

7. LAMPIRAN

7.1. Hasil Analisa SPSS

Normalitas bekatul mentah varietas IR-64 dan Mentik Wangi

Tests of Normality

	varietas	Kolmogorov-Smirnov(a)			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
Air	IR	.327	6	.044	.737	6	.015
	M	.242	6	.200(*)	.862	6	.197
Abu	IR	.238	6	.200(*)	.875	6	.245
	M	.156	6	.200(*)	.974	6	.918
Lemak	IR	.222	6	.200(*)	.913	6	.460
	M	.324	6	.048	.845	6	.144
protein	IR	.259	6	.200(*)	.940	6	.656
	M	.190	6	.200(*)	.961	6	.827
Kh	IR	.224	6	.200(*)	.929	6	.575
	M	.228	6	.200(*)	.919	6	.496
Antiok	IR	.191	6	.200(*)	.927	6	.556
	M	.201	6	.200(*)	.909	6	.430
antiok_sangrai	IR	.355	6	.017	.759	6	.025
	M	.223	6	.200(*)	.924	6	.535

* This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Kesimpulan : berdasarkan pengujian dengan Saphiro Wilk, didapatkan signifikansi \geq 0.05, yang artinya data tersebut normal.

Beda nyata batch 1 dan 2

Bekatul mentah varietas IR-64

Group Statistics

	batch	N	Mean	Std. Deviation	Std. Error Mean
air_IR	batch1	3	10.7467	.36364	.20995
	batch2	3	11.0833	.05132	.02963
abu_IR	batch1	3	4.5100	.38314	.22121
	batch2	3	4.4300	.38432	.22189
lemak_IR	batch1	3	12.0000	.38743	.22368
	batch2	3	12.2700	.68286	.39425
protein_IR	batch1	3	20.1100	.65092	.37581
	batch2	3	19.4133	.35796	.20667
kh_IR	batch1	3	52.6367	1.09546	.63246
	batch2	3	52.8033	.69945	.40383
antiok_IR	batch1	3	31.8533	.55302	.31929
	batch2	3	32.2967	.94320	.54456
antiok_sangrai_IR	batch1	3	26.6667	.59534	.34372
	batch2	3	27.0067	.16166	.09333

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means					95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Upper	Lower
air_IR	Equal variances assumed	10.174	.033	-1.588	4	.188	-.33667	.21203	-.92535	.25202
	Equal variances not assumed			-1.588	2.080	.249	-.33667	.21203	-1.21628	.54294
abu_IR	Equal variances assumed	.000	1.000	.255	4	.811	.08000	.31332	-.78990	.94990
	Equal variances not assumed			.255	4.000	.811	.08000	.31332	-.78991	.94991
lemak_IR	Equal variances assumed	1.886	.242	-.596	4	.583	-.27000	.45328	-1.52852	.98852
	Equal variances not assumed			-.596	3.167	.591	-.27000	.45328	-1.67053	1.13053
protein_IR	Equal variances assumed	1.617	.272	1.624	4	.180	.69667	.42889	-.49412	1.88745
	Equal variances not assumed			1.624	3.108	.200	.69667	.42889	-.64173	2.03506
kh_IR	Equal variances assumed	.304	.611	-.222	4	.835	-.16667	.75039	-2.25009	1.91676
	Equal variances not assumed			-.222	3.398	.837	-.16667	.75039	-2.40395	2.07062
antiok_IR	Equal variances assumed	.815	.418	-.702	4	.521	-.44333	.63126	-2.19599	1.30932
	Equal variances not assumed			-.702	3.230	.530	-.44333	.63126	-2.37380	1.48714
antiok_sangrai_IR	Equal variances assumed	6.110	.069	-.955	4	.394	-.34000	.35617	-1.32888	.64888
	Equal variances not assumed			-.955	2.293	.429	-.34000	.35617	-1.69914	1.01914

