LAMPIRAN A

HASIL PEMERIKSAAN STANDARISASI PARAMETRIK EKSTRAK ROSELLA

A. PEMERIKSAAN ORGANOLEPTIS EKSTRAK ROSELLA

Pemeriksaan	Ekstrak Rosella
Bentuk	Serbuk
Warna	Merah
Bau	Khas rosella
Rasa	Asam

B. HASIL PENENTUAN pH EKSTRAK ROSELLA

Replikasi	Ekstrak Rosella
I	3,21
II	3,22
III	3,21
$\overline{X}$ ± SD	3,21±0,005

C. HASIL PENENTUAN KADAR SARI LARUT AIR EKSTRAK ROSELLA

Replikasi	Berat cawan(g)	Berat ekstrak (g)	Berat konstan	% kadar
1	81,1772	5,0039	81,1563	95,89
2	76,2100	5,0038	76,1816	97,44
3	79,3394	5,0015	79,2535	98,96
$\overline{X}$ ± SD				97,43±1,53

Contoh perhitungan standarisasi kadar sari larut air :

Berat cawan sesudah dipanaskan = 81,1563

Berat cawan kosong = 80,1966

Berat ekstrak = 5,0039/5

= 1,0078

% kadar = berat pemanasan terakhir – berat cawan kosong x 100%

Berat ekstrak/5

% kadar = (81,1563 – 80,1966) x100%

1,0078

= 95,89%

D. HASIL PENENTUAN KADAR SARI LARUT ETANOL EKSTRAK ROSELLA

Replikasi	Berat cawan(g)	Berat ekstrak (g)	Berat konstan	% kadar
1	57,8016	5,0026	57,7713	29,25
2	41,3881	5,0034	41,3819	29,73
3	72,9216	5,0015	72,6671	29,72
$\overline{X}$ ± SD				29,57±0,27

Contoh perhitungan standarisasi kadar sari larut etanol :

Berat cawan sesudah dipanaskan = 57,7713

Berat cawan kosong = 57,4786

Berat ekstrak = 5,0026/5

= 1,00052

% kadar = berat pemanasan terakhir – berat cawan kosong x 100%

Berat ekstrak/5

% kadar = (57,7713 – 57,4786) x100%

1,00052

= 29,25%

LAMPIRAN B

HASIL PEMERIKSAAN STANDARISASI NON PARAMETRIK EKSTRAK ROSELLA

A. HASIL PENENTUAN KADAR ABU TOTAL EKSTRAK ROSELLA

Rep	Berat krus (g)	Berat ekstrak (g)	Berat krus+abu konstan (g)	% kadar
I	36,3608	2,5042	36,4647	4,14
II	35,1912	2,5102	35,2952	4,14
III	23,3239	2,5042	23,4260	4,08
$\overline{X}$ ± SD				4,12±0,01

Contoh Perhitungan standarisasi kadar abu total :

$$\% \text{ kadar} = \frac{\text{berat abu konstan} - \text{berat kurs}}{\text{Berat ekstrak}} \times 100\%$$

$$\% \text{ kadar} = \frac{36,4647 - 36,3608}{2,5042} \times 100\%$$

$$= 4,14$$

B. HASIL PENETAPAN KADAR ABU TIDAK LARUT ASAM EKSTRAK ROSELLA

Replikasi	Berat krus (g)	Berat krus+abu konstan (g)	Berat abu+HCl konstan (g)	% kadar
I	23,4802	36,2526	22,2886	9,32
II	24,8618	34,3136	23,8586	10,61
III	23,4920	36,2626	23,32324	9,15
$\overline{X}$ ± SD				9,69±0,79

Contoh Perhitungan standarisasi kadar abu tidak larut asam:

% kadar = berat abu setelah penambahan HCl x 100%

Berat abu total – berat kurs

% kadar = 22,2886 – 23,4802 x 100%

36, 2526 – 23,4802

= 9,32%

C. HASIL PENETAPAN KADAR ABU LARUT AIR EKSTRAK ROSELLA

Replikasi	Berat krus (g)	Berat krus+abu konstan (g)	Berat abu+ aquadest (g)	% kadar
I	22,2703	36,2731	23,4740	8,59
II	23,8038	34,5341	22,8239	9,13
III	23,2801	34,2659	24,2015	8,39
$\overline{X}$ ± SD				8,70±0,38

