

# LAMPIRAN



## Lampiran 01. Data Hasil Pengamatan dan Perhitungan Analisis untuk Kadar Gula

Tabel 04. Data kadar gula (%) jeruk keprok (*Citrus nobilis* L.var *chrysoarpa*).

Perlakuan	Kadar gula (%)	Rata-rata	Penurunan	Rata-rata
AP	9.262			
	9.494	9.494		
	9.726			
POL1	7.848		1.646	
	7.616	7.848	1.878	1.646
	8.079		1.415	
PIL1	8.245		1.249	
	8.337	8.429	1.157	1.065
	8.704		0.790	
POL2	6.771		2.723	
	6.550	6.850	2.944	2.644
	7.229		2.265	
PIL2	7.708		1.786	
	7.937	7.755	1.557	1.739
	7.619		1.875	
PIL3	6.269		3.225	
	6.357	6.447	3.137	3.047
	6.716		2.778	
P2L3	7.117		2.377	
	7.206	7.072	2.288	2.422
	6.894		2.600	

Sumber : data primer Agustina Fitriani, 2004

Tabel 05. Hasil transformasi arcsin

Perlakuan	Penurunan	Rata-rata	Transformasi	Rerata
POL1	1.646		7.27	
	1.878	1.646	7.71	7.26
	1.415		6.80	
PIL1	1.249		6.29	
	1.157	1.065	6.02	5.80
	0.790		5.10	
POL2	2.723		9.46	
	2.944	2.644	9.81	9.26
	2.265		8.53	
PIL2	1.786		7.49	
	1.557	1.739	7.04	6.41
	1.875		7.71	
POL3	3.225		10.31	
	3.137	3.047	10.14	9.97
	2.778		9.46	
PIL3	2.377		8.72	
	2.288	2.422	8.53	8.84
	2.600		9.28	

Tabel 06. Hasil Perhitungan Analisis .

Perlakuan	Ulangan			Jumlah	Rata-rata
	U1	U2	U3		
P0L1	7.27	7.71	6.80	21.78	7.26
P1L1	6.29	6.02	5.10	17.41	5.80
P0L2	9.46	9.81	8.53	27.80	9.26
P1L2	7.49	7.04	7.71	22.24	6.41
P0L3	10.31	10.14	9.46	29.91	9.97
P1L3	8.72	8.53	9.28	26.53	8.84
Jumlah	49.54	49.25	46.88	145.67	7.92

Sumber : data primer Agustina Fitriani, 2004

Perhitungan Analisis Ragam :

a(kemasan); b(lama penyimpanan); n(ulangan)

### 1. Derajat bebas ( db )

- db total = ( a ) ( b ) ( n ) - 1 = 2.3.3-1 = 17
- db perlakuan = ( a ) ( b ) - 1 = 2.3 - 1 = 5
- db galat = a.b ( n-1 ) = 2.3 (3-1) = 12
- db faktor A = a - 1 = 2 - 1 = 1
- db faktor B = b - 1 = 3 - 1 = 2
- db interaksi faktor AB = (a-1) -(b-1) = 2

### 2. Faktor korelasi ( FK )

$$FK = \frac{jumlahtotal}{abn} = \frac{145.67^2}{18} = 1178.87$$

### 3. Jumlah kuadrat ( JK )

$$\begin{aligned} \text{JK total} &= \sum y_{ij}^2 - FK \\ &= (6.29^2 + 6.02^2 + 5.10^2 + \dots + 9.46^2) - 1178.87 = 38.60 \end{aligned}$$

$$\begin{aligned} \text{JK perlakuan} &= \frac{\sum (ij)^2}{n} - FK \\ &= \frac{(17.41^2 + 21.78^2 + \dots + 29.91^2)}{3} - 1178.87 = 35.59 \end{aligned}$$

$$\begin{aligned} \text{JK galat} &= \text{JK total} - \text{JK perlakuan} \\ &= 38.60 - 35.59 = 3.01 \end{aligned}$$

$$\text{JKP} = \text{JK ( LP )} + \text{JK ( P )} + \text{JK ( L*P )}$$

$$\begin{aligned} \text{JK ( B )} &= \frac{\sum y_{.j}^2}{an} - FK \\ &= \frac{(39.19^2 + 50.04^2 + 56.44^2)}{2.3} - 1178.87 = 25.35 \end{aligned}$$

$$\begin{aligned} \text{JK ( A )} &= \frac{\sum y_{i.}^2}{bn} - FK \\ &= \frac{(66.18^2 + 79.49^2)}{3.3} - 1178.87 = 9.84 \end{aligned}$$

$$\begin{aligned} \text{JK ( AB )} &= \text{JKP} - \text{JK ( A )} - \text{JK ( B )} \\ &= 35.59 - 9.84 - 25.35 = 0.4 \end{aligned}$$

### 4. Kuadrat Tengah ( KT )

$$\text{KT ( B )} = \frac{JK(B)}{b-1} = \frac{25.35}{2} = 12.67$$

$$\text{KT ( A )} = \frac{JK(A)}{a-1} = \frac{9.84}{1} = 9.84$$

$$\text{KT ( AB )} = \frac{JK(AB)}{(a-1)(b-1)} = \frac{0.4}{2} = 0.2$$

$$KT \text{ galat} = \frac{JKG}{ab(n-1)} = \frac{13.01}{12} = 0.25$$

Tabel 07. Anava untuk kadar gula.

