,000
		Upper Bound	,058

a. Friedman Test

### 7.3.9.3. Tekstur

#### Test Statistics<sup>a</sup>

N			50
Chi-Square			11,808
df			3
Asymp. Sig.			,008
Monte Carlo Sig.	Sig.		,020
	95% Confidence Interval	Lower Bound	,000
		Upper Bound	,059

a. Friedman Test

### 7.3.9.4. Rasa

#### Test Statistics<sup>a</sup>

N			50
Chi-Square			15,336
df			3
Asymp. Sig.			,002
Monte Carlo Sig.	Sig.		,000
	95% Confidence Interval	Lower Bound	,000
		Upper Bound	,058



a. Friedman Test

### 7.3.9.5. Overall

Test Statistics<sup>a</sup>

N			50
Chi-Square			7,272
df			3
Asymp. Sig.			,064
Monte Carlo Sig.	Sig.		,080
	95% Confidence Interval	Lower Bound	,005
		Upper Bound	,155

a. Friedman Test

## 7.4. Foto

### 7.4.1. Robot Coupe dan Grinding Mill (MJIM)



### 7.4.2. Perajang koro

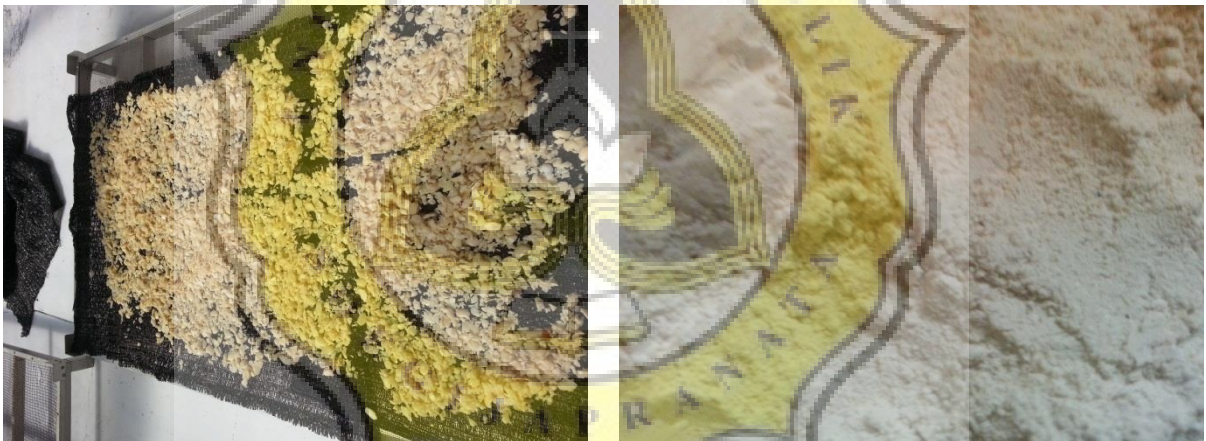


### 7.4.3. Pengolahan koro

#### 7.4.3.1. Koro rajang dan Penjemuran koro (STD)



#### 7.4.3.2. Koro rajang kering dan tepung koro



### 7.4.4. Pengolahan ubi

#### 7.4.4.1. Pemotongan ubi dan penjemuran ubi (STD)

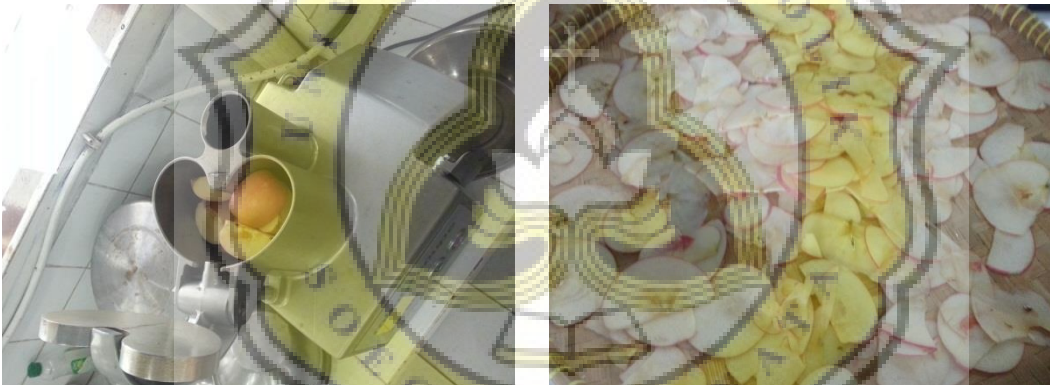