Contoh Perhitungan standarisasi kadar abu larut air :

% kadar = berat abu setelah penambahan Aquadest x 100%

Berat abu total – berat kurs

% kadar = 23,4740 – 22,2703 x 100%

36,2731 – 22,2705

= 8,59%

D. HASIL PENENTUAN KADAR AIR

Rep	Berat cawan (g)	Berat cawan+ekstrak	Berat cawan+ekstrak konstan (g)	% kadar
1	75,7586	85,7628	85,7560	0,06
2	68,5794	78,6104	78,6010	0,09
3	63,5846	73,5865	73,5668	0,19
$\overline{x}$ ± SD				0,11±0,07

Contoh Perhitungan standarisasi kadar air :

$$\% \text{ kadar} = \frac{\text{berat ekstrak} - \text{berat ekstrak konstan}}{\text{Berat ekstrak}} \times 100\%$$

$$\% \text{ kadar} = \frac{10{,}0042 - 9{,}9974}{10{,}0042} \times 100\%$$

$$= 0{,}06\%$$

E. HASIL PENENTUAN SUSUT PENGERINGAN

Replikasi	Ekstrak kering rosella
I	4,00
II	4,10
III	4,17
$\bar{x}$ ± SD	4,09±0,08

LAMPIRAN C

HASIL ANOVA SATU ARAH UJI MUTU FISIK PENYALUT

A. VISKOSITAS

ANOVA

viskositas penyalut

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	162.887	3	54.296	249.635	.000
Within Groups	1.740	8	.217		
Total	164.627	11			

Multiple Comparisons

Tukey HSD

(I) formula	(J) formula	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Formula A	Formula B	.50000	.38079	.580	-.7194	1.7194
	Formula c	-.76667	.38079	.260	-1.9861	.4528
	Formula D	-8.53333*	.38079	.000	-9.7528	-7.3139
Formula B	Formula A	-.50000	.38079	.580	-1.7194	.7194
	Formula c	-1.26667*	.38079	.042	-2.4861	-.0472
	Formula D	-9.03333*	.38079	.000	-10.2528	-7.8139
Formula c	Formula A	.76667	.38079	.260	-.4528	1.9861
	Formula B	1.26667*	.38079	.042	.0472	2.4861
	Formula D	-7.76667*	.38079	.000	-8.9861	-6.5472
Formula D	Formula A	8.53333*	.38079	.000	7.3139	9.7528
	Formula B	9.03333*	.38079	.000	7.8139	10.2528
	Formula c	7.76667*	.38079	.000	6.5472	8.9861

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

Karena F hitung = 249,635 > F tabel $_{0,05(3,8)}$ = 4,07; maka H_0 ditolak dan ada perbedaan yang bermakna antar formula

viskositas penyalut

Tukey HSD

formula	N	Subset for alpha = 0.05		
		1	2	3
Formula B	3	24.1333		
Formula A	3	24.6333	24.6333	
Formula c	3		25.4000	
Formula D	3			33.1667
Sig.		.580	.260	1.000

B. BERAT JENIS

ANOVA

berat jenis

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.003	3	.001	1.209E3	.000
Within Groups	.000	8	.000		
Total	.003	11			

Multiple Comparisons

berat jenis

Tukey HSD

(I) formula	(J) formula	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
formula A	formula B	-.0202000*	.0007157	.000	-.022492	-.017908
	formula C	.0005000	.0007157	.895	-.001792	.002792
	formula D	.0228667*	.0007157	.000	.020575	.025159
formula B	formula A	.0202000*	.0007157	.000	.017908	.022492
	formula C	.0207000*	.0007157	.000	.018408	.022992
	formula D	.0430667*	.0007157	.000	.040775	.045359
formula C	formula A	-.0005000	.0007157	.895	-.002792	.001792
	formula B	-.0207000*	.0007157	.000	-.022992	-.018408
	formula D	.0223667*	.0007157	.000	.020075	.024659
formula D	formula A	-.0228667*	.0007157	.000	-.025159	-.020575
	formula B	-.0430667*	.0007157	.000	-.045359	-.040775
	formula C	-.0223667*	.0007157	.000	-.024659	-.020075

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

Karena F hitung = 0,0012 < F tabel $_{0,05(3,8)}$ = 4,07; maka H_0 diterima dan tidak ada perbedaan yang bermakna antar formula

berat jenis

Tukey HSD

formula	N	Subset for alpha = 0.05		
		1	2	3
formula D	3	1.011433E0		
formula C	3		1.033800E0	
formula A	3		1.034300E0	
formula B	3			1.054500E0
Sig.		1.000	.895	1.000

Means for groups in homogeneous subsets are displayed.

