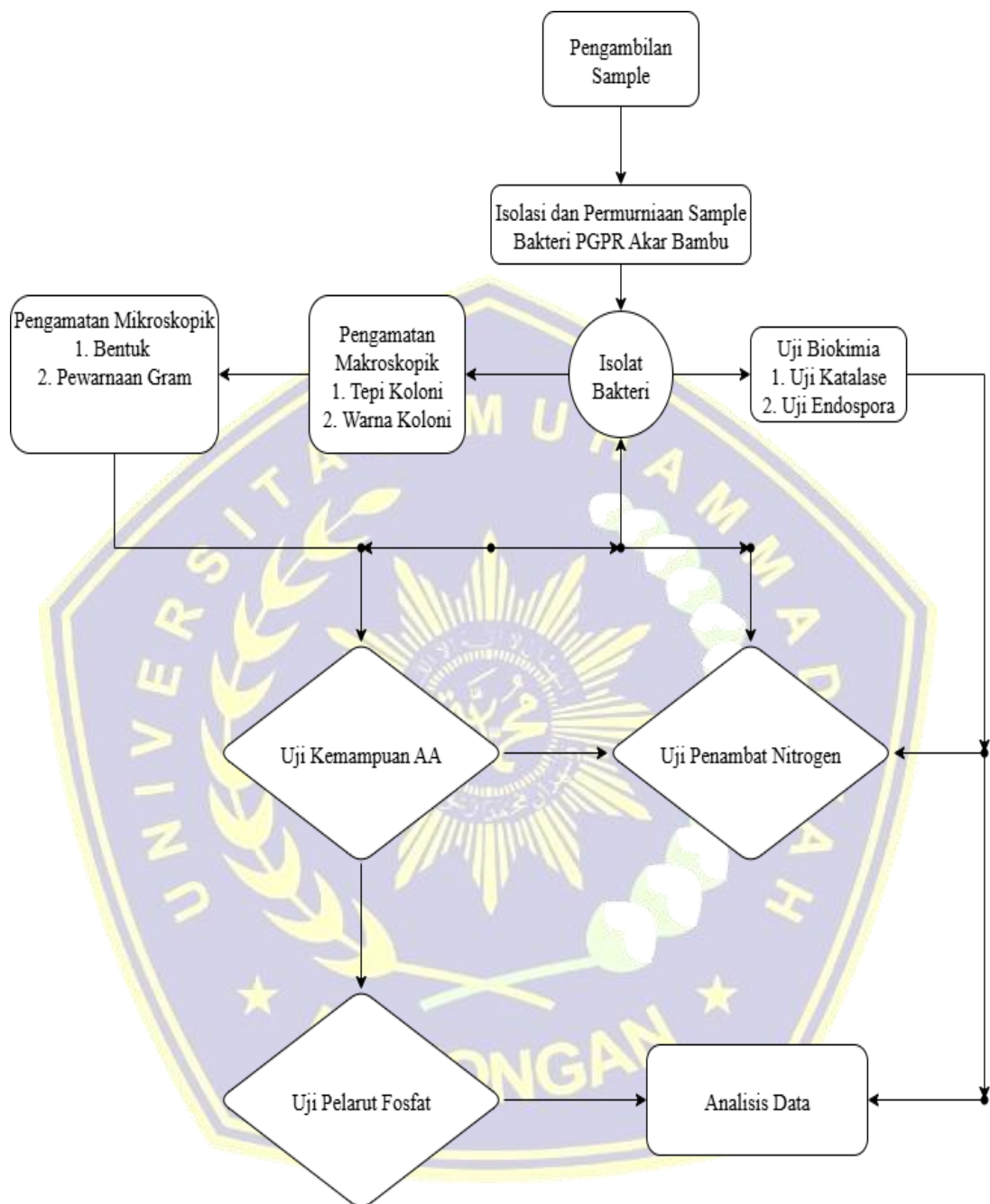


Lampiran 1. Jadwal Kegiatan

Berikut adalah jadwal penelitian dan tahap menyiapkan alat serta bahan untuk peneliti dalam meneliti isolasi dan karakterisasi bakteri

Jenis Kegiatan	Desember				Januari				Februari				Maret				April				Mei
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
Persiapan Alat & bahan	■																				
Pengambilan sampel		■																			
Proses isolasi bakteri			■																		
Pemurnian isolat bakteri					■	■															
Proses pengamatan secara makroskopis													■	■	■						
Perwarnaan Gram													■	■	■						
Uji Endospora													■	■	■						
Uji Katalase													■	■	■						
Seleksi bakteri penghasil auksin															■	■	■	■			
Pembuatan kurva standar IAA																■	■	■	■		
Uji kemampuan penghasil IAA																		■	■		
Pembuatan kurva standar Nitrogen																		■	■		
Uji Penambat Nitrogen																		■	■		
Uji Pelarut Fosfat																				■	
Analisis data																				■	

