
UMRAH

Lampiran 1. Uji Anova Tiga Arah HCN pada Sisa Rendaman Limbah Padatan Talas Padatan

Tests of Between-Subjects Effects

Dependent Variable: HCN_SISA

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	82383.914[a]	8	10297.989	14.767	.000
Intercept	260676.350	1	260676.350	373.802	.000
WAKTU	39877.213	1	39877.213	57.183	.000
PERLK	31451.055	2	15725.528	22.550	.000
KONS	11055.646	5	2211.129	3.171	.011
Error	69039.111	99	697.365		
Total	412099.375	108			
Corrected Total	151423.025	107			

a. R Squared = .544 (Adjusted R Squared = .507)

HCN_SISA

Duncan[a,b]

KONS	N	Subset 1	Subset 2
0	18	27.7068	
3	18		47.4262
6	18		51.7291
9	18		54.9478
12	18		55.1356
15	18		57.8292
Sig.		1.000	.301

Means for groups in homogeneous subsets are displayed.
Based on Type III Sum of Squares
The error term is Mean Square(Error) = 697.365.

a. Uses Harmonic Mean Sample Size = 18.000.

b. Alpha = .05.

Descriptive Statistics

Dependent Variable: HCN_SISA

WAKTU	PERLK	KONS	Mean	Std. Deviation	N
1	1	0	26.9738	2.1159	3
		3	13.9296	1.1544	3
		6	16.9789	3.0544	3
		9	25.7202	3.2030	3
		12	32.7335	.4658	3
		15	41.0682	3.8369	3
		Total	26.2340	9.6441	18
	2	0	26.9738	2.1159	3
		3	40.4584	1.4084	3
		6	31.7171	2.1989	3
		9	28.2612	6.0167	3
		12	33.3434	1.8380	3
		15	31.8187	3.3726	3
		Total	32.0954	5.2156	18
	3	0	26.9738	2.1159	3
		3	43.3135	4.6943	3
		6	26.2375	4.5125	3
		9	22.2735	7.7801	3
		12	31.5321	11.2383	3
		15	38.1389	4.0338	3
		Total	31.4115	9.2375	18
	Total	0	26.9738	1.8324	9
		3	32.5672	14.2568	9
		6	24.9778	7.0889	9
		9	25.4183	5.7898	9
		12	32.5363	5.7542	9
		15	37.0086	5.2299	9
		Total	29.9137	8.5385	54
2	1	0	28.4398	2.0839	3
		3	33.5512	2.7947	3
		6	58.5553	4.3977	3
		9	74.2083	7.2758	3
		12	95.7565	3.7096	3
		15	98.8058	2.7947	3
		Total	64.8862	28.5267	18
	2	0	28.4398	2.0839	3
		3	26.4500	1.7605	3
		6	35.5978	7.6739	3
		9	33.5650	9.9977	3
		12	21.3678	4.5739	3
		15	24.9253	9.9199	3
		Total	28.3910	7.6798	18

Descriptive Statistics

Dependent Variable: HCN_SISA

WAKTU	PERLK	KONS	Mean	Std. Deviation	N
2	3	0	28.4398	2.0839	3
		3	126.8546	14.7031	3
		6	141.2879	14.7073	3
		9	145.6585	9.7211	3
		12	116.0805	13.0669	3
		15	112.2181	21.6735	3
		Total	111.7566	41.9899	18
	Total	0	28.4398	1.8047	9
		3	62.2853	49.1060	9
		6	78.4803	48.9019	9
		9	84.4773	49.7704	9
		12	77.7350	43.7723	9
		15	78.6497	42.4414	9
		Total	68.3446	45.0747	54
Total	1	0	27.7068	2.0427	6
		3	23.7404	10.9160	6
		6	37.7671	23.0228	6
		9	49.9642	27.0298	6
		12	64.2450	34.6000	6
		15	69.9370	31.7664	6
		Total	45.5601	28.7160	36
	2	0	27.7068	2.0427	6
		3	33.4542	7.8041	6
		6	33.6575	5.4779	6
		9	30.9131	7.9310	6
		12	27.3556	7.2625	6
		15	28.3720	7.6268	6
		Total	30.2432	6.7371	36
	3	0	27.7068	2.0427	6
		3	85.0841	46.7870	6
		6	83.7627	63.7624	6
		9	83.9660	68.0380	6
		12	73.8063	47.5746	6
		15	75.1785	42.9037	6
		Total	71.5841	50.5745	36
	Total	0	27.7068	1.9188	18
		3	47.4262	38.2650	18
		6	51.7291	43.6662	18
		9	54.9478	45.8776	18
		12	55.1356	38.1838	18
		15	57.8292	36.3252	18
		Total	49.1291	37.6187	108

