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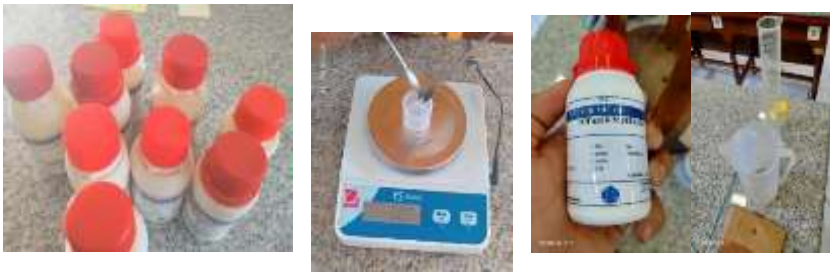
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## LAMPIRAN DOKUMENTASI PENELITIAN

Dokumentasi 1. Proses pembuatan stok pupuk limbah kotoran puyuh



Dokumentasi 2. Proses pembuatan stok pupuk zrouk



Dokumentasi 3. Proses pemeliharaan kultur *S.platensis*



Dokumentasi 4. Proses pengamatan *S.platensis* di mikroskop



Dokumentasi 5. Proses panen *S.platensis*



perlakuan	ulangan	satuan	1	2	3	4	5	6	7	8	9	10
<b>zarrouk</b>	<b>1</b>	%	25000	50000	50000	125000	125000	375000	400000	400000	400000	475000
	<b>2</b>		25000	50000	50000	125000	125000	275000	425000	425000	425000	625000
	<b>3</b>		25000	25000	25000	150000	150000	325000	400000	400000	400000	500000
	<b>4</b>		25000	50000	50000	100000	100000	250000	375000	375000	375000	425000
	<b>5</b>		25000	25000	25000	125000	125000	350000	400000	400000	400000	500000
	<b>6</b>		25000	50000	50000	125000	125000	350000	400000	400000	400000	525000
<b>rata – rata</b>		%	25000 ± 0.00	41666.7 ± 12909.9	41666.7 ± 12909.9	125000 ± 15811.4	125000 ± 15811.4	320833 ± 48519.8	400000 ± 15811.4	400000 ± 15811.4	400000 ± 15811.4	508333.3 ± 66458.0
<b>Kotoran puyuh 50 g/L</b>	<b>1</b>		25000	25000	25000	50000	50000	225000	300000	300000	300000	475000
	<b>2</b>		25000	25000	25000	25000	25000	200000	275000	275000	275000	425000
	<b>3</b>		25000	25000	25000	50000	50000	300000	300000	300000	300000	475000
	<b>4</b>		25000	25000	25000	50000	50000	300000	275000	275000	275000	400000
	<b>5</b>		25000	25000	25000	50000	50000	225000	250000	250000	250000	450000
	<b>6</b>		25000	25000	25000	25000	25000	250000	300000	300000	300000	350000
<b>rata – rata</b>		%	25000 ± 0.00	25000 ± 0.00	25000 ± 0.00	41666.7 ± 12909.9	41666.7 ± 12909.9	250000 ± 41833	283333 ± 20412.4	283333 ± 20412.4	283333 ± 20412.4	429166.7 ± 48519.8

<b>kotoran puyuh 100 g/L</b>	<b>1</b>		25000	125000	125000	200000	200000	375000	475000	475000	475000	975000
	<b>2</b>		25000	100000	100000	200000	200000	375000	500000	500000	500000	750000
	<b>3</b>		25000	175000	175000	200000	200000	450000	450000	450000	450000	875000
	<b>4</b>		25000	175000	175000	175000	175000	475000	475000	475000	475000	920000
	<b>5</b>		25000	75000	75000	225000	225000	475000	475000	475000	475000	725000
	<b>6</b>		25000	75000	75000	200000	200000	400000	500000	500000	500000	755000
<b>rata – rata</b>		<b>%</b>	25000 ± 0.00	120833 ± 45871.2	120833 ± 45871.2	200000 ± 15811.4	200000 ± 15811.4	425000 ± 47434.2	479167 ± 18819.3	479167 ± 18819.3	479167 ± 18819.3	833333.3 ± 104051.3
<b>kotoran puyuh 150 g/L</b>	<b>1</b>		25000	125000	125000	325000	325000	500000	550000	550000	550000	1600000
	<b>2</b>		25000	100000	100000	300000	300000	600000	550000	550000	550000	1275000
	<b>3</b>		25000	150000	150000	250000	250000	550000	525000	525000	525000	1525000
	<b>4</b>		25000	125000	125000	325000	325000	500000	575000	575000	575000	1250000
	<b>5</b>		25000	125000	125000	325000	325000	500000	600000	600000	600000	1475000
	<b>6</b>		25000	100000	100000	275000	275000	500000	550000	550000	550000	1375000
<b>rata – rata</b>		<b>%</b>	25000 ± 0.00	120833 ± 18819.3	120833 ± 18819.3	300000 ± 31622.8	300000 ± 41833	525000 ± 41833	558333 ± 25819.9	558333 ± 25819.9	558333 ± 25819.9	1416667 ± 140237.9

<b>Perlakuan</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>
<b>Zarrouk</b>	25000	41666.7	41666.7	125000	125000	133333	400000	400000	400000	508333
<b>Kotoran puyuh 50 g/L</b>	25000	25000	25000	41666.7	41666.7	58333.3	283333	270833	270833	429167
<b>Kotoran puyuh 100 g/L</b>	25000	120833	120833	200000	200000	237500	479167	487500	487500	833333
<b>Kotoran puyuh 150 g/L</b>	25000	120833	120833	300000	300000	345833	558333	737500	737500	1416667

<b>Perlakuan</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>
<b>Zarrouk</b>	10.1	10.6	10.6	11.7	11.7	11.8	12.9	12.9	12.9	13.1
<b>Kotoran puyuh 50 g/L</b>	10.1	10.1	10.1	10.6	10.6	11.0	12.6	12.5	12.5	13.0
<b>Kotoran puyuh 100 g/L</b>	10.1	11.7	11.7	12.2	12.2	12.4	13.1	13.1	13.1	13.6
<b>Kotoran puyuh 150 g/L</b>	10.1	11.7	11.7	12.6	12.6	12.8	13.2	13.5	13.5	14.2
<b>rata – rata</b>	10.1 ± 0.00	11.0 ± 0.79	11.0 ± 0.79	11.8 ± 0.85	11.8 ± 0.85	12.0 ± 0.77	12.9 ± 0.29	13.0 ± 0.42	13.0 ± 0.42	13.5 ± 0.54

➤ **Hari ke-1**

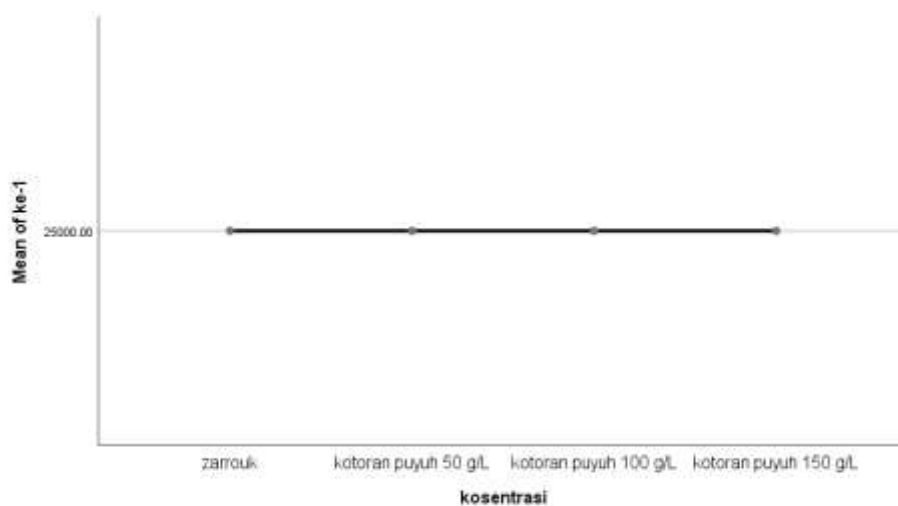
**Descriptives**

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Zarrouk	6	25000.00	.00000	.00000	25000.000	25000.000	25000.00	25000.00
kotoran puyuh 50 g/L	6	25000.00	.00000	.00000	25000.000	25000.000	25000.00	25000.00
kotoran puyuh 100 g/L	6	25000.00	.00000	.00000	25000.000	25000.000	25000.00	25000.00
kotoran puyuh 150 g/L	6	25000.00	.00000	.00000	25000.000	25000.000	25000.00	25000.00
Total	24	25000.00	.00000	.00000	25000.000	25000.000	25000.00	25000.00