Lampiran 2. Skema Kerja



Lampiran 3.1 Hasil karakterisasi Isolat

Isolat	Makroskopik		Mikroskopik		Uji Biokimia	
	Tepi	Warna	Bentuk	Gram	Katalase	Endospora
K1	<i>Filamentous</i>	Putih	Basil	-	+	-
K2	<i>Rhizoid</i>	Putih	Basil	+	+	-
K3	<i>Undulate</i>	Putih	Streptobasil	+	+	-
K4	<i>Undulate</i>	Putih	Streptobasil	+	+	-
K5	<i>Eentire</i>	Putih	Streptobasil	+	+	-
K6	<i>Lobate</i>	Putih	Basil	+	+	-

Keterangan :

- Pewarnaan Gram : Terdapat warna merah menunjukan Gram negatif (-), terdapat warna biru menunjukan Gram positif (+)
- Uji Katalase : Berbuih (+), Tidak Berbuih (-)
- Uji Endospora : Terdapat Endospora berwarna hijau (+), Tidak terdapat Endospora berwarna merah terang (-).

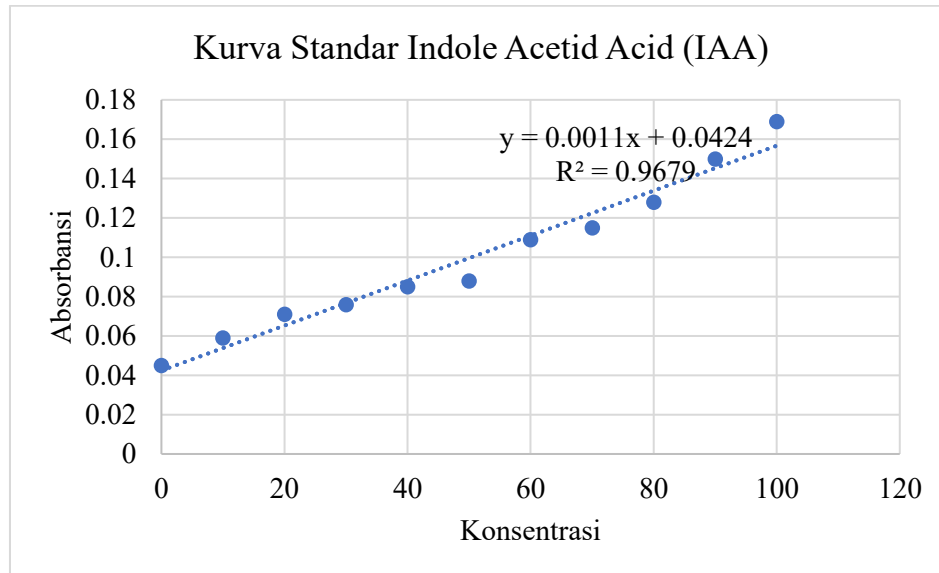


Lampiran 3.2 Tabel *Kurva Standar Indole Acetid Acid (IAA)* pada panjang gelombang 530 nm

Konsetrasi IAA	Absorbansinya
0	0,045
10 ppm	0,059
20 ppm	0,071
30 ppm	0,076
40 ppm	0,085
50 ppm	0,088
60 ppm	0,109
70 ppm	0,115
80 ppm	0,128
90 ppm	0,150
100 ppm	0,169



Lampiran 3.3 Kurva Standar *Indole Acetid Acid* (IAA) dengan persamaan $y = ax - b$