Lampiran 2. Uji Anova Tiga Arah HCN pada Limbah Padatan Talas

Tests of Between-Subjects Effects

Dependent Variable: HCN_PDT

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	26045.656[a]	8	3255.707	37.218	.000
Intercept	90621.800	1	90621.800	1035.941	.000
WAKTU	9882.400	1	9882.400	112.970	.000
PERLK	2570.986	2	1285.493	14.695	.000
KONS	13592.270	5	2718.454	31.076	.000
Error	8660.296	99	87.478		
Total	125327.752	108			
Corrected Total	34705.952	107			

a. R Squared = .750 (Adjusted R Squared = .730)

HCN_PDT

Duncan[a,b]

KONS	N	Subset 1	2	3	4
15	18	16.2558			
12	18	22.1707	22.1707		
9	18		25.2907	25.2907	
6	18		26.7862	26.7862	
3	18			31.4662	
0	18				51.8328
Sig.		.061	.166	.063	1.000

Means for groups in homogeneous subsets are displayed.
Based on Type III Sum of Squares
The error term is Mean Square(Error) = 87.478.

a. Uses Harmonic Mean Sample Size = 18.000.

b. Alpha = .05.

Descriptive Statistics

Dependent Variable: HCN_PDT

WAKTU	PERLK	KONS	Mean	Std. Deviation	N
1	1	0	70.9062	2.5268	3
		3	50.8652	3.0193	3
		6	36.7750	3.4864	3
		9	35.7685	23.5817	3
		12	27.7170	6.9728	3
		15	21.6783	1.7432	3
		Total	40.6183	18.8309	18
	2	0	70.9062	2.5268	3
		3	57.1355	9.4278	3
		6	45.0582	4.5290	3
		9	47.5743	7.1344	3
		12	37.5099	9.8995	3
		15	22.8079	1.0459	3
		Total	46.8320	16.4353	18
	3	0	70.9062	2.5268	3
		3	20.7486	4.8810	3
		6	26.7873	6.0788	3
		9	19.4323	.6973	3
		12	16.6143	1.5197	3
		15	14.4001	2.1773	3
		Total	28.1481	20.2890	18
	Total	0	70.9062	2.1883	9
		3	42.9164	17.7270	9
		6	36.2068	8.9543	9
		9	34.2584	17.3680	9
		12	27.2804	10.9182	9
		15	19.6288	4.2232	9
		Total	38.5328	19.8473	54
2	1	0	32.7595	9.1912	3
		3	17.4658	1.8366	3
		6	15.5535	3.8469	3
		9	14.2451	1.3615	3
		12	15.4529	1.4894	3
		15	12.6348	1.0886	3
		Total	18.0186	7.8075	18
	2	0	32.7595	9.1912	3
		3	26.7105	3.0193	3
		6	24.6976	9.7058	3
		9	17.6525	9.0580	3
		12	18.6590	4.6121	3
		15	15.6397	7.5985	3
		Total	22.6865	8.8666	18