### ANOVA

ke-1

		Sum of Squares	df	Mean Square	F	Sig.
Between Groups	(Combined)	.000	3	.000	.	.
	Linear Term	.000	1	.000	.	.
	Contrast Deviation	.000	2	.000	.	.
Within Groups		.000	20	.000		
Total		.000	23			



➤ Hari ke-4

### Descriptives

ke-4

N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	Minimum	Maximum

			n		Lower Bound	Upper Bound		
Zarrouk	6	125000.0000	15811.38830	6454.97224	108406.9656	141593.0344	10000.000	150000.00
kotoran puyuh 50 g/L	6	41666.6667	12909.94449	5270.46277	28118.5108	55214.8225	25000.000	50000.00
kotoran puyuh 100 g/L	6	200000.0000	15811.38830	6454.97224	183406.9656	216593.0344	17500.000	225000.00
kotoran puyuh 150 g/L	6	300000.0000	31622.77660	12909.94449	266813.9312	333186.0688	25000.000	325000.00
Total	24	166666.6667	99090.06297	20226.67441	124824.6027	208508.7306	25000.000	325000.00

### ANOVA

ke-4

		Sum of Squares	df	Mean Square	F	Sig.
Between Groups	(Combined)	2175000000.00000	3	725000000.00000	174.000	.000
	Linear Term	1400833333.33333	1	1400833333.33333	336.200	.000
	Deviation	7741666666.66667	2	3870833333.33333	92.900	.000
Within Groups		8333333333.33333	20	416666666.66667		
Total		2258333333.33333	23			

### Multiple Comparisons

Dependent Variable: ke-4

Tukey HSD

(I) konsentrasi	(J) konsentrasi	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Zarrouk	kotoran puyuh 50 g/L	83333.33333	11785.11302	.000	50347.5537	116319.1130
	kotoran puyuh 100 g/L	-75000.00000	11785.11302	.000	-107985.7797	-42014.2203
	kotoran puyuh 150 g/L	-175000.00000	11785.11302	.000	-207985.7797	-142014.2203



kotoran puyuh 50 g/L	Zarrouk	- 83333.3333 3*	11785.113 02	.000	- 116319.113 0	- 50347.5537
	kotoran puyuh 100 g/L	- 158333.333 33*	11785.113 02	.000	- 191319.113 0	- 125347.553 7
	kotoran puyuh 150 g/L	- 258333.333 33*	11785.113 02	.000	- 291319.113 0	- 225347.553 7
kotoran puyuh 100 g/L	Zarrouk	75000.0000 0*	11785.113 02	.000	42014.2203	107985.779 7
	kotoran puyuh 50 g/L	158333.333 33*	11785.113 02	.000	125347.553 7	191319.113 0
	kotoran puyuh 150 g/L	- 100000.000 00*	11785.113 02	.000	- 132985.779 7	- 67014.2203
kotoran puyuh 150 g/L	Zarrouk	175000.000 00*	11785.113 02	.000	142014.220 3	207985.779 7
	kotoran puyuh 50 g/L	258333.333 33*	11785.113 02	.000	225347.553 7	291319.113 0
	kotoran puyuh 100 g/L	100000.000 00*	11785.113 02	.000	67014.2203	132985.779 7

\*. The mean difference is significant at the 0.05 level.

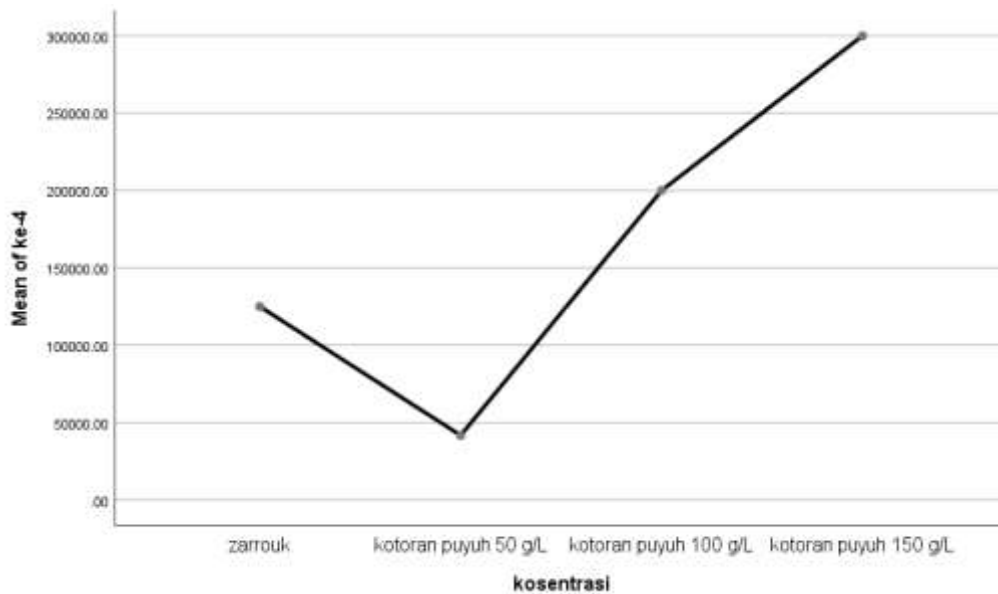
#### ke-4

Tukey HSD<sup>a</sup>

kosentrasi	N	Subset for alpha = 0.05			
		1	2	3	4
kotoran puyuh 50 g/L	6	41666.6667			
zarrouk	6		125000.0000		
kotoran puyuh 100 g/L	6			200000.0000	
kotoran puyuh 150 g/L	6				300000.0000
Sig.		1.000	1.000	1.000	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 6.000.



➤ Hari ke-7

### Descriptives

ke-7

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Zarrouk	6	400000.0000	15811.38830	6454.97224	383406.9656	416593.0344	37500.00	42500.00
kotoran puyuh 50 g/L	6	283333.3333	20412.41452	8333.33333	261911.8180	304754.8486	25000.00	30000.00
kotoran puyuh 100 g/L	6	479166.6667	18819.31632	7682.95371	459417.0054	498916.3279	45000.00	50000.00
kotoran puyuh 150 g/L	6	558333.3333	25819.88897	10540.92553	531237.0216	585429.6450	52500.00	60000.00
Total	24	430208.3333	105547.01370	21544.69395	385639.7382	474776.9284	25000.00	60000.00

### ANOVA

ke-7

		Sum of Squares	df	Mean Square	F	Sig.
Between Groups	(Combined)	247786458.333333	3	82595486.111111	195.782	.000
	Linear Contrast Term	135005208.333333	1	135005208.333333	320.012	.000

	Deviation	112781250	2	563906250	133.66	.000
	n	000.000		00.000	7	
Within Groups		843750000	20	421875000.		
		0.000		000		
Total		256223958	23			
		333.333				

### Multiple Comparisons

Dependent Variable: ke-7

Tukey HSD

(I) konsentrasi	(J) konsentrasi	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Zarrouk	kotoran puyuh 50 g/L	116666.66 667*	11858.541 23	.000	83475.366 1	149857.96 72
	kotoran puyuh 100 g/L	- 79166.666 67*	11858.541 23	.000	- 112357.96 72	- 45975.366 1
	kotoran puyuh 150 g/L	- 158333.33 333*	11858.541 23	.000	- 191524.63 39	- 125142.03 28
kotoran puyuh 50 g/L	Zarrouk	- 116666.66 667*	11858.541 23	.000	- 149857.96 72	- 83475.366 1
	kotoran puyuh 100 g/L	- 195833.33 333*	11858.541 23	.000	- 229024.63 39	- 162642.03 28
	kotoran puyuh 150 g/L	- 275000.00 000*	11858.541 23	.000	- 308191.30 05	- 241808.69 95
kotoran puyuh 100 g/L	Zarrouk	79166.666 67*	11858.541 23	.000	45975.366 1	112357.96 72
	kotoran puyuh 50 g/L	195833.33 333*	11858.541 23	.000	162642.03 28	229024.63 39
	kotoran puyuh 150 g/L	- 79166.666 67*	11858.541 23	.000	- 112357.96 72	- 45975.366 1
kotoran puyuh 150 g/L	Zarrouk	158333.33 333*	11858.541 23	.000	125142.03 28	191524.63 39
	kotoran puyuh 50 g/L	275000.00 000*	11858.541 23	.000	241808.69 95	308191.30 05
	kotoran puyuh 100 g/L	79166.666 67*	11858.541 23	.000	45975.366 1	112357.96 72

\*. The mean difference is significant at the 0.05 level.