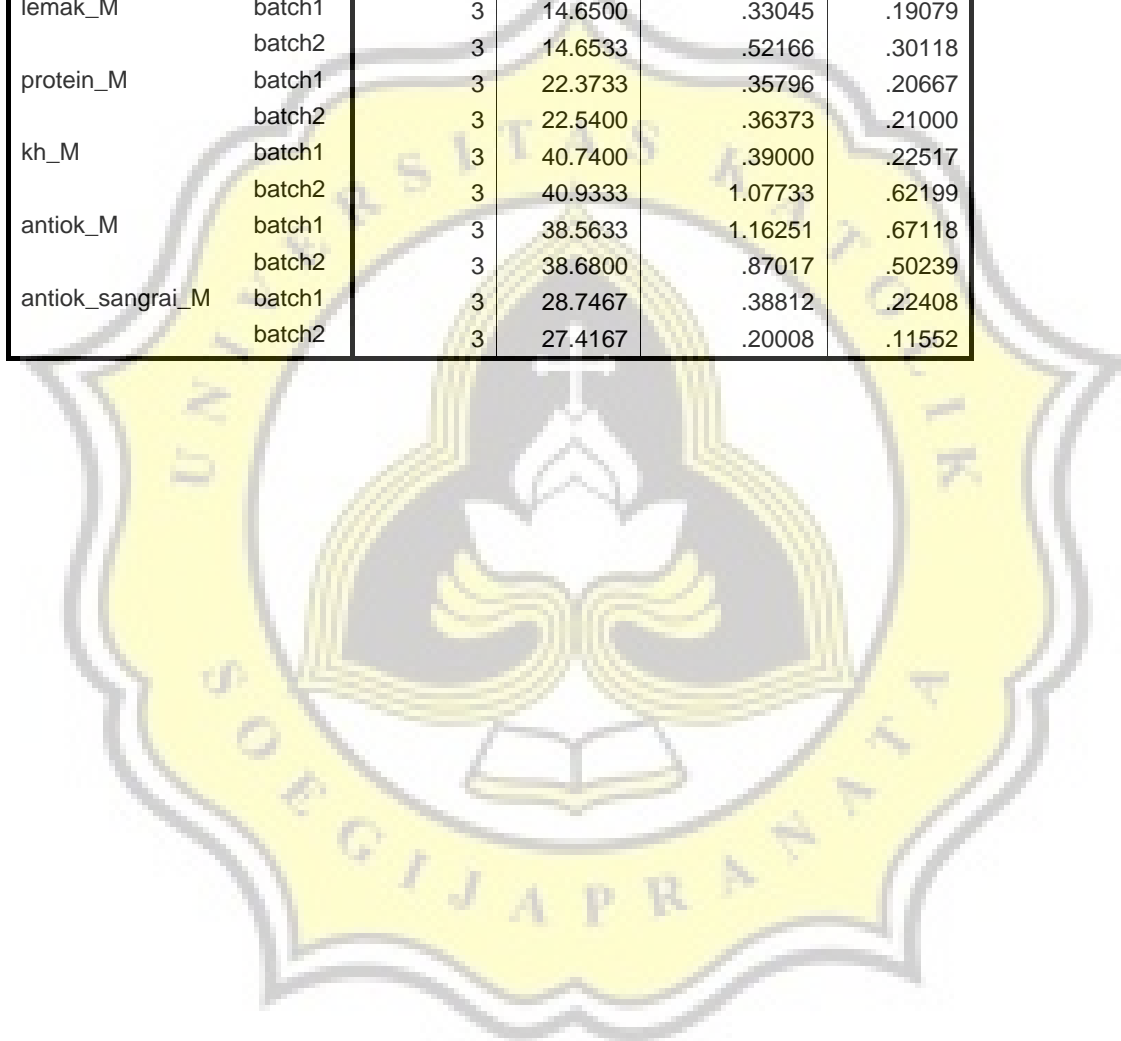
Kesimpulan :

- Signifikansi two tailed > 0.05 artinya tidak terdapat beda nyata antara batch 1 dan 2

Bekatul mentah varietas Mentik Wangi

Group Statistics

	batch	N	Mean	Std. Deviation	Std. Error Mean
air_M	batch1	3	11.4767	.40067	.23132
	batch2	3	11.6200	.32512	.18771
abu_M	batch1	3	10.7600	.31953	.18448
	batch2	3	10.2567	.30089	.17372
lemak_M	batch1	3	14.6500	.33045	.19079
	batch2	3	14.6533	.52166	.30118
protein_M	batch1	3	22.3733	.35796	.20667
	batch2	3	22.5400	.36373	.21000
kh_M	batch1	3	40.7400	.39000	.22517
	batch2	3	40.9333	1.07733	.62199
antiok_M	batch1	3	38.5633	1.16251	.67118
	batch2	3	38.6800	.87017	.50239
antiok_sangrai_M	batch1	3	28.7467	.38812	.22408
	batch2	3	27.4167	.20008	.11552