C. UJI pH LARUTAN PENYALUT

NOVA

pH

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.091	3	.030	23.242	.000
Within Groups	.010	8	.001		
Total	.102	11			

Multiple Comparisons

pH
Tukey HSD

(I) formula	(J) formula	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
formula A	formula B	.14333*	.02953	.006	.0488	.2379
	formula C	-.04000	.02953	.558	-.1346	.0546
	formula D	.16000*	.02953	.003	.0654	.2546
formula B	formula A	-.14333*	.02953	.006	-.2379	-.0488
	formula C	-.18333*	.02953	.001	-.2779	-.0888
	formula D	.01667	.02953	.940	-.0779	.1112
formula C	formula A	.04000	.02953	.558	-.0546	.1346
	formula B	.18333*	.02953	.001	.0888	.2779
	formula D	.20000*	.02953	.001	.1054	.2946
formula D	formula A	-.16000*	.02953	.003	-.2546	-.0654
	formula B	-.01667	.02953	.940	-.1112	.0779
	formula C	-.20000*	.02953	.001	-.2946	-.1054

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

Karena F hitung = 23,242 >F tabel $_{0,05(3,8)}$ = 4,07; maka H_0 ditolak dan ada perbedaan yang bermakna antar formula

pH			
Tukey HSD			
formula	N	Subset for alpha = 0.05	
		1	2
formula D	3	3.5000	
formula B	3	3.5167	
formula A	3		3.6600
formula C	3		3.7000
Sig.		.940	.558
Means for groups in homogeneous subsets are displayed.			

LAMPIRAN D

HASIL UJI STATISTIK ANTAR BETS FORMULA TABLET SALUT ENTERIK EKSTRAK KELOPAK ROSELLA

A. KESERAGAMAN BOBOT

Formula A

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	Formula A - Formula A	.09000	.11314	.08000	-.92650	1.10650	1.125	1	.463

Hipotesa pengujian :

T hitung < T tabel (0,05) sehingga tidak ada perbedaan yang bermakna antar bets.

Formula B

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	Formula B - Formula B	-.01667	.08021	.04631	-.21591	.18258	-.360	2	.753

Hipotesa pengujian :

T hitung < T tabel (0,05) sehingga tidak ada perbedaan yang bermakna antar bets.

Formula C

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	Formula C - Formula C	.06333	.09292	.05364	-.16748	.29415	1.181	2	.359

Hipotesa pengujian :

T hitung < T tabel (0,05) sehingga tidak ada perbedaan yang bermakna antar bets.

Formula D

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	Formula D - Formula D	.02667	.05508	.03180	-.11015	.16348	.839	2	.490

Hipotesa pengujian :

T hitung < T tabel (0,05) sehingga tidak ada perbedaan yang bermakna antar bets.

B. WAKTU HANCUR

Formula A

paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	Formula A - Formula A	.39333	1.36324	.78707	-2.99315	3.77982	.500	2	.667

Hipotesa pengujian :

T hitung < T tabel (0,05) sehingga tidak ada perbedaan yang bermakna antar bets.

Formula B

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Formula B - Formula B	1.51000	1.87904	1.08487	-3.15780	6.17780	1.392	2	.299

Hipotesa pengujian :

T hitung < T tabel (0,05) sehingga tidak ada perbedaan yang bermakna antar bets.

Formula C

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Formula C - Formula C	-3.71333	5.08235	2.93429	-16.33858	8.91191	-1.265	2	.333

Hipotesa pengujian :

T hitung < T tabel (0,05) sehingga tidak ada perbedaan yang bermakna antar bets.

Formula D

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	Formula D - Formula D	2.44667	5.19933	3.00183	-10.46919	15.36252	.815	2	.501

Hipotesa pengujian :

T hitung < T tabel (0,05) sehingga tidak ada perbedaan yang bermakna antar bets.