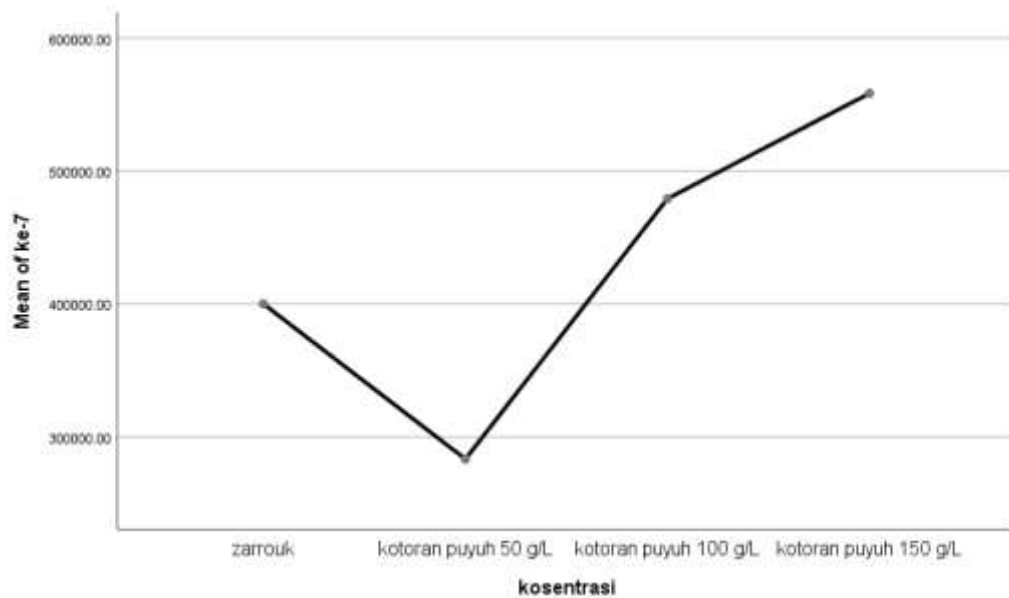
### ke-7

Tukey HSD<sup>a</sup>

Subset for alpha = 0.05					
kosentrasi	N	1	2	3	4
kotoran puyuh 50 g/L	6	283333.3333			
zarrouk	6		400000.0000		
kotoran puyuh 100 g/L	6			479166.6667	
kotoran puyuh 150 g/L	6				558333.3333
Sig.		1.000	1.000	1.000	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 6.000.



➤ Hari ke-10

### Descriptives

ke-10

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Zarrouk	6	508333.3333	66458.00679	27131.36766	438589.9325	578076.7342	42500.00	625000.00
kotoran puyuh 50 g/L	6	429166.6667	48519.75543	19808.10721	378248.3061	480085.0273	35000.00	475000.00
kotoran puyuh 100 g/L	6	833333.3333	104051.26941	42478.75286	724138.2228	942528.4438	72500.00	975000.00
kotoran puyuh 150 g/L	6	1416666.6667	140237.89312	57251.88012	1269496.0236	1563837.3098	1.25E+06	1.60E+06

Total	24	796875.0	407000.7	83078.6	625013.6	968736.3	35000	1.60E+
		000	2775	7566	653	347	0.00	6

### ANOVA

ke-10

		Sum of Squares	df	Mean Square	F	Sig.
Between Groups	(Combined)	3623619791	3	1207873263	129.655	.000
		666.668		888.889		
	Linear Contrast	2937505208	1	2937505208	315.317	.000
	Term	333.334		333.334		
	Deviation	6861145833	2	3430572916	36.824	.000
	n	33.334		66.667		
Within Groups		1863208333	20	9316041666		
		33.333		.667		
Total		3809940625	23			
		000.001				

### Multiple Comparisons

Dependent Variable: ke-10

Tukey HSD

(I) konsentrasi	(J) konsentrasi	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
zarrouk	kotoran puyuh 50 g/L	79166.666	55725.642	.502	-	235139.18
		67	41		76805.852	55
					2	
	kotoran puyuh 100 g/L	-	55725.642	.000	-	-
		325000.00	41		480972.51	169027.48
		000*			89	11
	kotoran puyuh 150 g/L	-	55725.642	.000	-	-
		908333.33	41		1064305.8	752360.81
		333*			522	45
kotoran puyuh 50 g/L	Zarrouk	-	55725.642	.502	-	76805.852
		79166.666	41		235139.18	2
		67			55	

kotoran puyuh 100 g/L	Zarrouk	-	55725.642	.000	-	-
	100 g/L	404166.66 667*	41		560139.18 55	248194.14 78
kotoran puyuh 150 g/L	Zarrouk	-	55725.642	.000	-	-
	150 g/L	987500.00 000*	41		1143472.5 189	831527.48 11
kotoran puyuh 100 g/L	Zarrouk	325000.00 000*	55725.642 41	.000	169027.48 11	480972.51 89
	kotoran puyuh 50 g/L	404166.66 667*	55725.642 41	.000	248194.14 78	560139.18 55
	kotoran puyuh 150 g/L	- 583333.33 333*	55725.642 41	.000	- 739305.85 22	- 427360.81 45
kotoran puyuh 150 g/L	Zarrouk	908333.33 333*	55725.642 41	.000	752360.81 45	1064305.8 522
	kotoran puyuh 50 g/L	987500.00 000*	55725.642 41	.000	831527.48 11	1143472.5 189
	kotoran puyuh 100 g/L	583333.33 333*	55725.642 41	.000	427360.81 45	739305.85 22

\*. The mean difference is significant at the 0.05 level.

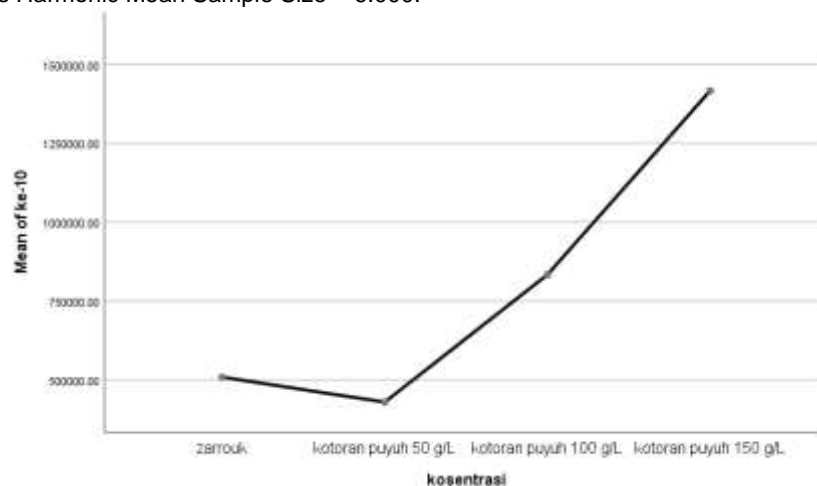
### ke-10

Tukey HSD<sup>a</sup>

kosentrasi	N	Subset for alpha = 0.05		
		1	2	3
kotoran puyuh 50 g/L	6	429166.6667		
zarrouk	6	508333.3333		
kotoran puyuh 100 g/L	6		833333.3333	
kotoran puyuh 150 g/L	6			1416666.6667
Sig.		.502	1.000	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 6.000.