Lampiran 3.4 Tabel Pengamatan Seleksi Bakteri Penghasil IAA

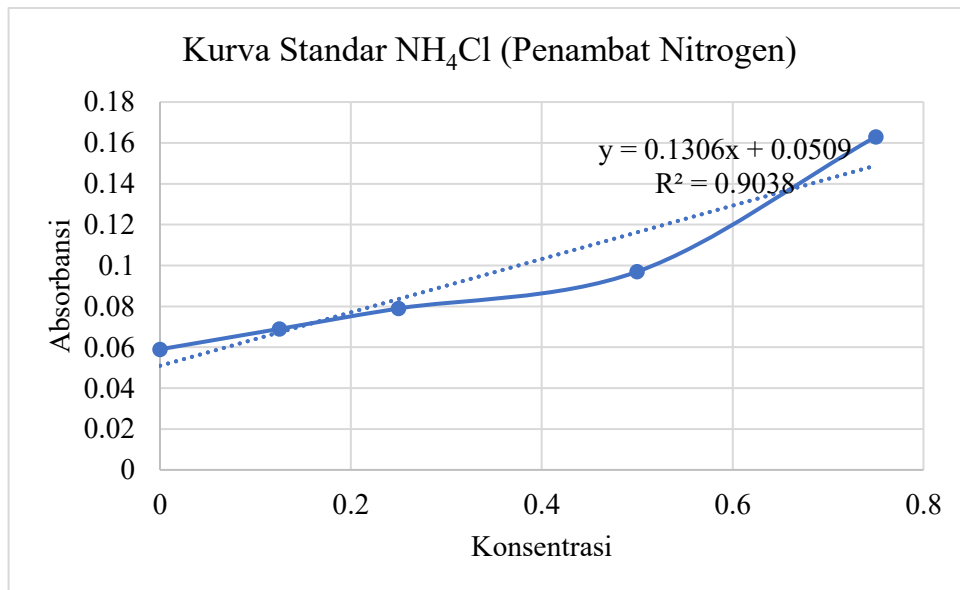
ISOLAT	Absorbansi (Y)	konsentrasi IAA 0 JAM	Absorbansi (Y)	konsentrasi IAA 24 JAM	Absorbansi (Y)	konsentrasi IAA 48 JAM	Absorbansi (Y)	konsentrasi IAA 72 JAM
K1.1	0,208	4,87	1,386	1.221,4	1,152	1.008,6	1,222	1.072,3
K1.2	0,221	5,17	1,542	1.363,2	1,299	1.142,3	1,25	1.097,7
K1.3	0,223	5,22	1,409	1.242,3	1,385	1.220,5	1,19	1.043,2
K2.1	0,211	4,94	0,208	150,5	0,213	155,0	0,228	168,6
K2.2	0,212	4,96	0,18	125,0	0,194	137,7	0,218	159,5
K2.3	0,223	5,22	0,187	131,4	0,214	155,9	0,246	185,0
K3.1	0,224	5,24	0,193	136,8	0,219	160,5	0,272	208,6
K3.2	0,216	5,06	0,208	150,5	0,221	162,3	0,235	175,0
K3.3	0,214	5,01	0,2	143,2	0,22	161,4	0,248	186,8
K4.1	0,24	5,62	0,196	139,5	0,205	147,7	0,259	196,8
K4.2	0,219	5,13	0,184	128,6	0,205	147,7	0,25	188,6
K4.3	0,28	6,56	0,202	145,0	0,197	140,5	0,242	181,4
K5.1	0,212	4,96	0,234	174,1	0,215	156,8	0,243	182,3
K5.2	0,204	4,77	0,303	236,8	0,204	146,8	0,252	190,5
K5.3	0,212	4,96	0,292	226,8	0,213	155,0	0,25	188,6
K6.1	0,213	4,99	0,203	145,9	0,187	131,4	0,231	171,4
K6.2	0,212	4,96	0,192	135,9	0,193	136,8	0,376	303,2
K6.3	0,222	5,20	0,183	127,7	0,214	155,9	0,335	265,9

Lampiran 3.5 Tabel Kurva Standar NH_4Cl (Penambat Nitrogen) pada panjang gelombang 420 nm

KONSENTRASI NH_4Cl	ABSORBANSINYA
0	0,059
0,125 ppm	0,069
0,25 ppm	0,079
0,5 ppm	0,097
0,75 ppm	0,163



Lampiran 3.6 Kurva Standar NH_4Cl (Penambat Nitrogen) $y = ax - b$



Lampiran 3.7 Tabel Pengamatan Seleksi Bakteri Penghasil Penambat Nitrogen

ISOLAT	Absorbansi (Y)	Konsentrasi Nitrogen
K1.1	0,484	3,32
K1.2	0,458	3,12
K1.3	0,458	3,12
K2.1	0,442	2,99
K2.2	0,449	3,05
K2.3	0,386	2,57
K3.1	0,29	1,83
K3.2	0,444	3,01
K3.3	0,359	2,36
K4.1	0,378	2,50
K4.2	0,359	2,36
K4.3	0,342	2,23
K5.1	0,202	1,16
K5.2	0,172	0,93
K5.3	0,212	1,23
K6.1	0,285	1,79
K6.2	0,204	1,17
K6.3	0,285	1,79

Isolat	1	2	3	Rata-rata	Standar deviasi
K1	3,316233	3,117152	3,117152	3,18	0,115
K2	2,99464	3,048239	2,56585	2,87	0,264
K3	1,830781	3,009954	2,359112	2,40	0,591
K4	2,504594	2,359112	2,228943	2,36	0,138
K5	1,156968	0,927259	1,233538	1,11	0,159
K6	1,792496	1,172282	1,792496	1,59	0,358