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	
									Upper	Lower
air_M	Equal variances assumed	.244	.647	-.481	4	.656	-.14333	.29790	-.97044	.68377
	Equal variances not assumed			-.481	3.837	.657	-.14333	.29790	-.98446	.69779
abu_M	Equal variances assumed	.071	.803	1.986	4	.118	.50333	.25340	-.20022	1.20688
	Equal variances not assumed			1.986	3.986	.118	.50333	.25340	-.20122	1.20788
lemak_M	Equal variances assumed	1.205	.334	-.009	4	.993	-.00333	.35653	-.99321	.98654
	Equal variances not assumed			-.009	3.382	.993	-.00333	.35653	-1.06872	1.06205
protein_M	Equal variances assumed	.002	.966	-.566	4	.602	-.16667	.29464	-.98471	.65138
	Equal variances not assumed			-.566	3.999	.602	-.16667	.29464	-.98479	.65146
kh_M	Equal variances assumed	5.703	.075	-.292	4	.785	-.19333	.66150	-2.02994	1.64328
	Equal variances not assumed			-.292	2.515	.792	-.19333	.66150	-2.54767	2.16100
antiok_M	Equal variances assumed	.617	.476	-.139	4	.896	-.11667	.83838	-2.44438	2.21104
	Equal variances not assumed			-.139	3.706	.897	-.11667	.83838	-2.51913	2.28579
antiok_s angrai_M	Equal variances assumed	1.195	.336	5.276	4	.006	1.33000	.25210	.63005	2.02995
	Equal variances not assumed			5.276	2.993	.013	1.33000	.25210	.52663	2.13337

Kesimpulan :

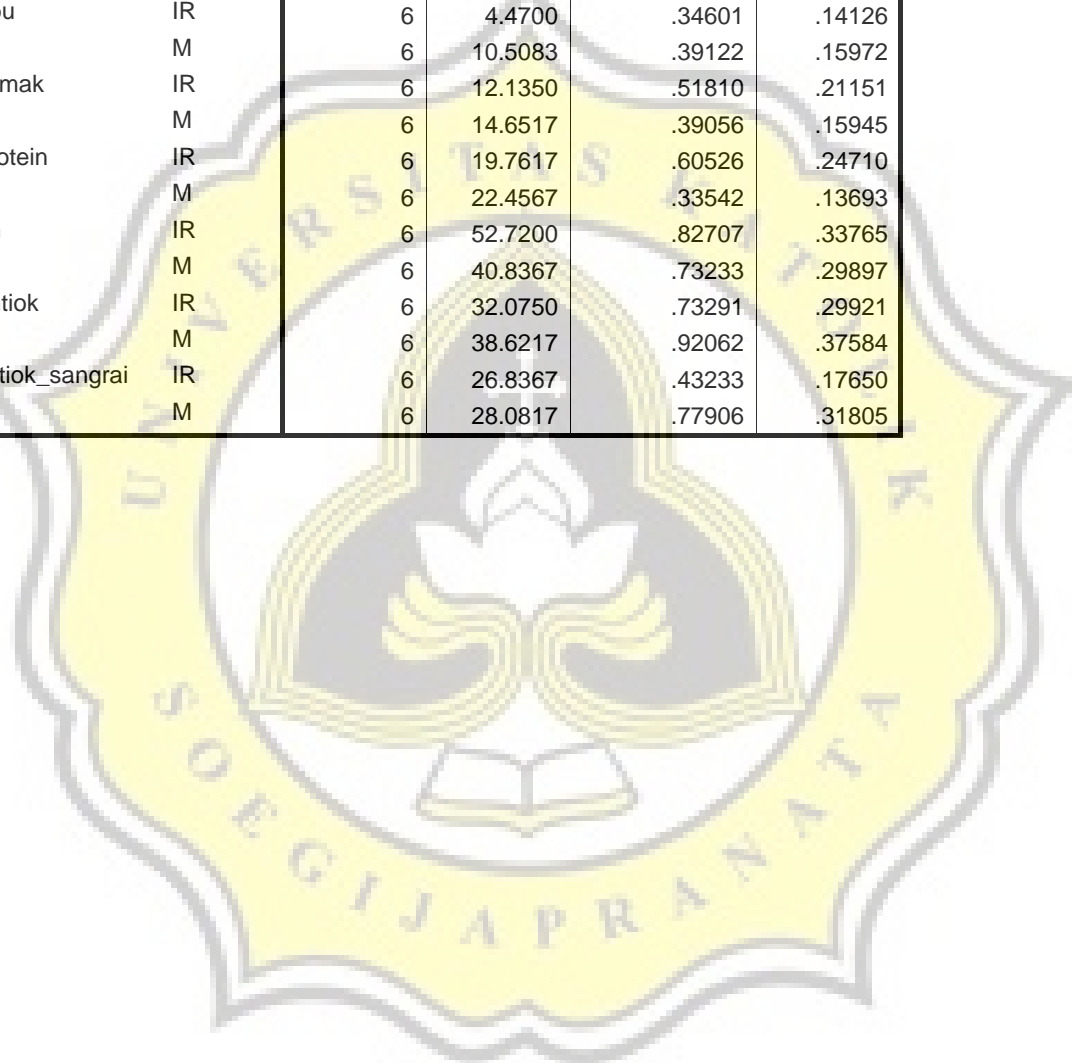
- Signifikansi two tailed > 0.05 artinya tidak terdapat beda nyata antara batch 1 dan 2