➤ **Bobot panen *S.platensis* kering**

Ulangan	Satuan	Zarrouk	Kotoran puyuh 50 g/L	Kotoran puyuh 100 g/L	Kotoran puyuh 150 g/L
1	g/L	1.52	0.92	1.17	1.93
2		1.39	0.95	1.17	1.86
3		1.41	1.01	1.36	1.84
4		1.52	0.98	1.41	1.90
5		1.36	0.98	1.36	1.88
6		1.39	1.01	1.31	1.96
<b>rata - rata</b>	<b>g/L</b>	<b>1.43 ± 0.07</b>	<b>0.98 ± 0.04</b>	<b>1.30 ± 0.10</b>	<b>1.90 ± 0.04</b>

**Descriptives**

biomassa

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
zarrouk	6	1.4317	.07026	.02868	1.3579	1.5054	1.36	1.52
kotoran puyuh 50 g/L	6	.9750	.03507	.01432	.9382	1.0118	.92	1.01
kotoran puyuh 100 g/L	6	1.2967	.10309	.04208	1.1885	1.4048	1.17	1.41
kotoran puyuh 150 g/L	6	1.8950	.04461	.01821	1.8482	1.9418	1.84	1.96
Total	24	1.3996	.34376	.07017	1.2544	1.5447	.92	1.96

**ANOVA**

biomassa

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2.624	3	.875	186.263	.000
Within Groups	.094	20	.005		
Total	2.718	23			

**Multiple Comparisons**

Dependent Variable: biomassa

Tukey HSD

(I) perlakuan	(J) perlakuan	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound

zarrouk	50	.45667*	.03956	.000	.3459	.5674
	100	.13500*	.03956	.014	.0243	.2457
	150	-.46333*	.03956	.000	-.5741	-.3526
50	zarrouk	-.45667*	.03956	.000	-.5674	-.3459
	100	-.32167*	.03956	.000	-.4324	-.2109
	150	-.92000*	.03956	.000	-1.0307	-.8093
100	zarrouk	-.13500*	.03956	.014	-.2457	-.0243
	50	.32167*	.03956	.000	.2109	.4324
	150	-.59833*	.03956	.000	-.7091	-.4876
150	zarrouk	.46333*	.03956	.000	.3526	.5741
	50	.92000*	.03956	.000	.8093	1.0307
	100	.59833*	.03956	.000	.4876	.7091

\*. The mean difference is significant at the 0.05 level.

### Biomassa

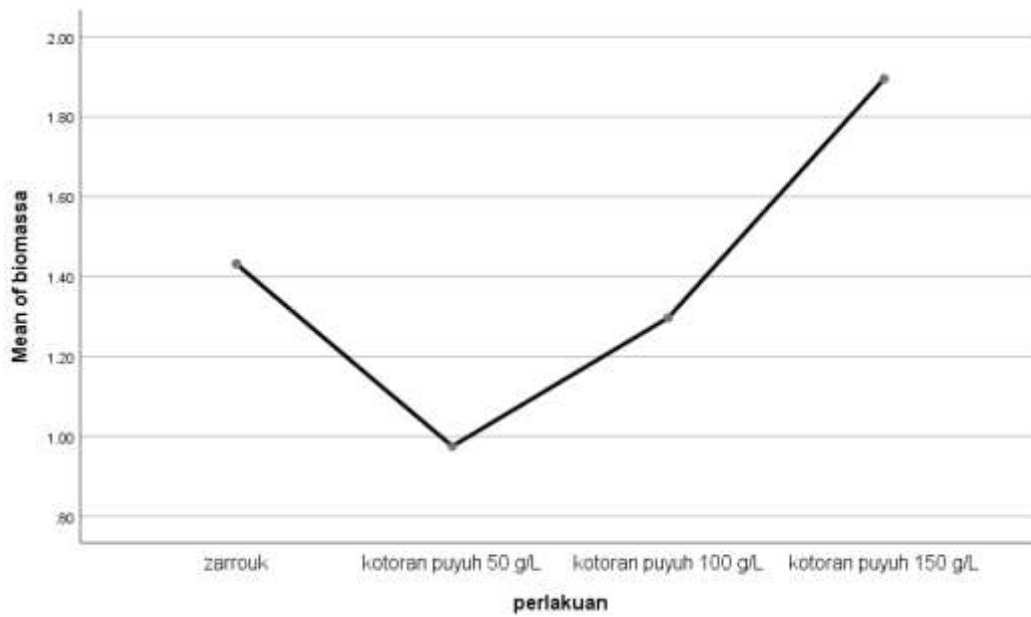
Tukey HSD<sup>a</sup>

Perlakuan	N	Subset for alpha = 0.05			
		1	2	3	4
kotoran puyuh 50 g/L	6	.9750			
kotoran puyuh 100 g/L	6		1.2967		
Zarrouk	6			1.4317	
kotoran puyuh 150 g/L	6				1.8950
Sig.		1.000	1.000	1.000	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 6.000.





➤ **Data analisis fosfor dari limbah kotoran puyuh sebelum dan sesudah**

Perlakuan		Ulanga	Satuan	Fosfor sebelum (Hari ke-1)	Fosfor sesudah (Hari ke-10)
1	zarrouk	1	%	0.070	0.016
		2		0.076	0.018
		3		0.076	0.019
		4		0.061	0.015
		5		0.067	0.017
		6		0.070	0.016
<b>Rata – rata</b>				<b>0.0700 ± 0.0057</b>	<b>0.0168 ± 0.0015</b>
2	50	1		0.053	0.011
		2		0.054	0.010
		3		0.051	0.015

		4		0.058	0.012
		5		0.052	0.013
		6		0.049	0.011
<b>Rata – rata</b>				<b>0.0528 ± 0.0031</b>	<b>0.0120 ± 0.0018</b>
3	100	1		0.081	0.015
		2		0.080	0.016
		3		0.081	0.020
		4		0.084	0.015
		5		0.08	0.014
		6		0.08	0.015
<b>Rata – rata</b>				<b>0.0810 ± 0.0015</b>	<b>0.0158 ± 0.0021</b>
4	150	1		0.099	0.023
		2		0.092	0.022
		3		0.090	0.020
		4		0.091	0.021
		5		0.094	0.024
		6		0.088	0.028
<b>Rata – rata</b>				<b>0.0923 ± 0.0038</b>	<b>0.0230 ± 0.0028</b>

➤ Fosfor sebelum

### Descriptives

Fosfor sebelum

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Zarrouk	6	.0700	.00569	.00232	.0640	.0760	.06	.08
kotoran puyuh 50 g/L	6	.0528	.00306	.00125	.0496	.0560	.05	.06
kotoran puyuh 100 g/L	6	.0810	.00155	.00063	.0794	.0826	.08	.08
kotoran puyuh 150 g/L	6	.0923	.00383	.00156	.0883	.0964	.09	.10
Total	24	.0740	.01531	.00312	.0676	.0805	.05	.10

**ANOVA**

Fosfor sebelum

			Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	(Combined)		.005	3	.002	115.463	.000
	Linear Contrast	Term	.003	1	.003	184.726	.000
		Deviation	.002	2	.001	80.831	.000
Within Groups			.000	20	.000		
Total			.005	23			

**Multiple Comparisons**

Dependent Variable: fosfor sebelum

Tukey HSD

(I) sebelum	(J) sebelum	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Zarrouk	kotoran puyuh 50 g/L	.01717*	.00221	.000	.0110	.0234
	kotoran puyuh 100 g/L	-.01100*	.00221	.000	-.0172	-.0048
	kotoran puyuh 150 g/L	-.02233*	.00221	.000	-.0285	-.0161
kotoran puyuh 50 g/L	Zarrouk	-.01717*	.00221	.000	-.0234	-.0110
	kotoran puyuh 100 g/L	-.02817*	.00221	.000	-.0344	-.0220
	kotoran puyuh 150 g/L	-.03950*	.00221	.000	-.0457	-.0333
kotoran puyuh 100 g/L	Zarrouk	.01100*	.00221	.000	.0048	.0172
	kotoran puyuh 50 g/L	.02817*	.00221	.000	.0220	.0344
	kotoran puyuh 150 g/L	-.01133*	.00221	.000	-.0175	-.0051
kotoran puyuh 150 g/L	Zarrouk	.02233*	.00221	.000	.0161	.0285
	kotoran puyuh 50 g/L	.03950*	.00221	.000	.0333	.0457
	kotoran puyuh 100 g/L	.01133*	.00221	.000	.0051	.0175

\*. The mean difference is significant at the 0.05 level.