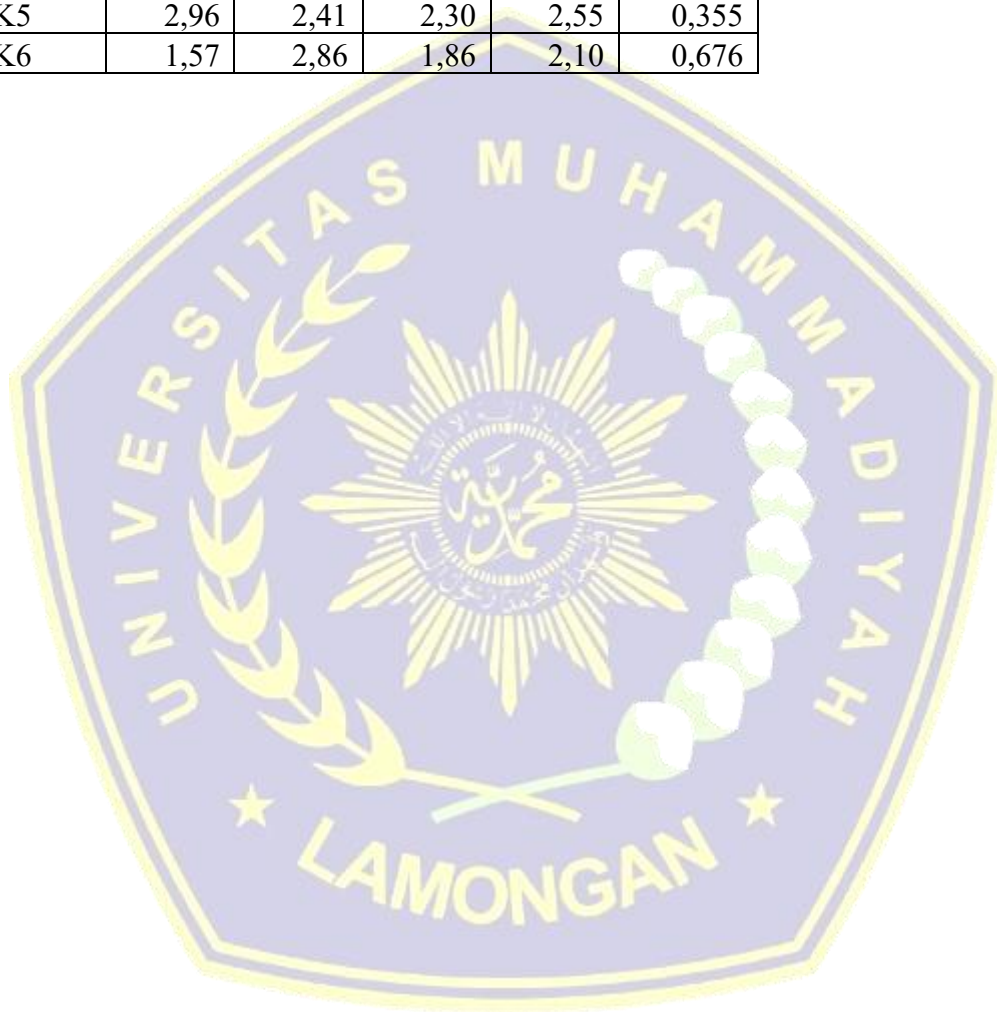
Lampiran 3.8 Tabel Pengamatan Uji Pelarut Fosfat

Isolat	IPF
K1	$2,99 \pm 0,25$ ab*
K2	$3,16 \pm 0,76$ ab*
K3	$2,62 \pm 0,17$ ab*
K4	$3,30 \pm 0,78$ b*
K5	$2,55 \pm 0,35$ ab*
K6	$2,10 \pm 0,67$ ab*