Descriptive Statistics

Dependent Variable: HCN_PDT

WAKTU	PERLK	KONS	Mean	Std. Deviation	N
2	3	0	32.7595	9.1912	3
		3	15.8714	2.3060	3
		6	11.8456	3.9942	3
		9	17.0711	4.5290	3
		12	17.0711	5.5098	3
		15	10.3743	2.2862	3
		Total	17.4988	8.6757	18
	Total	0	32.7595	7.9598	9
		3	20.0159	5.4899	9
		6	17.3656	8.0035	9
		9	16.3229	5.3474	9
		12	17.0610	3.9229	9
		15	12.8829	4.6119	9
		Total	19.4013	8.6287	54
Total	1	0	51.8328	21.7462	6
		3	34.1655	18.4296	6
		6	26.1642	12.0783	6
		9	25.0068	19.0304	6
		12	21.5849	8.0906	6
		15	17.1566	5.1210	6
		Total	29.3185	18.2532	36
	2	0	51.8328	21.7462	6
		3	41.9230	17.8018	6
		6	34.8779	13.0480	6
		9	32.6134	17.9380	6
		12	28.0844	12.4224	6
		15	19.2238	6.2408	6
		Total	34.7592	17.8690	36
	3	0	51.8328	21.7462	6
		3	18.3100	4.3351	6
		6	19.3164	9.3882	6
		9	18.2517	3.1736	6
		12	16.8427	3.6234	6
		15	12.3872	2.9747	6
		Total	22.8235	16.2991	36
	Total	0	51.8328	20.4270	18
		3	31.4662	17.3460	18
		6	26.7862	12.7218	18
		9	25.2907	15.5100	18
		12	22.1707	9.5386	18
		15	16.2558	5.5180	18
		Total	28.9671	18.0098	108

Lampiran 3. Uji Anova Tiga Arah HCN pada Penurunan Limbah Padatan Talas

Tests of Between-Subjects Effects

Dependent Variable: PNRN_PDT

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	2239.627[a]	8	279.953	37.218	.000
Intercept	904316.811	1	904316.811	120221.7	.000
WAKTU	849.773	1	849.773	112.970	.000
PERLK	221.075	2	110.538	14.695	.000
KONS	1168.779	5	233.756	31.076	.000
Error	744.686	99	7.522		
Total	907301.123	108			
Corrected Total	2984.312	107			

a. R Squared = .750 (Adjusted R Squared = .730)

PNRN_PDT

Duncan[a,b]

KONS	N	Subset 1	Subset 2	Subset 3	Subset 4
0	18	84.8007			
3	18		90.7729		
6	18		92.1453	92.1453	
9	18		92.5838	92.5838	
12	18			93.4987	93.4987
15	18				95.2332
Sig.		1.000	.063	.166	.061

Means for groups in homogeneous subsets are displayed.
Based on Type III Sum of Squares
The error term is Mean Square(Error) = 7.522.

a. Uses Harmonic Mean Sample Size = 18.000.

b. Alpha = .05.

Descriptive Statistics

Dependent Variable: PNRN_PDT

WAKTU	PERLK	KONS	Mean	Std. Deviation	N
1	1	0	79.2076	.7410	3
		3	85.0844	.8854	3
		6	89.2162	1.0224	3
		9	89.5113	6.9151	3
		12	91.8723	2.0447	3
		15	93.6431	.5112	3
		Total	88.0892	5.5219	18
	2	0	79.2076	.7410	3
		3	83.2457	2.7646	3
		6	86.7872	1.3281	3
		9	86.0494	2.0921	3
		12	89.0007	2.9029	3
		15	93.3119	.3067	3
		Total	86.2671	4.8194	18
	3	0	79.2076	.7410	3
		3	93.9157	1.4313	3
		6	92.1449	1.7825	3
		9	94.3017	.2045	3
		12	95.1281	.4456	3
		15	95.7773	.6385	3
		Total	91.7459	5.9495	18
	Total	0	79.2076	.6417	9
		3	87.4153	5.1982	9
		6	89.3828	2.6257	9
		9	89.9541	5.0930	9
		12	92.0004	3.2016	9
		15	94.2441	1.2384	9
		Total	88.7007	5.8200	54
2	1	0	90.3937	2.6952	3
		3	94.8784	.5386	3
		6	95.4391	1.1281	3
		9	95.8228	.3992	3
		12	95.4686	.4367	3
		15	96.2950	.3192	3
		Total	94.7163	2.2894	18
	2	0	90.3937	2.6952	3
		3	92.1675	.8854	3
		6	92.7577	2.8461	3
		9	94.8236	2.6561	3
		12	94.5285	1.3524	3
		15	95.4139	2.2282	3
		Total	93.3475	2.6000	18