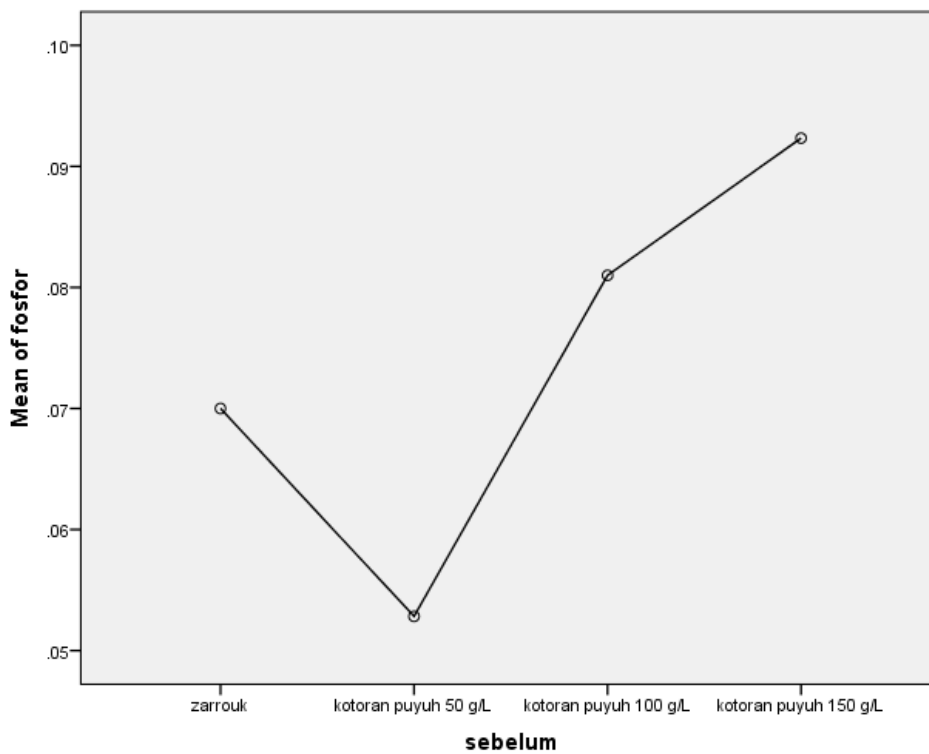
**Fosfor sebelum**

Tukey HSD

Sebelum	N	Subset for alpha = 0.05			
		1	2	3	4
kotoran puyuh 50 g/L	6	.0528			
Zarrouk	6		.0700		
kotoran puyuh 100 g/L	6			.0810	
kotoran puyuh 150 g/L	6				.0923
Sig.		1.000	1.000	1.000	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 6.000.



➤ Fosfor sesudah

**Descriptives**

Fosfor sesudah

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Zarrouk	6	.0168	.00147	.00060	.0153	.0184	.02	.02
kotoran puyuh 50 g/L	6	.0120	.00179	.00073	.0101	.0139	.01	.02
kotoran puyuh 100 g/L	6	.0158	.00214	.00087	.0136	.0181	.01	.02

kotoran puyuh 150 g/L	6	.0230	.00283	.0011 5	.0200	.0260	.02	.03
Total	24	.0169	.00449	.0009 2	.0150	.0188	.01	.03

### ANOVA

Fosfor sesudah

		Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	(Combined)	.000	3	.000	27.819	.000
	Contrast	.000	1	.000	33.375	.000
	Linear Term Deviation	.000	2	.000	25.041	.000
Within Groups		.000	20	.000		
Total		.000	23			

### Multiple Comparisons

Dependent Variable: fosfor sesudah

Tukey HSD

(I) sesudah	(J) sesudah	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Zarrouk	kotoran puyuh 50 g/L	.00483*	.00122	.004	.0014	.0083
	kotoran puyuh 100 g/L	.00100	.00122	.845	-.0024	.0044
	kotoran puyuh 150 g/L	-.00617*	.00122	.000	-.0096	-.0027
kotoran puyuh 50 g/L	Zarrouk	-.00483*	.00122	.004	-.0083	-.0014
	kotoran puyuh 100 g/L	-.00383*	.00122	.025	-.0073	-.0004
	kotoran puyuh 150 g/L	-.01100*	.00122	.000	-.0144	-.0076
kotoran puyuh 100 g/L	Zarrouk	-.00100	.00122	.845	-.0044	.0024
	kotoran puyuh 50 g/L	.00383*	.00122	.025	.0004	.0073
	kotoran puyuh 150 g/L	-.00717*	.00122	.000	-.0106	-.0037
kotoran puyuh 150 g/L	Zarrouk	.00617*	.00122	.000	.0027	.0096
	kotoran puyuh 50 g/L	.01100*	.00122	.000	.0076	.0144
	kotoran puyuh 100 g/L	.00717*	.00122	.000	.0037	.0106

\*. The mean difference is significant at the 0.05 level.

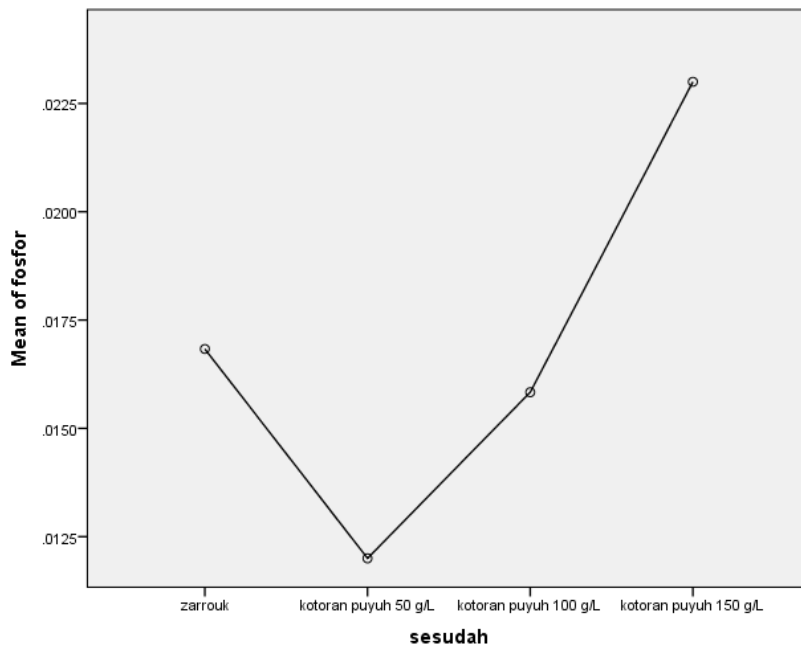
### Fosfor sesudah

Tukey HSD

sesudah	N	Subset for alpha = 0.05		
		1	2	3
kotoran puyuh 50 g/L	6	.0120		
kotoran puyuh 100 g/L	6		.0158	
zarrouk	6		.0168	
kotoran puyuh 150 g/L	6			.0230
Sig.		1.000	.845	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 6.000.