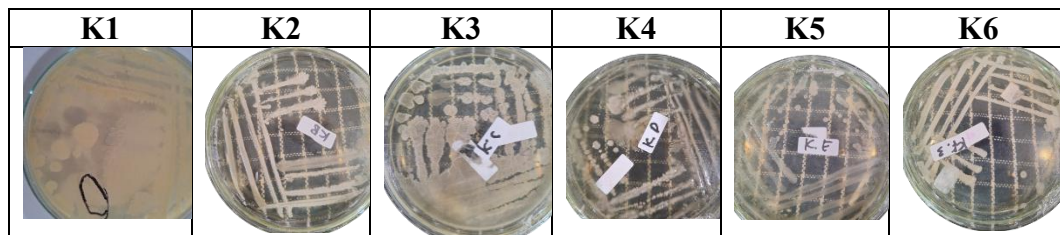


Lampiran 3.9 Penomoran dan Penandaan

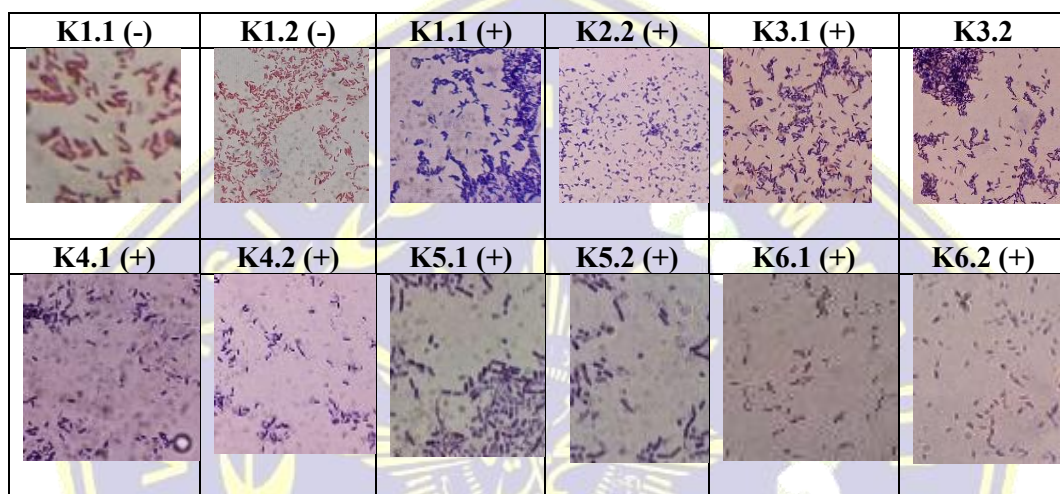
Isolat	Indeks Pelarut Fosfat (mm)			Rata- rata	Standar deviasi
	1	2	3		
K1	3,24	2,99	2,74	2,99	0,251
K2	3,91	2,38	3,19	3,16	0,767
K3	2,49	2,56	2,81	2,62	0,171
K4	4,20	2,97	2,73	3,30	0,787
K5	2,96	2,41	2,30	2,55	0,355
K6	1,57	2,86	1,86	2,10	0,676



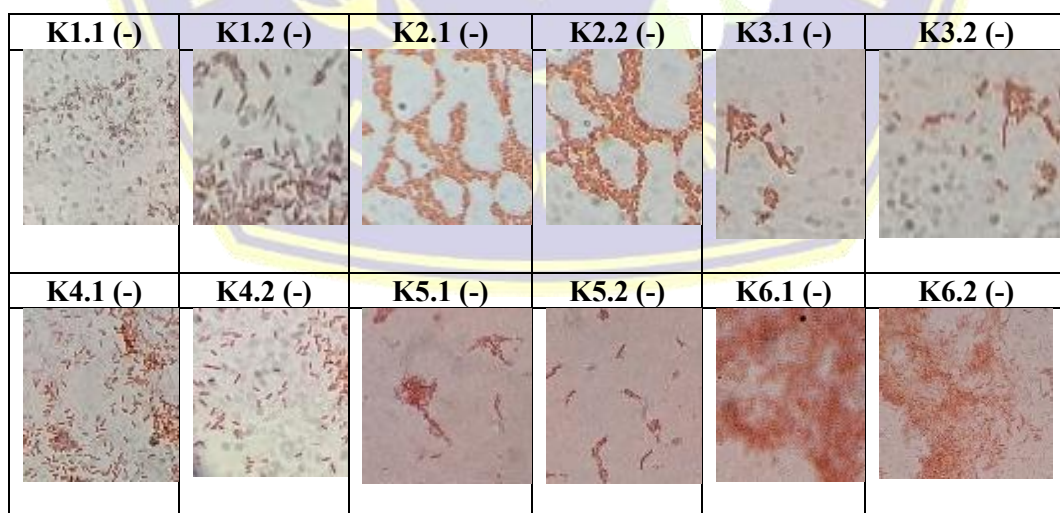
Lampiran 4.1 Dokumentasi Makroskopik



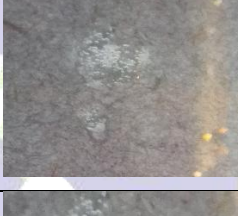
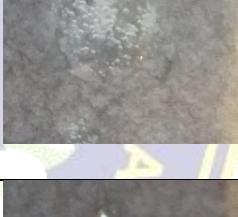
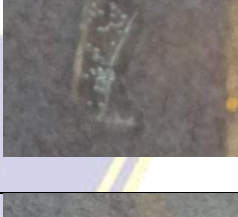
Lampiran 4.2 Dokumentasi Perwarnaan Gram