Beda nyata varietas IR-64 dan Mentik Wangi

Proksimat

Group Statistics

	varietas	N	Mean	Std. Deviation	Std. Error Mean
Air	IR	6	10.9150	.29656	.12107
	M	6	11.5483	.33564	.13703
Abu	IR	6	4.4700	.34601	.14126
	M	6	10.5083	.39122	.15972
Lemak	IR	6	12.1350	.51810	.21151
	M	6	14.6517	.39056	.15945
Protein	IR	6	19.7617	.60526	.24710
	M	6	22.4567	.33542	.13693
Kh	IR	6	52.7200	.82707	.33765
	M	6	40.8367	.73233	.29897
Antiok	IR	6	32.0750	.73291	.29921
	M	6	38.6217	.92062	.37584
antiok_sangrai	IR	6	26.8367	.43233	.17650
	M	6	28.0817	.77906	.31805



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	
									Upper	Lower
air	Equal variances assumed	1.309	.279	-3.464	10	.006	-.63333	.18285	-1.04075	-.22592
	Equal variances not assumed			-3.464	9.851	.006	-.63333	.18285	-1.04159	-.22508
abu	Equal variances assumed	.000	.985	-28.320	10	.000	6.03833	.21322	-6.51342	-5.56325
	Equal variances not assumed			-28.320	9.853	.000	6.03833	.21322	-6.51438	-5.56229
lemak	Equal variances assumed	1.948	.193	-9.501	10	.000	2.51667	.26488	-3.10685	-1.92648
	Equal variances not assumed			-9.501	9.295	.000	2.51667	.26488	-3.11297	-1.92036
protein	Equal variances assumed	2.304	.160	-9.540	10	.000	2.69500	.28250	-3.32445	-2.06555
	Equal variances not assumed			-9.540	7.806	.000	2.69500	.28250	-3.34927	-2.04073
kh	Equal variances assumed	.089	.772	26.349	10	.000	11.88333	.45099	10.87847	12.88820
	Equal variances not assumed			26.349	9.856	.000	11.88333	.45099	10.87647	12.89020
antiok	Equal variances assumed	.423	.530	-13.628	10	.000	6.54667	.48040	-7.61706	-5.47628
	Equal variances not assumed			-13.628	9.522	.000	6.54667	.48040	-7.62439	-5.46894
antiok_sangrai	Equal variances assumed	5.245	.045	-3.423	10	.007	1.24500	.36374	-2.05546	-.43454
	Equal variances not assumed			-3.423	7.813	.009	1.24500	.36374	-2.08730	-.40270

Kesimpulan :

- Pada pengujian air dan aktivitas antioksidan setelah disangrai didapatkan signifikansi two tailed > 0.05 artinya tidak terdapat beda nyata antara varietas IR dan Mentik Wangi
- Pada pengujian abu, lemak, protein, karbohidrat, dan antioksidan (sebelum sangrai) didapatkan signifikansi two tailed < 0.05 artinya terdapat beda nyata antara varietas IR-64 dan Mentik Wangi

Antioksidan bekatul mentah dan *stabilized* bekatul varietas IR-64 dan Mentik Wangi

Group Statistics

Bekatul		N	Mean	Std. Deviation	Std. Error Mean
IR	bekatul mentah	6	32.0750	.73291	.29921
	stabilized bekatul	6	26.8367	.43233	.17650
MW	bekatul mentah	6	38.6217	.92062	.37584
	stabilized bekatul	6	28.0817	.77906	.31805

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	
								Upper	Lower	
IR	Equal variances assumed	2.418	.151	15.079	10	.000	5.23833	.34738	4.46431	6.01235
	Equal variances not assumed			15.079	8.104	.000	5.23833	.34738	4.43905	6.03762
M W	Equal variances assumed	.105	.753	21.407	10	.000	10.54000	.49235	9.44297	11.63703
	Equal variances not assumed			21.407	9.734	.000	10.54000	.49235	9.43888	11.64112

Kesimpulan :

- Pada pengujian aktivitas antioksidan didapatkan signifikansi two tailed ≤ 0.05 artinya terdapat beda nyata antara bekatul mentah dan *stabilized* bekatul pada varietas IR dan Mentik Wangi.