➤ Data konsumsi fosfor dari limbah kotoran puyuh sebelum dan sesudah

Ulangan	Satuan	zarrouk	kotoran puyuh 50 g/L	kotoran puyuh 100 g/L	kotoran puyuh 150 g/L
1	%	0.054	0.042	0.066	0.076
2		0.058	0.044	0.064	0.07
3		0.057	0.036	0.061	0.07
4		0.046	0.046	0.069	0.07
5		0.050	0.039	0.066	0.07
6		0.054	0.038	0.065	0.06
<b>rata – rata</b>		<b>0.053 ± 0.0045</b>	<b>0.041 ± 0.0038</b>	<b>0.065 ± 0.0026</b>	<b>0.069 ± 0.0052</b>

Descriptives

fosfor sebelum dan sesudah

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Zarrouk	6	.0532	.00449	.00183	.0485	.0579	.05	.06
kotoran puyuh 50 g/L	6	.0408	.00382	.00156	.0368	.0448	.04	.05
kotoran puyuh 100 g/L	6	.0652	.00264	.00108	.0624	.0679	.06	.07
kotoran puyuh 150 g/L	6	.0693	.00516	.00211	.0639	.0748	.06	.08
Total	24	.0571	.01200	.00245	.0521	.0622	.04	.08

### ANOVA

fosfor sebelum dan sesudah

			Sum of Squares	df	Mean Square	F	Sig.
(Combined)			.003	3	.001	57.899	.000
Between Groups	Contrast		.002	1	.002	93.110	.000
	Linear Term	Deviation	.001	2	.001	40.294	.000
Within Groups			.000	20	.000		
Total			.003	23			

### Multiple Comparisons

Dependent Variable: fosfor sebelum dan sesudah

Tukey HSD

(I) konsentrasi	(J) konsentrasi	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Zarrouk	kotoran puyuh 50 g/L	.01233*	.00239	.000	.0057	.0190
	kotoran puyuh 100 g/L	-.01200*	.00239	.000	-.0187	-.0053
	kotoran puyuh 150 g/L	-.01617*	.00239	.000	-.0228	-.0095
kotoran puyuh 50 g/L	zarrouk	-.01233*	.00239	.000	-.0190	-.0057
	kotoran puyuh 100 g/L	-.02433*	.00239	.000	-.0310	-.0177
	kotoran puyuh 150 g/L	-.02850*	.00239	.000	-.0352	-.0218
kotoran puyuh 100	zarrouk	.01200*	.00239	.000	.0053	.0187

g/L	kotoran puyuh 50 g/L	.02433*	.00239	.000	.0177	.0310
	kotoran puyuh 150 g/L	-.00417	.00239	.328	-.0108	.0025
	zarrouk	.01617*	.00239	.000	.0095	.0228
kotoran puyuh 150 g/L	kotoran puyuh 50 g/L	.02850*	.00239	.000	.0218	.0352
	kotoran puyuh 100 g/L	.00417	.00239	.328	-.0025	.0108

\*. The mean difference is significant at the 0.05 level.

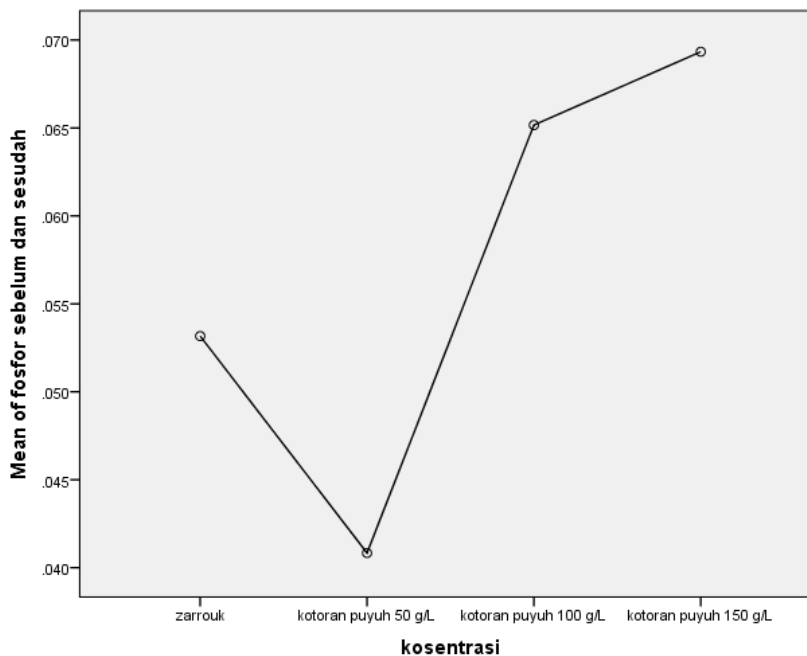
### fosfor sebelum dan sesudah

Tukey HSD

kosentrasi	N	Subset for alpha = 0.05		
		1	2	3
kotoran puyuh 50 g/L	6	.0408		
Zarrouk	6		.0532	
kotoran puyuh 100 g/L	6			.0652
kotoran puyuh 150 g/L	6			.0693
Sig.		1.000	1.000	.328

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 6.000.



➤ Data uji kalium dari limbah kotoran puyuh sebelum dan sesudah

Kosentrasi	Ulangan	Satuan	Kalium sebelum	Kalium sesudah
Zarrouk	1	%	0.066	0.030



	2		0.065	0.032
	3		0.065	0.033
	4		0.067	0.028
	5		0.069	0.026
	6		0.070	0.035
<b>Rata – rata</b>			<b>0.0670 ± 0.0021</b>	<b>0.0307 ± 0.0033</b>
Kotoran puyuh 50 g/L	1		0.036	0.016
	2		0.038	0.013
	3		0.033	0.010
	4		0.026	0.011
	5		0.031	0.014
	6		0.031	0.012
<b>Rata – rata</b>			<b>0.0325 ± 0.0042</b>	<b>0.0127 ± 0.0022</b>
Kotoran puyuh 100 g/L	1		0.064	0.034
	2		0.065	0.039
	3		0.068	0.031
	4		0.063	0.030
	5		0.069	0.038
	6		0.066	0.032
<b>Rata – rata</b>			<b>0.0658 ± 0.0023</b>	<b>0.0340 ± 0.0037</b>
Kotoran puyuh 150 g/L	1		0.096	0.052
	2		0.098	0.056
	3		0.094	0.055
	4		0.095	0.048
	5		0.095	0.058
	6		0.097	0.047
<b>Rata - rata</b>			<b>0.0958 ± 0.0015</b>	<b>0.0527 ± 0.0045</b>

### Descriptives

kalium sebelum

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Zarrouk	6	.0670	.00210	.00086	.0648	.0692	.07	.07
kotoran puyuh 50 g/L	6	.0325	.00423	.00173	.0281	.0369	.03	.04
kotoran puyuh 100 g/L	6	.0658	.00232	.00095	.0634	.0683	.06	.07
kotoran puyuh 150 g/L	6	.0958	.00147	.00060	.0943	.0974	.09	.10
Total	24	.0653	.02305	.00470	.0556	.0750	.03	.10

## ANOVA

kalium sebelum

		Sum of Squares	df	Mean Square	F	Sig.
Between Groups	(Combined)	.012	3	.004	539.343	.000
	Linear Contrast	.004	1	.004	577.610	.000
	Term Deviation	.008	2	.004	520.209	.000
Within Groups		.000	20	.000		
Total		.012	23			

## Multiple Comparisons

Dependent Variable: kalium sebelum

Tukey HSD

(I) konsentrasi	(J) konsentrasi	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Zarrouk	kotoran puyuh 50 g/L	.03450*	.00158	.000	.0301	.0389
	kotoran puyuh 100 g/L	.00117	.00158	.880	-.0032	.0056
	kotoran puyuh 150 g/L	-.02883*	.00158	.000	-.0332	-.0244
kotoran puyuh 50 g/L	Zarrouk	-.03450*	.00158	.000	-.0389	-.0301
	kotoran puyuh 100 g/L	-.03333*	.00158	.000	-.0377	-.0289
	kotoran puyuh 150 g/L	-.06333*	.00158	.000	-.0677	-.0589
kotoran puyuh 100 g/L	Zarrouk	-.00117	.00158	.880	-.0056	.0032
	kotoran puyuh 50 g/L	.03333*	.00158	.000	.0289	.0377
	kotoran puyuh 150 g/L	-.03000*	.00158	.000	-.0344	-.0256
kotoran puyuh 150 g/L	Zarrouk	.02883*	.00158	.000	.0244	.0332
	kotoran puyuh 50 g/L	.06333*	.00158	.000	.0589	.0677
	kotoran puyuh 100 g/L	.03000*	.00158	.000	.0256	.0344

\*. The mean difference is significant at the 0.05 level.

