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Pengaruh Pengeringan (*Cabinet Dryer* dan *Freeze Drying*) dan Pengemasan (*Botol Gelas* dan *Metalized Plastic*) terhadap Aktivitas Antioksidan serta Umur Simpan Kapsul Bubuk Biji Anggur (Segar dan Fermentasi)

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Lampiran 1. Analisa Pengaruh Kombinasi Perlakuan (Biji, Pengemasan, dan Pengeringan) terhadap Aktivitas Antioksidan Bubuk Biji Anggur

a. Uji Oneway ANOVA

ANOVA						
		Sum of Squares	df	Mean Square	F	Sig.
Antio_0	Between Groups	79,116	7	11,302	3,788	,004
	Within Groups	95,471	32	2,983		
	Total	174,587	39			
Antio_7	Between Groups	578,470	7	82,639	8,972	,000
	Within Groups	294,756	32	9,211		
	Total	873,226	39			
Antio_14	Between Groups	574,644	7	82,092	27,232	,000
	Within Groups	96,465	32	3,015		
	Total	671,110	39			
Antio_21	Between Groups	4457,585	7	636,798	208,863	,000
	Within Groups	97,564	32	3,049		
	Total	4555,149	39			
Antio_28	Between Groups	3637,456	7	519,637	111,761	,000
	Within Groups	148,785	32	4,650		
	Total	3786,241	39			

b. Post Hoc Test

Homogenous Subsets

Antioksidan_H-0				
Duncan ^a				
Perl	N	Subset for alpha = 0.05		
		1	2	3
BFGD	5	67,0900		
BSD	5	67,9500	67,9500	
SFGD	5		69,7320	69,7320
BSFD	5			70,6600
SSFD	5			70,6900
SFFD	5			70,7700
BFFD	5			70,8820
SSCD	5			70,9940
Sig.		,437	,113	,320

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 5,000.

Antioksidan_H-7

Duncan^a

Perl	N	Subset for alpha = 0.05			
		1	2	3	4
SFCD	5	58,1920			
BSCD	5	58,7920			
BFFD	5	60,1760			
BFGD	5	61,7200	61,7200		
SSCD	5		65,0860	65,0860	
BSFD	5		65,7120	65,7120	65,7120
SFFD	5			66,1480	66,1480
SSFD	5				69,6260
Sig.		,102	,057	,607	,062

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 5,000.

Antioksidan_H-14

Duncan^a

Perl	N	Subset for alpha = 0.05		
		1	2	3
SFCD	5	55,4260		
SSCD	5	55,5380		
BFFD	5	55,9580		
BSCD	5	56,2300		
BFGD	5	56,2380		
SSFD	5		62,3420	
SFFD	5		62,8780	
BSFD	5			65,3200
Sig.		,517	,629	1,000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 5,000.

Antioksidan_H-28

Duncan^a

Perl	N	Subset for alpha = 0.05				
		1	2	3	4	5
SFCD	5	18,6880				
BFGD	5		27,1400			
SSCD	5			36,2400		
BFFD	5			37,1600		
BSCD	5				43,0180	
SFFD	5				43,1180	
SSFD	5				43,9500	
BSFD	5					50,1880
Sig.		1,000	1,000	,505	,525	1,000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 5,000.

Lampiran 2. Analisa Pengaruh Masing-masing Perlakuan Terhadap Aktivitas Antioksidan Bubuk Biji Anggur Menggunakan Uji Independent Samples T-Test

2.1. Perlakuan Kemasan Terhadap Aktivitas Antioksidan Bubuk Biji Anggur

Group Statistics

	Kemasan	N	Mean	Std. Deviation	Std. Error Mean
Antioksidan	Sachet	100	54,8334	15,31657	1,53166
	Botol	100	54,4634	12,71411	1,27141

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
Antioksidan	Equal variances assumed	2,601	,108	,186	198	,853	,37000	1,99059	-3,55548	4,29548
	Equal variances not assumed			,186	191,509	,853	,37000	1,99059	-3,55630	4,29630

2.2. Jenis Biji Terhadap Aktivitas Antioksidan Bubuk Biji Anggur

Group Statistics

	jenis_biji	N	Mean	Std. Deviation	Std. Error Mean
Antioksidan	segar	100	57,8595	10,49523	1,04952
	fermentasi	100	51,4373	16,28910	1,62891

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
Antioksidan	Equal variances assumed	23,325	,000	3,314	198	,001	6,42220	1,93774	2,60094	10,24346
	Equal variances not assumed			3,314	169,114	,001	6,42220	1,93774	2,59692	10,24748