Lampiran 4.3 Dokumentasi Uji Endospora



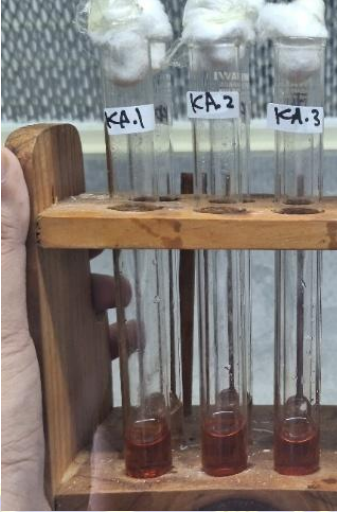
Lampiran 4.4 Dokumentasi Uji Katalase

Sampel	Dokumentasi	Sampel	Dokumentasi
K1.1		K4.1	
K1.1		K4.2	
K2.1		K5.1	
K2.2		K5.2	
K3.1		K6.1	
K3.2		K6.2	

Lampiran 4.5 Dokumentasi Hasil Perubahan Warna Uji Kemampuan Penghasil IAA

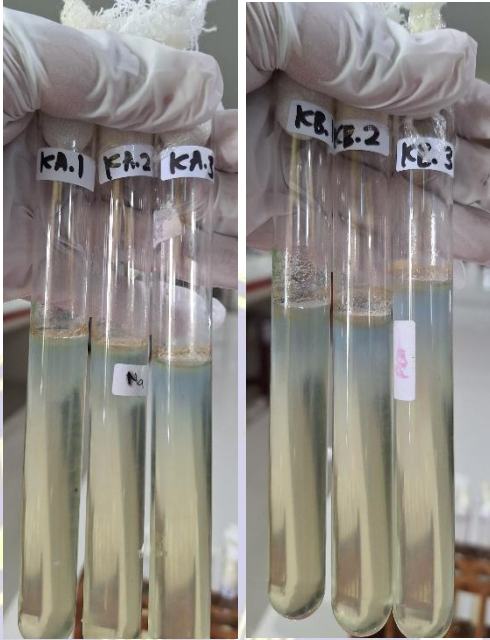
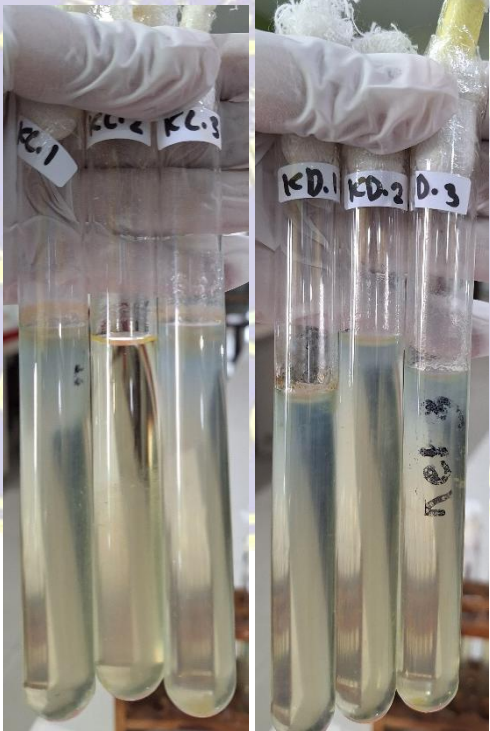
Waktu	Isolat	Dokumentasi
0 jam	Negatif (-) IAA	
	Negatif (-) IAA	

24 jam	Positif (+) IAA	
	Negatif (-) IAA	

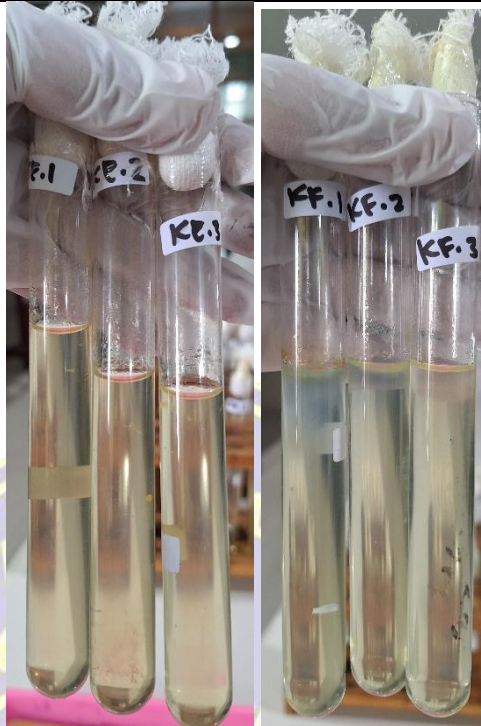
48 jam	Positif (+) IAA	
	Negatif (-) IAA	