## kalium sebelum

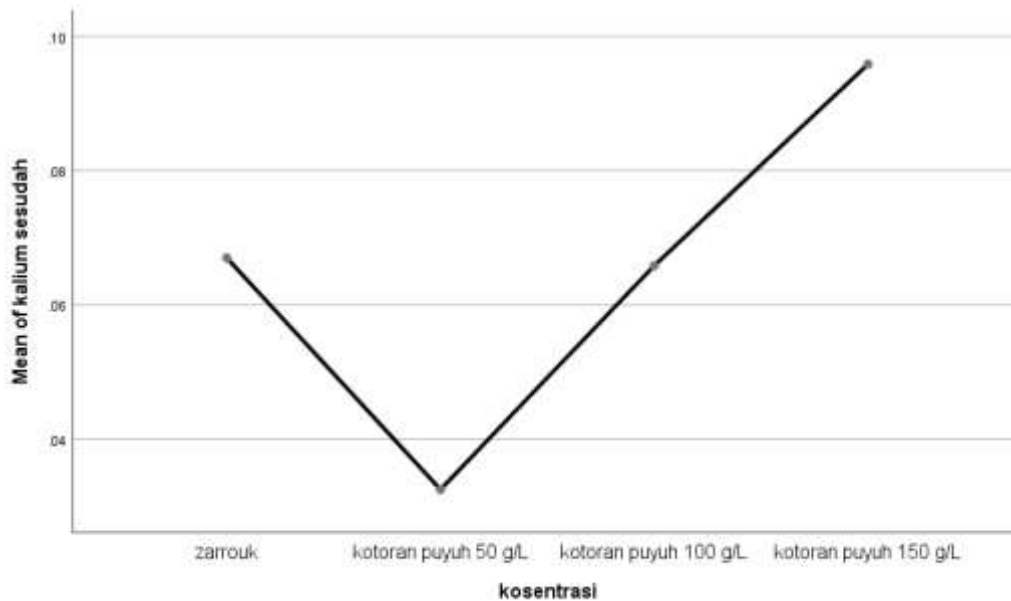
Tukey HSD<sup>a</sup>

kosentrasi	N	Subset for alpha = 0.05		
		1	2	3

kotoran puyuh 50 g/L	6	.0325		
kotoran puyuh 100 g/L	6		.0658	
Zarrouk	6		.0670	
kotoran puyuh 150 g/L	6			.0958
Sig.		1.000	.880	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 6.000.



➤ Kalium sesudah

**Descriptives**

kalium sesudah

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Zarrouk	6	.0307	.00333	.00136	.0272	.0342	.03	.04
kotoran puyuh 50 g/L	6	.0127	.00216	.00088	.0104	.0149	.01	.02
kotoran puyuh 100 g/L	6	.0340	.00374	.00153	.0301	.0379	.03	.04
kotoran puyuh 150 g/L	6	.0527	.00446	.00182	.0480	.0573	.05	.06
Total	24	.0325	.01486	.00303	.0262	.0388	.01	.06

**ANOVA**

kalium sesudah

	Sum of Squares	df	Mean Square	F	Sig.
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Between Groups	(Combined)		.005	3	.002	129.946	.000
	Linear Term	Contrast	.002	1	.002	184.527	.000
		Deviation	.003	2	.001	102.656	.000
Within Groups			.000	20	.000		
Total			.005	23			

### Multiple Comparisons

Dependent Variable: kalium sesudah

Tukey HSD

(I) konsentrasi	(J) konsentrasi	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Zarrouk	kotoran puyuh 50 g/L	.01800*	.00203	.000	.0123	.0237
	kotoran puyuh 100 g/L	-.00333	.00203	.380	-.0090	.0024
	kotoran puyuh 150 g/L	-.02200*	.00203	.000	-.0277	-.0163
kotoran puyuh 50 g/L	Zarrouk	-.01800*	.00203	.000	-.0237	-.0123
	kotoran puyuh 100 g/L	-.02133*	.00203	.000	-.0270	-.0156
	kotoran puyuh 150 g/L	-.04000*	.00203	.000	-.0457	-.0343
kotoran puyuh 100 g/L	Zarrouk	.00333	.00203	.380	-.0024	.0090
	kotoran puyuh 50 g/L	.02133*	.00203	.000	.0156	.0270
	kotoran puyuh 150 g/L	-.01867*	.00203	.000	-.0244	-.0130
kotoran puyuh 150 g/L	Zarrouk	.02200*	.00203	.000	.0163	.0277
	kotoran puyuh 50 g/L	.04000*	.00203	.000	.0343	.0457
	kotoran puyuh 100 g/L	.01867*	.00203	.000	.0130	.0244

\*. The mean difference is significant at the 0.05 level.

### kalium sesudah

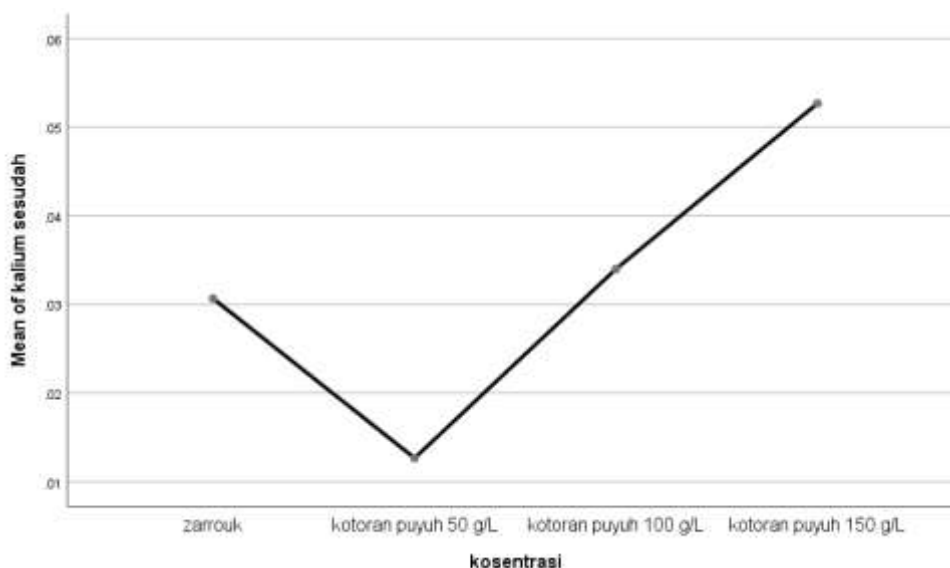
Tukey HSD<sup>a</sup>

kosentrasi	N	Subset for alpha = 0.05		
		1	2	3
kotoran puyuh 50 g/L	6	.0127		
Zarrouk	6		.0307	
kotoran puyuh 100 g/L	6		.0340	
kotoran puyuh 150 g/L	6			.0527

Sig.	1.000	.380	1.000
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Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 6.000.