C. KEKERASAN

Formula A

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	Formula A - Formula A	-1.01620E2	175.88976	101.55000	-538.55439	335.31439	-1.001	2	.422

Hipotesa pengujian :

T hitung < T tabel (0,05) sehingga tidak ada perbedaan yang bermakna antar bets.

Formula B

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	Formula B - Formula B	.12333	.17926	.10349	-.32197	.56863	1.192	2	.356

Hipotesa pengujian :

T hitung < T tabel (0,05) sehingga tidak ada perbedaan yang bermakna antar bets

Formula C

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	Formula C - Formula C	-.39333	.78647	.45407	-2.34703	1.56036	-.866	2	.478

Hipotesa pengujian :

T hitung < T tabel (0,05) sehingga tidak ada perbedaan yang bermakna antar bets

Formula D

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	Formula D - Formula D	-.06000	.24434	.14107	-.66696	.54696	-.425	2	.712

Hipotesa pengujian :

T hitung < T tabel (0,05) sehingga tidak ada perbedaan yang bermakna antar bets

D. TAMPILAN VISUAL

Formula A

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	Formula A - Formula A	.66667	.57735	.33333	-.76755	2.10088	2.000	2	.184

Hipotesa pengujian :

T hitung < T tabel (0,05) sehingga tidak ada perbedaan yang bermakna antar bets.

Formula B

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	Formula B - Formula B	.33333	.57735	.33333	-1.10088	1.76755	1.000	2	.423

Hipotesa pengujian :

T hitung < T tabel (0,05) sehingga tidak ada perbedaan yang bermakna antar beta

Hipotesa pengujian :

Formula C

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	Formula C - Formula C	-.66667	.57735	.33333	-2.10088	.76755	-2.000	2	.184

T hitung < T tabel (0,05) sehingga tidak ada perbedaan yang bermakna antar bets

Formula D

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	Formula D - Formula D	.33333	1.15470	.66667	-2.53510	3.20177	.500	2	.667

Hipotesa pengujian :

T hitung < T tabel (0,05) sehingga tidak ada perbedaan yang bermakna antar bets

LAMPIRAN E

HASIL ANOVA SATU ARAH UJI TABLET SALUT ENTERIK EKSTRAK KELOPAK BUNGA ROSELLA

A. KESERAGAMAN BOBOT

ANOVA

keseragaman bobot

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.028	3	.009	2.718	.179
Within Groups	.014	4	.003		
Total	.042	7			

Tukey HSD

(I) formula	(J) formula	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Formula A	Formula B	.16500	.05884	.149	-.0745	.4045
	Formula C	.07500	.05884	.621	-.1645	.3145
	Fotmula D	.10500	.05884	.395	-.1345	.3445
Formula B	Formula A	-.16500	.05884	.149	-.4045	.0745
	Formula C	-.09000	.05884	.500	-.3295	.1495
	Fotmula D	-.06000	.05884	.749	-.2995	.1795
Formula C	Formula A	-.07500	.05884	.621	-.3145	.1645
	Formula B	.09000	.05884	.500	-.1495	.3295
	Fotmula D	.03000	.05884	.952	-.2095	.2695
Fotmula D	Formula A	-.10500	.05884	.395	-.3445	.1345
	Formula B	.06000	.05884	.749	-.1795	.2995
	Formula C	-.03000	.05884	.952	-.2695	.2095

Karena F hitung = 2,718 < F tabel $_{0,05(3,4)}$ = 6,59; maka H_0 diterima dan tidak ada perbedaan yang bermakna antar formula.