#### 7.4.4.2. Ubi kering (STD) dan tepung ubi



#### 7.4.5. Pengolahan apel

##### 7.4.5.1. Pemotongan apel



##### 7.4.5.2. Penjemuran apel dan apel kering (STD)

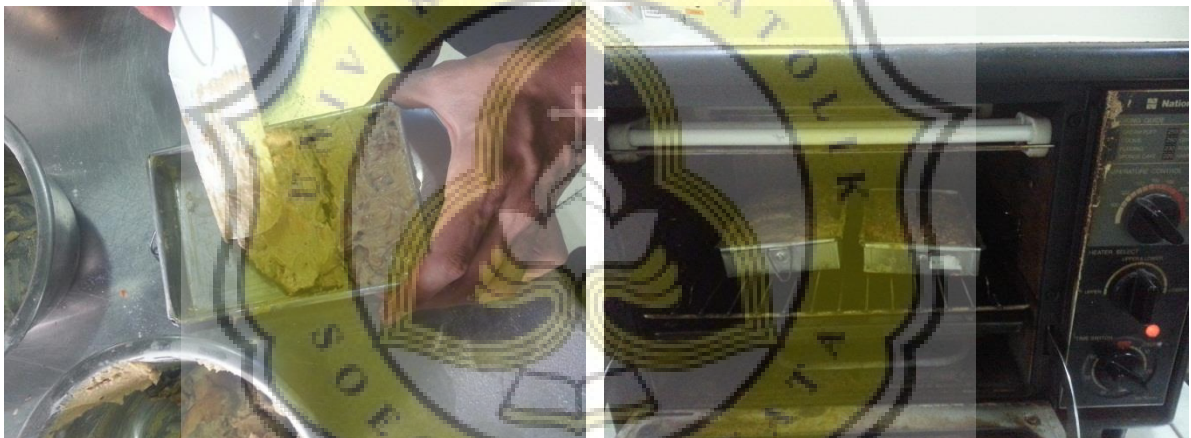


#### 7.4.6. Pembuatan *snack bar*

##### 7.4.6.1. Pencampuran bahan tambahan dengan bahan utama



##### 7.4.6.2. Pencetakan dan Pengovenan



##### 7.4.6.3. Hasil akhir dan pemotongan (AK46, AK55, dan AK64)



#### 7.4.7. Produk Kontrol dan foto kandungan nutrisinya



	Jumlah per sajian	%AKG	Jumlah per sajian	%AKG
<b>INFORMASI GIZI</b>	<b>Lemak Total 6g</b>	10%	<b>Karbohidrat Total 14g</b>	5%
	Lemak jenuh 2,5g	14%	Serat pangan 4g	14%
	<b>Kolesterol 4mg</b>	1%	Gula 11g	0%
1 bar (30g)	<b>Protein 5g</b>	8%	<b>Natrium 10mg</b>	4%
per kemasan: 1			Kalium 180mg	8%
<b>kal 130kkal</b>	Vitamin A	4%	Kalsium	6%
lemak 60kkal	Vitamin B1	10%	Besi	20%
	Vitamin B2	8%	Asem Lemak	10%
	Vitamin B6	8%	<b>Magnesium</b>	10%
	Vitamin E	8%		

Dasarkan kebutuhan energi 2000 kkal. Kebutuhan energi anda mungkin lebih tinggi atau lebih rendah.