2.3. Pengeringan Terhadap Aktivitas Antioksidan Bubuk Biji Anggur

Group Statistics

	Pengeringan	N	Mean	Std. Deviation	Std. Error Mean
Antioksidan	freeze_dryer	100	58,3523	10,81799	1,08180
	Cabinet dryer	100	50,9445	15,86100	1,58610

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
Antioksidan	Equal variances assumed	14,485	,000	3,858	198	,000	7,40780	1,91990	3,62173	11,19387
	Equal variances not assumed			3,858	174,722	,000	7,40780	1,91990	3,61863	11,19697

Lampiran 3. Perhitungan Umur Simpan Sebenarnya Kapsul Bubuk Biji Anggur Pada Suhu 15°C

a. Umur simpan sebenarnya kapsul bubuk biji anggur pada hari ke-7 penyimpanan ASLT

$$Q_{10} = 2$$

$$\Delta T = 40^{\circ}\text{C} - 15^{\circ}\text{C} = 25^{\circ}\text{C}$$

$$U_s = U_a \times Q_{10}^{\Delta T/10}$$

$$U_s = 7 \text{ hari} \times 2^{25/10}$$

$$U_s = 60 \text{ Hari}$$

b. Umur simpan sebenarnya kapsul bubuk biji anggur pada hari ke-14 penyimpanan ASLT

$$Q_{10} = 2$$

$$\Delta T = 40^{\circ}\text{C} - 15^{\circ}\text{C} = 25^{\circ}\text{C}$$

$$U_s = U_a \times Q_{10}^{\Delta T/10}$$

$$U_s = 14 \text{ hari} \times 2^{25/10}$$

$$U_s = 79 \text{ Hari}$$

c. Umur simpan sebenarnya kapsul bubuk biji anggur pada hari ke-21 penyimpanan ASLT

$$Q_{10} = 2$$

$$\Delta T = 40^{\circ}\text{C} - 15^{\circ}\text{C} = 25^{\circ}\text{C}$$

$$U_s = U_a \times Q_{10}^{\Delta T/10}$$

$$U_s = 21 \text{ hari} \times 2^{25/10}$$

$$U_s = 119 \text{ Hari}$$

d. Umur simpan sebenarnya kapsul bubuk biji anggur pada hari ke-28 penyimpanan ASLT

$$Q_{10} = 2$$

$$\Delta T = 40^{\circ}\text{C} - 15^{\circ}\text{C} = 25^{\circ}\text{C}$$

$$U_s = U_a \times Q_{10}^{\Delta T/10}$$

$$U_s = 28 \text{ hari} \times 2^{25/10}$$

$$U_s = 158 \text{ Hari}$$

**Lampiran 4. Perhitungan Umur Simpan Sebenarnya Kapsul Bubuk Biji Anggur
Pada Suhu 25°C**

**a. Umur simpan sebenarnya kapsul bubuk biji anggur pada hari ke-7
penyimpanan ASLT**

$$Q_{10} = 2$$

$$\Delta T = 40^{\circ}\text{C} - 25^{\circ}\text{C} = 15^{\circ}\text{C}$$

$$U_s = U_a \times Q_{10}^{\Delta T/10}$$

$$U_s = 7 \text{ hari} \times 2^{15/10}$$

$$U_s = 20 \text{ Hari}$$

**b. Umur simpan sebenarnya kapsul bubuk biji anggur pada hari ke-14
penyimpanan ASLT**

$$Q_{10} = 2$$

$$\Delta T = 40^{\circ}\text{C} - 25^{\circ}\text{C} = 15^{\circ}\text{C}$$

$$U_s = U_a \times Q_{10}^{\Delta T/10}$$

$$U_s = 14 \text{ hari} \times 2^{15/10}$$

$$U_s = 40 \text{ Hari}$$

**c. Umur simpan sebenarnya kapsul bubuk biji anggur pada hari ke-21
penyimpanan ASLT**

$$Q_{10} = 2$$

$$\Delta T = 40^{\circ}\text{C} - 25^{\circ}\text{C} = 15^{\circ}\text{C}$$

$$U_s = U_a \times Q_{10}^{\Delta T/10}$$

$$U_s = 21 \text{ hari} \times 2^{15/10}$$

$$U_s = 59 \text{ Hari}$$

**d. Umur simpan sebenarnya kapsul bubuk biji anggur pada hari ke-28
penyimpanan ASLT**

$$Q_{10} = 2$$

$$\Delta T = 40^{\circ}\text{C} - 25^{\circ}\text{C} = 15^{\circ}\text{C}$$

$$U_s = U_a \times Q_{10}^{\Delta T/10}$$

$$U_s = 28 \text{ hari} \times 2^{15/10}$$

$$U_s = 79 \text{ Hari}$$