B. TAMPILAN VISUAL

Uji tampilan visual tablet salut enterik

ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	4.119	3	1.373	9.904	.025
Within Groups	.554	4	.139		
Total	4.673	7			

Tukey HSD

(I) formula	(J) formula	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
formula a	formula b	1.17000	.37232	.109	-.3457	2.6857
	formula c	-.66500	.37232	.395	-2.1807	.8507
	formula d	.83500	.37232	.255	-.6807	2.3507
formula b	formula a	-1.17000	.37232	.109	-2.6857	.3457
	formula c	-1.83500*	.37232	.026	-3.3507	-.3193
	formula d	-.33500	.37232	.807	-1.8507	1.1807
formula c	formula a	.66500	.37232	.395	-.8507	2.1807
	formula b	1.83500*	.37232	.026	.3193	3.3507
	formula d	1.50000	.37232	.052	-.0157	3.0157
formula d	formula a	-.83500	.37232	.255	-2.3507	.6807
	formula b	.33500	.37232	.807	-1.1807	1.8507
	formula c	-1.50000	.37232	.052	-3.0157	.0157

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

Karena F hitung = 9,904 >F tabel $_{0,05(3,4)}$ = 6,59; maka H_0 ditolak dan ada perbedaan yang bermakna antar formula.

Tukey HSD

formula	N	Subset for alpha = 0.05	
		1	2
formula b	2	97.1650	
formula d	2	97.5000	97.5000
formula a	2	98.3350	98.3350
formula c	2		99.0000
Sig.		.109	.052

Means for groups in homogeneous subsets are displayed.

C. KEKERASAN

ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.430	3	.477	88.045	.000
Within Groups	.022	4	.005		
Total	1.451	7			

Tukey HSD

(I) formula	(J) formula	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
formula a	formula b	-.42000*	.07357	.016	-.7195	-.1205
	formula c	.71000*	.07357	.002	.4105	1.0095
	formula d	.38500*	.07357	.022	.0855	.6845
formula b	formula a	.42000*	.07357	.016	.1205	.7195
	formula c	1.13000*	.07357	.000	.8305	1.4295
	formula d	.80500*	.07357	.001	.5055	1.1045
formula c	formula a	-.71000*	.07357	.002	-1.0095	-.4105
	formula b	-1.13000*	.07357	.000	-1.4295	-.8305
	formula d	-.32500*	.07357	.038	-.6245	-.0255
formula d	formula a	-.38500*	.07357	.022	-.6845	-.0855
	formula b	-.80500*	.07357	.001	-1.1045	-.5055
	formula c	.32500*	.07357	.038	.0255	.6245

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

Karena F hitung = 88,045 > F tabel $_{0,05(3,7)}$ = 4,35; maka H_0 ditolak dan ada perbedaan yang bermakna antar formula

Tukey HSD

formula	N	Subset for alpha = 0.05			
		1	2	3	4
formula c	2	6.9000			
formula d	2		7.2250		
formula a	2			7.6100	
formula b	2				8.0300
Sig.		1.000	1.000	1.000	1.000

Means for groups in homogeneous subsets are displayed.

D. WAKTU HANCUR

ANOVA

X1

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	85.257	3	28.419	5.927	.059
Within Groups	19.179	4	4.795		
Total	104.436	7			

Tukey HSD

(I) formula	(J) formula	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
formula a	formula b	-4.09500	2.18971	.365	-13.0090	4.8190
	formula c	5.07500	2.18971	.237	-3.8390	13.9890
	formula d	-.42500	2.18971	.997	-9.3390	8.4890
formula b	formula a	4.09500	2.18971	.365	-4.8190	13.0090
	formula c	9.17000*	2.18971	.046	.2560	18.0840
	formula d	3.67000	2.18971	.438	-5.2440	12.5840
formula c	formula a	-5.07500	2.18971	.237	-13.9890	3.8390
	formula b	-9.17000*	2.18971	.046	-18.0840	-.2560
	formula d	-5.50000	2.18971	.197	-14.4140	3.4140
formula d	formula a	.42500	2.18971	.997	-8.4890	9.3390
	formula b	-3.67000	2.18971	.438	-12.5840	5.2440
	formula c	5.50000	2.18971	.197	-3.4140	14.4140

Karena F hitung = 5,927 > F tabel $_{0,05(3,7)}$ = 4,35; maka H_0 ditolak dan ada perbedaan yang bermakna antar formula

Tukey HSD

formula	N	Subset for alpha = 0.05	
		1	2
formula b	2	4.8650	
formula d	2	9.9400	9.9400
formula a	2	10.3650	10.3650
formula c	2		14.0350
Sig.		.197	.365

Means for groups in homogeneous subsets are displayed.