Descriptive Statistics

Dependent Variable: PNRN_PDT

WAKTU	PERLK	KONS	Mean	Std. Deviation	N
2	3	0	90.3937	2.6952	3
		3	95.3459	.6762	3
		6	96.5264	1.1712	3
		9	94.9941	1.3281	3
		12	94.9941	1.6157	3
		15	96.9579	.6704	3
		Total	94.8687	2.5440	18
	Total	0	90.3937	2.3341	9
		3	94.1306	1.6098	9
		6	94.9078	2.3469	9
		9	95.2135	1.5681	9
		12	94.9971	1.1503	9
		15	96.2222	1.3524	9
		Total	94.3108	2.5303	54
Total	1	0	84.8007	6.3768	6
		3	89.9814	5.4043	6
		6	92.3277	3.5418	6
		9	92.6670	5.5804	6
		12	93.6705	2.3725	6
		15	94.9690	1.5017	6
		Total	91.4027	5.3525	36
	2	0	84.8007	6.3768	6
		3	87.7066	5.2202	6
		6	89.7725	3.8262	6
		9	90.4365	5.2601	6
		12	91.7646	3.6427	6
		15	94.3629	1.8300	6
		Total	89.8073	5.2399	36
	3	0	84.8007	6.3768	6
		3	94.6308	1.2712	6
		6	94.3357	2.7530	6
		9	94.6479	.9306	6
		12	95.0611	1.0625	6
		15	96.3676	.8723	6
		Total	93.3073	4.7795	36
	Total	0	84.8007	5.9900	18
		3	90.7729	5.0865	18
		6	92.1453	3.7305	18
		9	92.5838	4.5481	18
		12	93.4987	2.7971	18
		15	95.2332	1.6181	18
		Total	91.5058	5.2812	108

Lampiran 4. Uji Anova Tiga Arah HCN pada Pengeringan Menggunakan Oven dan Sinar Matahari

Tests of Between-Subjects Effects

Dependent Variable: OM

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	205972.717[a]	8	25746.590	38.586	.000
Intercept	685037.531	1	685037.531	1026.667	.000
WAKTU	103301.533	1	103301.533	154.818	.000
PERLK	53510.759	2	26755.380	40.098	.000
KONS	49160.425	5	9832.085	14.735	.000
Error	66057.196	99	667.244		
Total	957067.444	108			
Corrected Total	272029.914	107			

a. R Squared = .757 (Adjusted R Squared = .738)

OM

Duncan[a,b]

KONS	N	Subset 1	Subset 2	Subset 3
15	18	51.2251		
12	18	67.8907	67.8907	
9	18		71.8385	
6	18		82.9509	
3	18		83.0524	
0	18			120.8979
Sig.		.056	.111	1.000

Means for groups in homogeneous subsets are displayed.
Based on Type III Sum of Squares
The error term is Mean Square(Error) = 667.244.

a. Uses Harmonic Mean Sample Size = 18.000.

b. Alpha = .05.

Descriptive Statistics

Dependent Variable: OM

WAKTU	PERLK	KONS	Mean	Std. Deviation	N
1	1	0	71.5294	18.0862	3
		3	53.9164	9.3157	3
		6	57.9821	10.9943	3
		9	63.0642	36.6337	3
		12	54.9328	27.4435	3
		15	20.3743	11.5444	3
		Total	53.6332	24.4162	18
	2	0	71.5294	18.0862	3
		3	74.0142	5.5000	3
		6	67.5090	7.1469	3
		9	66.2893	8.5670	3
		12	65.4762	3.7263	3
		15	56.1251	5.5894	3
		Total	66.8239	9.7816	18
	3	0	71.5294	18.0862	3
		3	25.6689	6.3378	3
		6	29.3280	3.6591	3
		9	7.3721	3.6591	3
		12	11.0323	7.3183	3
		15	9.2028	1.8296	3
		Total	25.6889	23.9018	18
	Total	0	71.5294	15.6631	9
		3	51.1998	21.9474	9
		6	51.6064	18.5078	9
		9	45.5752	34.3527	9
		12	43.8138	28.8178	9
		15	28.5674	22.1933	9
		Total	48.7153	26.5483	54
2	1	0	170.2664	2.0464	3
		3	67.1391	12.8505	3
		6	71.4087	9.1478	3
		9	58.9100	41.5037	3
		12	69.4767	1.6561	3
		15	65.0501	8.7697	3
		Total	83.7085	42.9512	18
	2	0	170.2664	2.0464	3
		3	168.7726	34.2733	3
		6	167.7562	6.0986	3
		9	144.8877	1.5246	3
		12	148.4441	47.3703	3
		15	127.0991	7.6739	3
		Total	154.5377	26.0836	18