72 jam	Positif (+) IAA	
	Negatif (-) IAA	

Lampiran 4.6 Dokumentasi Hasil Perubahan Warna Uji Penambat Nitrogen

Isolat	Dokumentasi
K1,K2 (positive)	
K3, K4 (positive)	

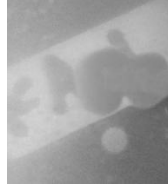
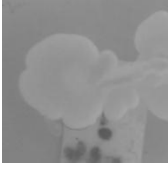
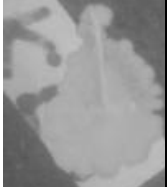
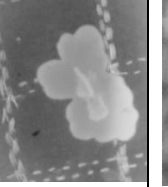
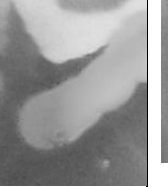
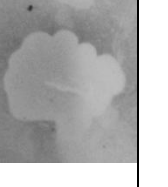
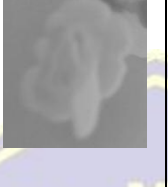
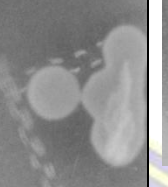
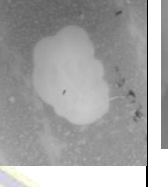
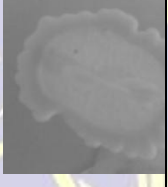
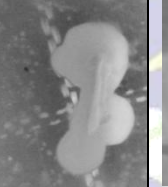
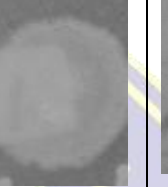
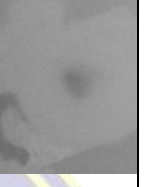
**K5 (negative) , K6
(positive)**



kontrol



Lampiran 4.7 Dokumentasi Indeks Pelarut Fosfat

K1	K2	K3	K4	K5	K6
					
					
					



Lampiran 5.1 Analisis Data One Way annova IAA

		ANOVA				
		Sum of Squares	df	Mean Square	F	Sig.
iaa0	Between Groups	1.430	5	.286	2.714	.073
	Within Groups	1.264	12	.105		
	Total	2.694	17			
iaa24	Between Groups	3162916.017	5	632583.203	514.873	.000
	Within Groups	14743.446	12	1228.621		
	Total	3177659.463	17			
iaa48	Between Groups	2370912.228	5	474182.446	241.313	.000
	Within Groups	23580.097	12	1965.008		
	Total	2394492.325	17			
iaa72	Between Groups	1920835.876	5	384167.175	390.783	.000
	Within Groups	11796.851	12	983.071		
	Total	1932632.727	17			



Tests of Normality

	isolat	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
iaa0	K1	.337	3	.	.855	3	.253
	K2	.362	3	.	.803	3	.122
	K3	.307	3	.	.904	3	.398
	K4	.248	3	.	.968	3	.657
	K5	.385	3	.	.750	3	.000
	K6	.343	3	.	.842	3	.220
iaa24	K1	.335	3	.	.858	3	.262
	K2	.292	3	.	.923	3	.463
	K3	.184	3	.	.999	3	.926
	K4	.253	3	.	.964	3	.636
	K5	.330	3	.	.866	3	.284
	K6	.193	3	.	.997	3	.890
iaa48	K1	.235	3	.	.978	3	.714
	K2	.369	3	.	.787	3	.085
	K3	.175	3	.	1.000	3	1.000
	K4	.385	3	.	.750	3	.000
	K5	.321	3	.	.881	3	.328
	K6	.304	3	.	.907	3	.408
iaa72	K1	.184	3	.	.999	3	.927
	K2	.241	3	.	.974	3	.688
	K3	.244	3	.	.971	3	.675
	K4	.182	3	.	.999	3	.936
	K5	.305	3	.	.906	3	.405
	K6	.277	3	.	.941	3	.531