Vitamin B₁ bekatul mentah dan *stabilized* bekatul varietas IR-64 dan Mentik Wangi

Beda nyata batch TBA

Group Statistics

	Batch	N	Mean	Std. Deviation	Std. Error Mean
bm_mw	batch1	3	13.8697	.93891	.54208
	batch2	3	13.0607	.59301	.34238
sb_mw	batch1	3	4.3333	.38913	.22467
	batch2	3	4.3450	.70216	.40539
bm_ir	batch1	3	9.0773	.75070	.43342
	batch2	3	9.7427	.51202	.29561
sb_ir	batch1	3	2.3493	.14838	.08567
	batch2	3	2.5290	.40624	.23454

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	
								Upper	Lower	
bm_mw	Equal variances assumed	.848	.409	1.262	4	.276	.80900	.64115	-.97112	2.58912
	Equal variances not assumed			1.262	3.377	.287	.80900	.64115	-1.10854	2.72654
sb_mw	Equal variances assumed	1.492	.289	-.025	4	.981	-.01167	.46349	-1.29851	1.27518
	Equal variances not assumed			-.025	3.123	.981	-.01167	.46349	-1.45445	1.43112
bm_ir	Equal variances assumed	.593	.484	1.268	4	.274	-.66533	.52463	-2.12195	.79128
	Equal variances not assumed			1.268	3.530	.282	-.66533	.52463	-2.20177	.87110
sb_ir	Equal variances assumed	2.816	.169	-.720	4	.512	-.17967	.24970	-.87294	.51361
	Equal variances not assumed			-.720	2.524	.533	-.17967	.24970	-1.06613	.70680

Kesimpulan :

Signifikansi two tailed > 0.05 artinya tidak terdapat beda nyata antara batch 1 dan 2

Beda nyata Bekatul mentah dan *Stabilized* bekatul

One way anova

Descriptives

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
bm hplc_ir	2	1.0230	.02828	.02000	.7689	1.2771	1.00	1.04
hplc_mw	2	1.3625	.01768	.01250	1.2037	1.5213	1.35	1.38
tba_ir	2	9.4100	.47093	.33300	5.1788	13.6412	9.08	9.74
tba_mw	2	13.4655	.57205	.40450	8.3258	18.6052	13.06	13.87
Total	8	6.3153	5.69502	2.01349	1.5541	11.0764	1.00	13.87
sb hplc_ir	2	.4865	.00495	.00350	.4420	.5310	.48	.49
hplc_mw	2	.5600	.01273	.00900	.4456	.6744	.55	.57
tba_ir	2	2.4390	.12728	.09000	1.2954	3.5826	2.35	2.53
tba_mw	2	4.3390	.00849	.00600	4.2628	4.4152	4.33	4.35
Total	8	1.9561	1.69271	.59846	.5410	3.3713	.48	4.35

Test of Homogeneity of Variances

	Levene Statistic	df1	df2	Sig.
bm	.	3	.	.
sb	.	3	.	.

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Bm	Between Groups	226.482	3	75.494	548.917	.000
	Within Groups	.550	4	.138		
	Total	227.033	7			
Sb	Between Groups	20.040	3	6.680	1623.514	.000
	Within Groups	.016	4	.004		
	Total	20.057	7			

Bekatul mentah

Duncan

perlakuan	N	Subset for alpha = .05			
	1	2	3	1	
hplc_ir	2	1.0230			
hplc_mw	2	1.3625			
tba_ir	2		9.4100		
tba_mw	2				13.4655
Sig.		.412	1.000		1.000

Means for groups in homogeneous subsets are displayed.

a Uses Harmonic Mean Sample Size = 2.000.