Sumber Keragaman	Derajat Bebas	Jumlah Kuadrat	Kuadrat Tengah	F <sub>hitung</sub>	F <sub>tabel</sub>
B	2	25.35	12.67	50.68*	3,88
A	1	9.84	9.84	9.59*	4,75
AB	2	0.4	0.2	0.8	3,88
Galat	12	3.01	0.25		
Total	17	38.60			

Keterangan : Angka yang diikuti tanda \* menunjukkan lama penyimpanan dan kemasan berpengaruh nyata terhadap penurunan kadar gula.

#### Uji Wilayah Ganda Duncan

##### 1. Perbandingan pengaruh utama untuk lama penyimpanan

$$S_y = \sqrt{\frac{KTG}{bn}} = 0,16$$

$$D = R \times S_y$$

P	2	3	4
R	3,08	3,23	3,33
D	0.49	0.51	0.53

#### Selisih Nilai Tengah

Perlakuan	N. Tengah	L3	L2	L1
L3	9.40	-		
L2	7.83	1.57*	-	
L1	6.53	2.87*	1.3*	-

\* = Berbeda nyata

Kesimpulan : L1            L2            L3  
                                  a            b            c

## 2. Perbandingan pengaruh utama untuk kemasan

$$S_y = \sqrt{\frac{KTG}{an}} = 0,20$$

$$D = R \times S_y$$

P	2	3
R	3,08	3,23
D	0.61	0.64

## Selisih Nilai Tengah

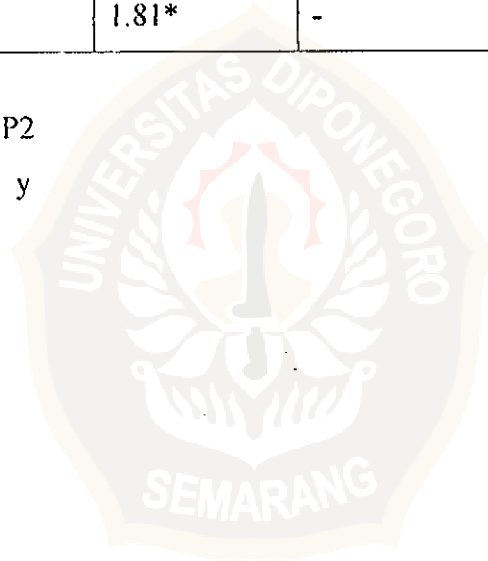
Perlakuan	N. Tengah	P2	P1
P2	8.83	-	
P1	7.02	1.81*	-

Kesimpulan : P1

P2

x

y



Lampiran 02. Data Hasil Pengamatan dan Perhitungan Analisis untuk Kadar Vitamin C

Tabel 08. Data kadar vitamin C.

Perlakuan	Kadar vitamin (mg/gr)	Rata-rata	Penurunan	Rata-rata
AP	33.302			
	33.579	33.91		
	34.857			
P0L1	30.537		3.37	
	29.111	29.99	4.79	3.91
	30.343		3,56	
P1L1	31.610		2.30	
	29.018	29.53	4.89	4.38
	27.968		5.94	
P0L2	18.886		15.02	
	19.408	18.96	14.50	14.95
	18.586		15.32	
P1L2	21.049		12.86	
	20.438	20.915	13.47	12.99
	21.258		12.65	
P0L3	15.882		18.09	
	14.894	15.56	19.02	18.35
	15.973		17.94	
P1L3	16.581		17.33	
	16.864	16.79	17.05	17.12
	16.943		16.97	



Tabel 09. Hasil Perhitungan Analisis.