Descriptive Statistics

Dependent Variable: OM

WAKTU	PERLK	KONS	Mean	Std. Deviation	N
2	3	0	170.2664	2.0464	3
		3	108.8034	7.0420	3
		6	103.7213	10.9943	3
		9	90.5077	3.5210	3
		12	57.9821	5.2815	3
		15	29.4993	9.1901	3
		Total	93.4634	45.6288	18
	Total	0	170.2664	1.7722	9
		3	114.9050	48.0109	9
		6	114.2954	43.1725	9
		9	98.1018	43.0440	9
		12	91.9676	48.8627	9
		15	73.8828	43.4168	9
		Total	110.5698	49.7870	54
Total	1	0	120.8979	55.2921	6
		3	60.5277	12.3782	6
		6	64.6954	11.6579	6
		9	60.9871	35.0858	6
		12	62.2047	19.1262	6
		15	42.7122	26.1314	6
		Total	68.6708	37.6590	36
	2	0	120.8979	55.2921	6
		3	121.3934	56.3535	6
		6	117.6326	55.2282	6
		9	105.5885	43.4004	6
		12	106.9601	54.4815	6
		15	91.6121	39.3350	6
		Total	110.6808	48.5316	36
	3	0	120.8979	55.2921	6
		3	67.2361	45.9272	6
		6	66.5246	41.4007	6
		9	48.9399	45.6484	6
		12	34.5072	26.3413	6
		15	19.3510	12.5979	6
		Total	59.5761	49.6980	36
	Total	0	120.8979	51.9379	18
		3	83.0524	48.8434	18
		6	82.9509	45.5914	18
		9	71.8385	46.4498	18
		12	67.8907	46.1320	18
		15	51.2251	40.7729	18
		Total	79.6426	50.4216	108

Lampiran 5. Uji Anova Tiga Arah HCN pada Penurunan Pengeringan Menggunakan Oven dan Sinar Matahari

Tests of Between-Subjects Effects

Dependent Variable: PNRN_OM

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	17711.282[a]	8	2213.910	38.586	.000
Intercept	634454.086	1	634454.086	11057.959	.000
WAKTU	8882.742	1	8882.742	154.818	.000
PERLK	4601.309	2	2300.655	40.098	.000
KONS	4227.230	5	845.446	14.735	.000
Error	5680.158	99	57.375		
Total	657845.526	108			
Corrected Total	23391.440	107			

a. R Squared = .757 (Adjusted R Squared = .738)

PNRN_OM

Duncan[a,b]

KONS	N	Subset 1	Subset 2	Subset 3
0	18	64.5482		
3	18		75.6459	
6	18		75.6757	
9	18		78.9342	
12	18		80.0919	80.0919
15	18			84.9789
Sig.		1.000	.111	.056

Means for groups in homogeneous subsets are displayed.
Based on Type III Sum of Squares
The error term is Mean Square(Error) = 57.375.

a. Uses Harmonic Mean Sample Size = 18.000.

b. Alpha = .05.