a. Lilliefors Significance Correction



Descriptives

isolat		Statistic		Std. Error
iaa0	K1	Mean	5.0867	.10929
		95% Confidence Interval for Mean	Lower Bound	4.6164
			Upper Bound	5.5569
		5% Trimmed Mean	.	
		Median	5.1700	
		Variance	.036	
		Std. Deviation	.18930	
		Minimum	4.87	
		Maximum	5.22	
		Range	.35	
		Interquartile Range	.	
		Skewness	-1.597	1.225
		Kurtosis	.	.
	K2	Mean	5.0400	.09018
		95% Confidence Interval for Mean	Lower Bound	4.6520
			Upper Bound	5.4280
		5% Trimmed Mean	.	
		Median	4.9600	
		Variance	.024	
		Std. Deviation	.15620	
		Minimum	4.94	
		Maximum	5.22	
		Range	.28	
		Interquartile Range	.	
		Skewness	1.700	1.225
		Kurtosis	.	.
	K3	Mean	5.1033	.06984
		95% Confidence Interval for Mean	Lower Bound	4.8028
			Upper Bound	5.4038
		5% Trimmed Mean	.	
		Median	5.0600	
		Variance	.015	
		Std. Deviation	.12097	
		Minimum	5.01	
		Maximum	5.24	
		Range	.23	
		Interquartile Range	.	
		Skewness	1.405	1.225
		Kurtosis	.	.
	K4	Mean	5.7700	.41956
		95% Confidence Interval for Mean	Lower Bound	3.9648
			Upper Bound	7.5752

Lampiran 5.2 Uji Lanjut Duncan Multiple Range Test (DMRT) IAA

iaa0

Duncan^a

isolat	N	Subset for alpha = 0.05	
		1	2
K5	3	4.8967	
K2	3	5.0400	
K6	3	5.0500	
K1	3	5.0867	
K3	3	5.1033	
K4	3		5.7700
Sig.		.489	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

iaa24

Duncan^a

isolat	N	Subset for alpha = 0.05		
		1	2	3
K2	3	135.6033		
K6	3	136.5167		
K4	3	137.7300		
K3	3	143.4833		
K5	3		212.5767	
K1	3			1275.6033
Sig.		.803	1.000	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

iaa48

Duncan^a

isolat	N	Subset for alpha = 0.05	
		1	2
K6	3	141.3633	
K4	3	145.3033	
K2	3	149.5467	
K5	3	152.8800	
K3	3	161.3600	
K1	3		1123.7867
Sig.		.622	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

iaa72

Duncan^a

isolat	N	Subset for alpha = 0.05		
		1	2	3
K2	3	171.0633		
K5	3	187.1200	187.1200	
K4	3	188.9400	188.9400	
K3	3	190.1533	190.1533	
K6	3		246.8167	
K1	3			1071.0600
Sig.		.502	.051	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

Lampiran 5.3 Analisis Data One Way annova Nitrogen

Tests of Normality

		Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	isolat	Statistic	df	Sig.	Statistic	df	Sig.
nitrogen	K1	.385	3	.	.750	3	.000
	K2	.349	3	.	.832	3	.194
	K3	.194	3	.	.996	3	.886
	K4	.181	3	.	.999	3	.939
	K5	.292	3	.	.923	3	.463
	K6	.385	3	.	.750	3	.000

a. Lilliefors Significance Correction

ANOVA

nitrogen

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	9.123	5	1.825	18.106	.000
Within Groups	1.209	12	.101		
Total	10.332	17			

nitrogen

Duncan^a

		Subset for alpha = 0.05		
isolat	N	1	2	3
K5	3	1.1059		
K6	3	1.5858		
K4	3		2.3642	
K3	3		2.3999	
K2	3		2.8696	2.8696
K1	3			3.1835
Sig.		.089	.088	.249

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

Lampiran 5.4 Analisis Data One Way annova Fosfat

Tests of Normality

		Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	isolat	Statistic	df	Sig.	Statistic	df	Sig.
Fosfat	K1	.175	3	.	1.000	3	.999
	K2	.181	3	.	.999	3	.939
	K3	.310	3	.	.899	3	.381
	K4	.330	3	.	.866	3	.285
	K5	.328	3	.	.871	3	.297
	K6	.303	3	.	.909	3	.416

a. Lilliefors Significance Correction

ANOVA

Fosfat

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2.998	5	.600	1.911	.166
Within Groups	3.765	12	.314		
Total	6.763	17			

Fosfat

Duncan^a

		Subset for alpha = 0.05	
isolat	N	1	2
K6	3	2.0966	
K5	3	2.5537	2.5537
K3	3	2.6193	2.6193
K1	3	2.9894	2.9894
K2	3	3.1582	3.1582
K4	3		3.2983
Sig.		.055	.163

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.