Perlakuan	Ulangan			Jumlah	Rata-rata
	U1	U2	U3		
P0L1	3.37	4.79	3.56	11.72	3.91
P1L1	2.30	4.89	5.94	13.13	4.38
P0L2	15.02	14.50	15.32	44.84	14.95
P1L2	12.86	13.47	12.65	38.98	12.99
P0L3	18.09	19.02	17.94	55.05	18.35
P1L3	17.33	17.05	16.97	51.35	17.12
Jumlah	68.97	73.72	72.38	215.07	-
Rata-rata					11.95

Sumber : data primer Agustina Fitriani, 2003

##### 5. Faktor korelasi ( FK )

$$FK = 2569.73$$

##### 6. Jumlah kuadrat ( JK )

$$\begin{aligned} JK \text{ total} &= \sum y_{ij}^2 - FK \\ &= 608.99 \end{aligned}$$

$$\begin{aligned} JK \text{ perlakuan} &= \frac{\sum (ij)^2}{n} - FK \\ &= 599.32 \end{aligned}$$

$$\begin{aligned} JK \text{ galat} &= Jk \text{ total} - Jk \text{ perlakuan} \\ &= 608.99 - 599.32 = 9.67 \end{aligned}$$

$$JKP = JK ( B ) + JK ( A ) + JK ( AB )$$

$$JK(B) = \frac{\sum y_j^2}{an} - FK = 590.98$$

$$JK(A) = \frac{\sum y_{i.}^2}{bn} - FK$$

$$= 3.68$$

$$JK(AB) = JKP - JK(A) - JK(B)$$

$$= 599.32 - 3.68 - 590.98 = 4.66$$

### 7. Kuadrat Tengah (KT)

$$KT(B) = \frac{JK(LP)}{b-1} = 295.49$$

$$KT(A) = \frac{JK(P)}{a-1} = 3.68$$

$$KT(AB) = \frac{JK(AB)}{(a-1)(b-1)} = 2.33$$

$$KT \text{ galat} = \frac{JKG}{a.b(n-1)} = 0.81$$

Tabel 10. Anava untuk vitamin C

Sumber Keragaman	Derajat Bebas	Jumlah Kuadrat	Kuadrat Tengah	F <sub>hitung</sub>	F <sub>tabel</sub>
B	2	590.98	295.49	364.80*	3,88
A	1	3.68	3.68	4.54	4,75
AB	2	4.66	2.33	2.86	3,88
Galat	12	9.67	0.81		
Total	17				

Keterangan : Angka yang diikuti tanda \* menunjukkan lama penyimpanan berpengaruh nyata terhadap penurunan kadar vitamin C.

### Uji Wilayah Ganda Duncan

#### 1. Perbandingan pengaruh utama untuk lama penyimpanan

$$S_y = \sqrt{\frac{KTG}{bn}} = 0.30$$

$$D = R \times S_y$$

P	2	3	4
R	3,08	3,23	3,33
D	0.92	0.96	0.99

#### Selisih Nilai Tengah

Perlakuan	N. Tengah	L3	L2	L1
L3	17.73	-		
L2	13.97	3.76*	-	
L1	4.14	13.59*	9.83*	-

\* = Berbeda nyata

Kesimpulan : L1

a

L2

b

L3

c

#### 2. Perbandingan pengaruh utama untuk kemasan

$$S_y = \sqrt{\frac{KTG}{an}} = 0.36$$

$$D = R \times S_y$$

P	2	3
R	3,08	3,23
D	1.11	1.16

## Selisih Nilai Tengah

Perlakuan	N. Tengah	P2	P1
P2	12.40	-	
P1	11.49	0.91	-

Kesimpulan : P2

x

P1

x



Lampiran 03. Data Hasil Analisis

**UNIVERSITAS GADJAH MADA**  
**FAKULTAS TEKNOLOGI PERTANIAN**

Jurusan : Pengolahan Hasil Pertanian  
Bulaksumur, Telp. 88688 Pes. 405, Yogyakarta

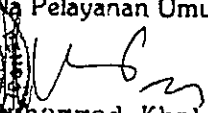
## HASIL ANALISA

NO. :            / PS /            /

No.	Sampel / Kode	Macam Analisa	Hasil Analisa
1.	Jeruk AP1	Vit C (mg/100g)	33.3020 33.5799 34.8577
		Gula reduksi (%)	9.2623 9.4943 9.7263
2.	,, P1L1	Vit C	31.6103 29.0177 27.9685
		Gula reduksi	8.2448 8.3366 8.7039
3.	,, P2L1	Gula reduksi	7.8477 7.6163 8.0791
		Vit C	30.5375 29.1108 30.3436
4.	,, P1L2	Vit C	21.0494 20.4389 21.2588
		Gula reduksi	7.7079 7.9372 7.6190
5.	,, P2L2	Vit C	18.8857 19.4083 18.5861
		Gula reduksi	6.7707 6.5502 7.2297
6.	,, P1L3	Vit C	16.5811 16.8647 16.9434
		Gulareduksi8	7.1167 7.2058 6.8937
7.	,, P2L3	Vit C	15.8217 14.8949 15.9735
		Gula reduksi	6.2686 6.3566 6.7157

Catatan :

1. Hasil analisa tidak untuk diumumkan.
2. Berlaku pada waktu sampel dianalisa.

Yogyakarta, 23 Jul 2004  
Pengelola Pelayanan Umum,  
  
Muhammad Khak