Descriptive Statistics

Dependent Variable: PNRN_OM

WAKTU	PERLK	KONS	Mean	Std. Deviation	N
1	1	0	79.0249	5.3036	3
		3	84.1897	2.7317	3
		6	82.9975	3.2240	3
		9	81.5072	10.7424	3
		12	83.8916	8.0475	3
		15	94.0255	3.3853	3
		Total	84.2727	7.1598	18
	2	0	79.0249	5.3036	3
		3	78.2962	1.6128	3
		6	80.2038	2.0957	3
		9	80.5615	2.5122	3
		12	80.7999	1.0927	3
		15	83.5420	1.6390	3
		Total	80.4047	2.8683	18
	3	0	79.0249	5.3036	3
		3	92.4729	1.8585	3
		6	91.3999	1.0730	3
		9	97.8382	1.0730	3
		12	96.7649	2.1460	3
		15	97.3014	.5365	3
		Total	92.4670	7.0089	18
	Total	0	79.0249	4.5930	9
		3	84.9863	6.4358	9
		6	84.8671	5.4272	9
		9	86.6356	10.0735	9
		12	87.1521	8.4505	9
		15	91.6230	6.5079	9
		Total	85.7148	7.7850	54
2	1	0	50.0714	.6001	3
		3	80.3123	3.7682	3
		6	79.0603	2.6825	3
		9	82.7254	12.1705	3
		12	79.6268	.4856	3
		15	80.9248	2.5716	3
		Total	75.4535	12.5949	18
	2	0	50.0714	.6001	3
		3	50.5095	10.0502	3
		6	50.8075	1.7883	3
		9	57.5134	.4471	3
		12	56.4706	13.8908	3
		15	62.7297	2.2503	3
		Total	54.6837	7.6487	18

Descriptive Statistics

Dependent Variable: PNRN_OM

WAKTU	PERLK	KONS	Mean	Std. Deviation	N
2	3	0	50.0714	.6001	3
		3	68.0947	2.0650	3
		6	69.5850	3.2240	3
		9	73.4597	1.0325	3
		12	82.9975	1.5487	3
		15	91.3497	2.6949	3
		Total	72.5930	13.3801	18
	Total	0	50.0714	.5197	9
		3	66.3055	14.0786	9
		6	66.4843	12.6598	9
		9	71.2328	12.6221	9
		12	73.0316	14.3284	9
		15	78.3348	12.7315	9
		Total	67.5767	14.5994	54
Total	1	0	64.5482	16.2138	6
		3	82.2510	3.6297	6
		6	81.0289	3.4185	6
		9	82.1163	10.2885	6
		12	81.7592	5.6085	6
		15	87.4752	7.6627	6
		Total	79.8631	11.0430	36
	2	0	64.5482	16.2138	6
		3	64.4029	16.5250	6
		6	65.5057	16.1950	6
		9	69.0374	12.7267	6
		12	68.6352	15.9760	6
		15	73.1359	11.5345	6
		Total	67.5442	14.2313	36
	3	0	64.5482	16.2138	6
		3	80.2838	13.4676	6
		6	80.4925	12.1402	6
		9	85.6490	13.3858	6
		12	89.8812	7.7243	6
		15	94.3256	3.6942	6
		Total	82.5300	14.5733	36
	Total	0	64.5482	15.2302	18
		3	75.6459	14.3227	18
		6	75.6757	13.3691	18
		9	78.9342	13.6208	18
		12	80.0919	13.5277	18
		15	84.9789	11.9561	18
		Total	76.6458	14.7855	108

Lampiran 6. Perhitungan Pengenceran pada Kurva Standar

4 mM KCN = 0,004 M

x = 0,004 M * BM * 0,1

= 0,004 M * 65,12 * 0,1

= 0,026 gram ==> 100 ml NaOH 0,1

ambil 1 ml NaOH 0,1 dilarutkan 100 ml NaOH = 40 µM

10 µM = $\frac{10}{40}$ x 50 ml = 12,5 ml ⟶ 50 ml

8 µM = $\frac{8}{10}$ x 50 ml = 40 ml ⟶ 50 ml

6 µM = $\frac{6}{8}$ x 50 ml = 37,5 ml ⟶ 50 ml

4 µM = $\frac{4}{6}$ x 50 ml = 33,3 ml ⟶ 50 ml

2 µM = $\frac{2}{4}$ x 50 ml = 25 ml ⟶ 50 ml

Lampiran 7. Perhitungan dalam mg/l menjadi mg /100 g

Catatan :

µl = mg/l µg = mg/kg

Sampel : 500 µl

mg/l ⟶ mg/100g

10 gram ⟶ NaOH 0,1 N 100 ml ⟶ 1 ml

$\frac{10\ g}{100\ ml} \times 1\ ml = 0{,}1\ g$

0,1 g ⟶ $\frac{100000\ \mu g}{500\ \mu g}$

$= 200\ \mu g$

200 mg/kg ⟶ mg/100 g

= 200 mg/1000 g ⟶ mg/100 g

= 20 mg/100 g