➤ Kosumsi kalium dari limbah kotoran puyuh yang diberikan pada media kultur *S.platensis*

ulangan	Satuan	zarrouk	kotoran puyuh 50 g/L	kotoran puyuh 100 g/L	kotoran puyuh 150 g/L
1	%	0.036	0.020	0.030	0.044
2		0.033	0.025	0.026	0.042
3		0.032	0.023	0.037	0.039
4		0.039	0.015	0.033	0.047
5		0.043	0.017	0.031	0.037
6		0.035	0.019	0.034	0.050
<b>rata - rata</b>		<b>0.036 ± 0.0041</b>	<b>0.020 ± 0.0037</b>	<b>0.032 ± 0.0038</b>	<b>0.043 ± 0.0049</b>

### Descriptives

Kalium

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Zarrouk	6	.0363	.00408	.00167	.0320	.0406	.03	.04
kotoran puyuh 50 g/L	6	.0198	.00371	.00151	.0159	.0237	.02	.03
kotoran puyuh 100 g/L	6	.0318	.00376	.00154	.0279	.0358	.03	.04
kotoran puyuh 150 g/L	6	.0432	.00488	.00199	.0381	.0483	.04	.05
Total	24	.0328	.00950	.00194	.0288	.0368	.02	.05

### ANOVA

Kalium

		Sum of Squares	df	Mean Square	F	Sig.	
Between Groups	(Combined)	.002	3	.001	33.820	.000	
	Linear Term	Contrast	.000	1	.000	18.540	.000
		Deviation	.001	2	.001	41.460	.000
Within Groups		.000	20	.000			
Total		.002	23				

### Multiple Comparisons

Dependent Variable: kalium

Tukey HSD

(I) perlakuan	(J) perlakuan	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Zarrouk	kotoran puyuh 50 g/L	.01650*	.00239	.000	.0098	.0232
	kotoran puyuh 100 g/L	.00450	.00239	.266	-.0022	.0112
	kotoran puyuh 150 g/L	-.00683*	.00239	.044	-.0135	-.0002
kotoran puyuh 50 g/L	zarrouk	-.01650*	.00239	.000	-.0232	-.0098
	kotoran puyuh 100 g/L	-.01200*	.00239	.000	-.0187	-.0053
	kotoran puyuh 150 g/L	-.02333*	.00239	.000	-.0300	-.0167
kotoran puyuh 100 g/L	zarrouk	-.00450	.00239	.266	-.0112	.0022
	kotoran puyuh 50 g/L	.01200*	.00239	.000	.0053	.0187
	kotoran puyuh 150 g/L	-.01133*	.00239	.001	-.0180	-.0047
kotoran puyuh 150 g/L	zarrouk	.00683*	.00239	.044	.0002	.0135
	kotoran puyuh 50 g/L	.02333*	.00239	.000	.0167	.0300
	kotoran puyuh 100 g/L	.01133*	.00239	.001	.0047	.0180

\*. The mean difference is significant at the 0.05 level.

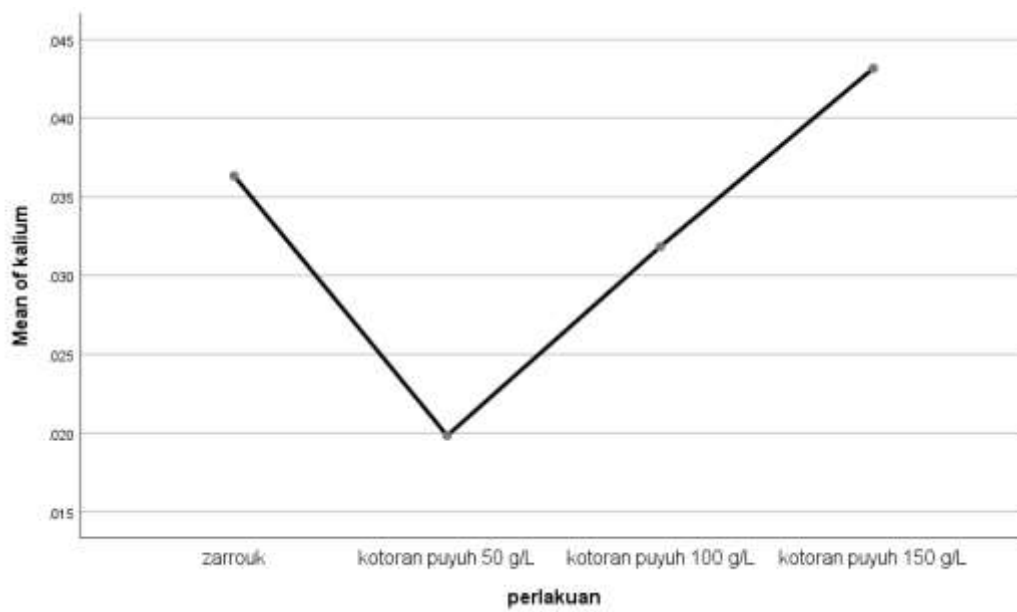
## kalium

Tukey HSD<sup>a</sup>

perlakuan	N	Subset for alpha = 0.05		
		1	2	3
kotoran puyuh 50 g/L	6	.0198		
kotoran puyuh 100 g/L	6		.0318	
zarrouk	6		.0363	
kotoran puyuh 150 g/L	6			.0432
Sig.		1.000	.266	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 6.000.





**UNIVERSITAS PGRI ADI BUANA SURABAYA**  
**FAKULTAS SAINS TEKNOLOGI**

Badan Penyelenggara PPLP PT PGRI Surabaya  
Keputusan MENKUMHAM RI NO. AHU-0000485.AH.01.08. Tahun 2019  
Kampus Pusat: Jl. Dekah Menanggal XII-4 Surabaya 60234 Telp. (031) 8281381  
<http://www.uniprasby.ac.id>

**BERITA ACARA BIMBINGAN SKRIPSI**

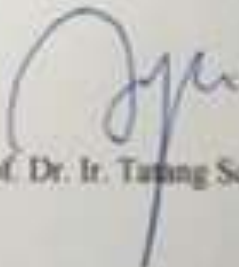
1. Nama : Putra Bagus Setiawan
2. NIM : 162500029
3. PRODI : Biologi
1. JUDUL : Komposisi fosfor dan kalium oleh *S.platanensis* dari limbah kotoran ayam sebagai media kultivasi
2. TANGGAL PENGAJUAN : 09 Oktober 2019
3. PEMBIMBING : Prof. Dr. Ir. Tatang Sopandi, M. P
4. PERIODE : 2019-2020
5. BERLAKU SEMESTER : Genap
6. PELAKSANAAN KONSULTASI BIMBINGAN

NO	TANGGAL	URAIAN KETERANGAN	PRAF
1	16 Oktober 2019	Konsultasi Judul	✓
2	13 November 2019	BAB I Latar Belakang	✓
3	28 september 2019	BAB II Tinjauan Pustaka	✓
4	28 Desember 2019	BAB III Kerangka Pikiran dan Hipotesis	✓
5	08 Januari 2020	BAB IV Metode Penelitian	✓
6	05 Maret 2020	Penelitian	✓
7	09 April 2020	Penelitian	✓
8	14 Mei 2020	BAB V Hasil Penelitian	✓
9	27 Juni 2020	BAB VI Pembahasan	✓
10	11 Juni 2020	BAB VII Simpulan dan Saran	✓

7. TANGGAL SELESAI : 27 Juli 2020

Mengetahui  
Dekan  
  
Dr. Dah Karunia Binawati, M. Si

Surabaya, 27 Juli 2020  
Pembimbing

  
Prof. Dr. Ir. Tatang Sopandi, M. P





UNIVERSITAS PGRI ADI BUANA SURABAYA  
FAKULTAS SAINS TEKNOLOGI

Badan Penyelenggara PPLP PT PGRI Surabaya  
Keputusan MENKES/DIRJEN/NO. AHU-0000485.AH/01.09. Tahun 2019  
Kampus Pusat: Jl. Dabak Mestunggal No.4 Surabaya 60224 Telp. (031) 4281081  
Website: www.pgriadiabuana.ac.id

PERBAIKAN / REVISI UJIAN SKRIPSI

NAMA MAHASISWA : Rho Bagus Samudra  
NIM : 162500025  
JUDUL SKRIPSI : Lulusan dan Guru  
DOSEN PEMBIMBING : Prof. Dr. Ir. Teguh Supriatno, M.T

	Materi Perbaikan / Revisi Proposal	Tanda Tangan Dosen Penguji
1.	Isi Revisi	
2.		
3.		
4.		
5.		
6.		

Surabaya, 24 Juli 2022  
Pembimbing