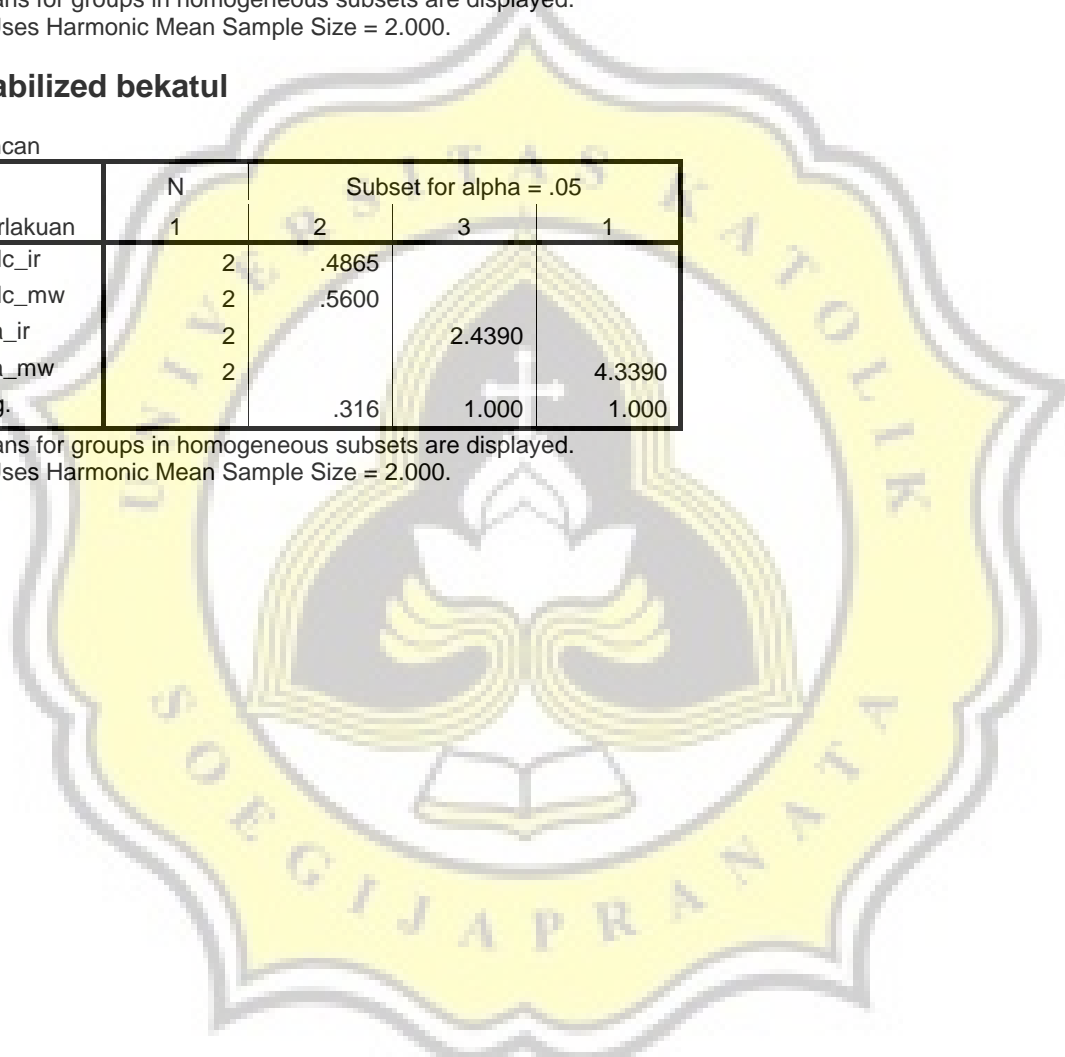
Stabilized bekatul

Duncan

perlakuan	N	Subset for alpha = .05			
	1	2	3	1	
hplc_ir	2	.4865			
hplc_mw	2	.5600			
tba_ir	2		2.4390		
tba_mw	2				4.3390
Sig.		.316	1.000		1.000

Means for groups in homogeneous subsets are displayed.

a Uses Harmonic Mean Sample Size = 2.000.



Titrasi Bebas Air

Group Statistics

	Perlakuan	N	Mean	Std. Deviation	Std. Error Mean
ir	Bm	6	9.4100	.68051	.27782
	Sb	6	2.4392	.29069	.11868
mw	Bm	6	13.4652	.83044	.33903
	Sb	6	4.3392	.50776	.20729

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means					95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Upper	Lower
ir	Equal variances assumed	3.001	.114	23.075	10	.000	6.97083	.30210	6.29771	7.64396
	Equal variances not assumed			23.075	6.766	.000	6.97083	.30210	6.25144	7.69023
mw	Equal variances assumed	.733	.412	22.966	10	.000	9.12600	.39738	8.24059	10.01141
	Equal variances not assumed			22.966	8.280	.000	9.12600	.39738	8.21501	10.03699

Kesimpulan :

Signifikansi two tailed ≤ 0.05 artinya terdapat beda nyata hasil analisa vitamin B₁ antara bekatul mentah dengan *stabilized* bekatul pada varietas IR-64 dan Mentik Wangi dengan metode Titrasi Bebas Air (pada hasil penelitian ditunjukkan dengan angka)

HPLC

Group Statistics

perlakuan	N	Mean	Std. Deviation	Std. Error Mean
ir Bm	2	1.0230	.02828	.02000
Sb	2	.4865	.00495	.00350
mw Bm	2	1.3625	.01768	.01250
Sb	2	.5600	.01273	.00900

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	
								Upper	Lower	
ir	Equal variances assumed	2036695	.000	26.423	2	.001	.53650	.02030	.44914	.62386
	Equal variances not assumed	8811267		26.423	1.061	.020	.53650	.02030	.31114	.76186
mw	Equal variances assumed	1649882	.000	52.101	2	.000	.80250	.01540	.73623	.86877
	Equal variances not assumed	0510560		52.101	1.817	.001	.80250	.01540	.72941	.87559

Kesimpulan :

Signifikansi two tailed ≤ 0.05 artinya terdapat beda nyata hasil analisa vitamin B₁ antara bekatul mentah dengan *stabilized* bekatul pada varietas IR-64 dan Mentik Wangi dengan metode HPLC (pada hasil penelitian ditunjukkan dengan angka).

7.2. Kurva Vitamin B₁ Metode HPLC

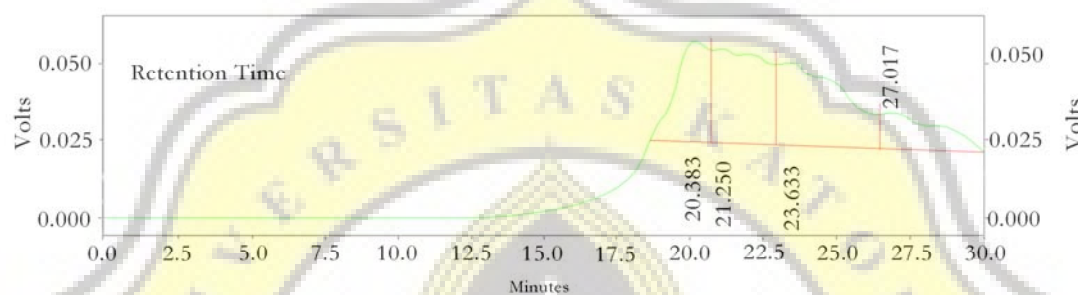
7.2.1. Kurva Bekatul Mentik Wangi

Shimadzu CLASS-VP V6.12SP4

Area%Report

Page 1 of 1

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 Data Name : C:\CLASS-VP\DJ Solo\smpMENTIKh2so413jul09004
 User : UNIKA SOEGIJAPRANATA
 Acquired : 3/1/1999 6:18:23 AM
 Printed : 3/2/1999 4:00:29 AM



Detector A (254nm)

Pk#	Retention Time	Area	Area%	Height	Height%
1	20.383	5463242	28.961	72268	33.065
2	21.250	8202117	29.528	66831	30.579
3	23.633	8648572	31.135	55748	25.507
4	27.017	2882388	10.377	23713	10.850
Totals		27777790	100.000	278563	100.000

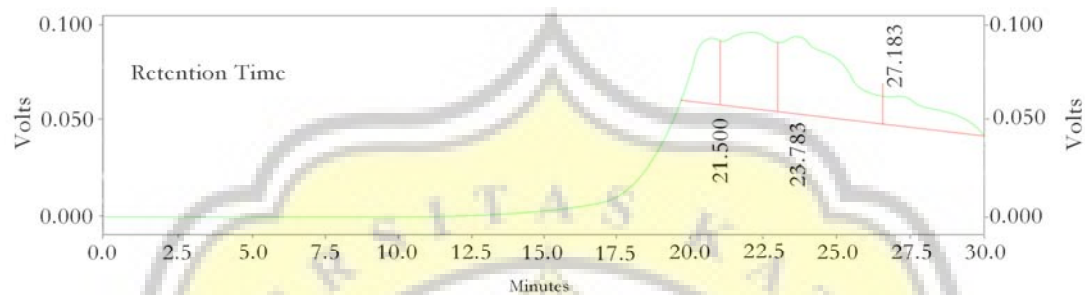
7.2.2. Kurva *Stabilized* Bekatul Mentik Wangi

Shimadzu CLASS-VP V6.12SP4

Area%Report

Page 1 of 1

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 Data Name : C:\CLASS-VP\DJ Solo\smpMENTIKsangraih2so413jul09003
 User : UNIKA SOEGIJAPRANATA
 Acquired : 3/1/1999 5:46:39 AM
 Printed : 3/2/1999 4:36:01 AM



Detector A (254nm)					
Pk#	Retention Time	Area	Area%	Height	Height%
1	21.500	2230092	23.396	9357	31.330
2	23.783	2090198	58.518	16476	55.166
3	27.183	646022	18.086	4033	13.504
Totals		3571901	100.000	29866	100.000

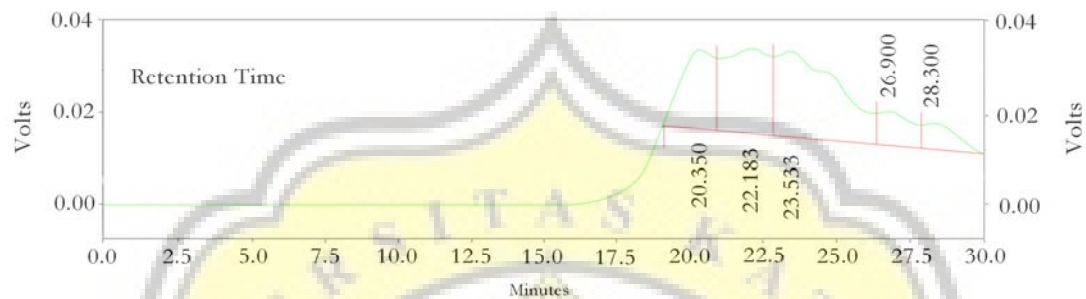
7.2.3. Kurva Bekatul IR-64

Shimadzu CLASS-VP V6.12SP4

Area%Report

Page 1 of 1

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 Data Name : C:\CLASS-VP\DJ Solo\smpIR2so413jul09006
 User : UNIKA SOEGIJAPRANATA
 Acquired : 3/1/1999 7:22:43 AM
 Printed : 3/2/1999 3:57:30 AM



Detector A (254nm)

Pk#	Retention Time	Area	Area%	Height	Height%
1	20.350	4056786	14.375	12393	26.958
2	22.183	1577672	28.241	14811	28.425
3	23.533	2358975	42.226	15764	25.533
4	26.900	460926	8.251	5778	10.770
5	28.300	385888	6.908	4869	8.314
Totals		5586496	100.000	53615	100.000

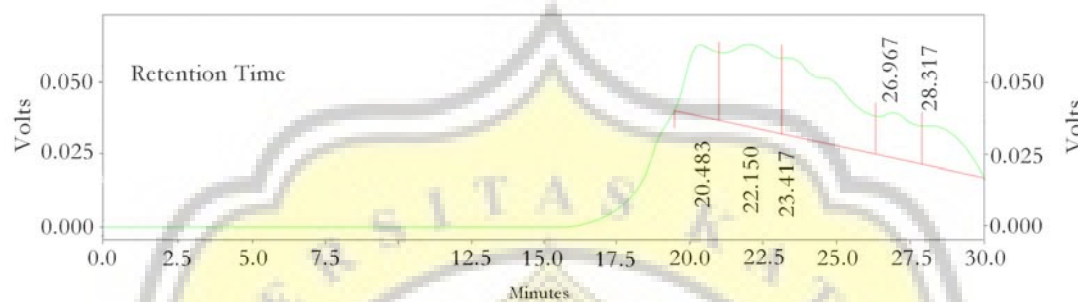
7.2.4. Kurva Stabilized Bekatul IR-64

Shimadzu CLASS-VP V6.12SP4

Area%Report

Page 1 of 1

Method Name: C:\CLASS-VP\Methods\Cuci air.met
 Data Name : C:\CLASS-VP\DJ Solo\smp1Rsangh2so413jul09005
 User : UNIKA SOEGIJAPRANATA
 Acquired : 3/1/1999 6:49:28 AM
 Printed : 3/2/1999 4:03:04 AM



Detector A (254nm)

Pk#	Retention Time	Area	Area%	Height	Height%
1	20.483	1988354	18.799	29702	26.958
2	22.150	3870211	33.406	31318	28.425
3	23.417	3850176	33.233	28131	25.533
4	26.967	993804	8.578	11866	10.770
5	28.317	693165	5.983	9160	8.314
Totals		11585311	100.000	106793	100.000