LAMPIRAN F

HASIL ANOVA SATU ARAH UJI WAKTU HANCUR PADA PROGRAM DESIGN EXPERT

Response 1 waktu hancur

ANOVA for selected factorial model

Analysis of variance table [Partial sum of squares - Type III]

Source	Sum of Squares	df	Mean Square	F Value	p-value Prob > F	
Model109.95		3	36.65	204.16	< 0.0001	significant
A-HPMCP		*84.11*	*1*	*84.11*	*468.52*	*< 0.0001*
B-Gliserol		*14.42*	*1*	*14.42*	*80.31*	*0.0009*
AB11.42		*1*	*11.42*	*63.64*	*0.0013*	
Pure Error		0.72	4	0.18		
Cor Total		110.67	7			

The Model F-value of 204.16 implies the model is significant. There is only a 0.01% chance that a "Model F-Value" this large could occur due to noise.

Values of "Prob > F" less than 0.0500 indicate model terms are significant.
In this case A, B, AB are significant model terms.
Values greater than 0.1000 indicate the model terms are not significant.
If there are many insignificant model terms (not counting those required to support hierarchy), model reduction may improve your model.

Std. Dev.	0.42		R-Squared	0.9935
Mean10.65		Adj R-Squared	0.9886	
C.V. %	3.98		Pred R-Squared	0.9740
PRESS	2.87		Adeq Precision	30.607

The "Pred R-Squared" of 0.9740 is in reasonable agreement with the "Adj R-Squared" of 0.9886.

"Adeq Precision" measures the signal to noise ratio. A ratio greater than 4 is desirable. Your ratio of 30.607 indicates an adequate signal. This model can be used to navigate the design space.

Coefficient Factor	Estimate	df	Standard Error	95% CI Low	95% CI High	VIF
Intercept	10.65	1	0.15	10.23	11.06	
A-HPMCP	3.24	1	0.15	2.83	3.66	1.00
B-Gliserol	-1.34	1	0.15	-1.76	-0.93	1.00
AB	1.19	1	0.15	0.78	1.61	1.00

Final Equation in Terms of Coded Factors:

waktu hancur = +10.65 +3.24 * A

-1.34 * B
+1.19 * A * B

Final Equation in Terms of Actual Factors:

waktu hancur =
+10.64500
+3.24250 * HPMCP
-1.34250 * Gliserol
+1.19500 * HPMCP * Gliserol

The Diagnostics Case Statistics Report has been moved to the Diagnostics Node.
In the Diagnostics Node, Select Case Statistics from the View Menu.

Proceed to Diagnostic Plots (the next icon in progression). Be sure to look at the:
1) Normal probability plot of the studentized residuals to check for normality of residuals.
2) Studentized residuals versus predicted values to check for constant error.
3) Externally Studentized Residuals to look for outliers, i.e., influential values.
4) Box-Cox plot for power transformations.

If all the model statistics and diagnostic plots are OK, finish up with the Model Graphs icon.

LAMPIRAN G

HASIL ANOVA SATU ARAH UJI KEKERASAN PADA PROGRAM DESIGN EXPERT

Response 2 kekerasan

ANOVA for selected factorial model

Analysis of variance table [Partial sum of squares - Type III]

Source	Sum of Squares	df	Mean Square	F Value	p-value Prob > F	
Model1.43		3	0.48	88.05	0.0004	significant
A-HPMCP		*0.28*	*1*	*0.28*	*51.27*	*0.0020*
B-Gliserol		*1.15*	*1*	*1.15*	*212.03*	*0.0001*
AB4.512E-003		*1*	*4.512E-003*	*0.83*	*0.4129*	
Pure Error		0.022	4	5.412E-003		
Cor Total		1.45	7			

The Model F-value of 88.05 implies the model is significant. There is only a 0.04% chance that a "Model F-Value" this large could occur due to noise.

Values of "Prob > F" less than 0.0500 indicate model terms are significant.
In this case A, B are significant model terms.
Values greater than 0.1000 indicate the model terms are not significant.
If there are many insignificant model terms (not counting those required to support hierarchy), model reduction may improve your model.

Std. Dev.	0.074		R-Squared	0.9851
Mean7.44		Adj R-Squared	0.9739	
C.V. %	0.99		Pred R-Squared	0.9403
PRESS	0.087		Adeq Precision	21.722

The "Pred R-Squared" of 0.9403 is in reasonable agreement with the "Adj R-Squared" of 0.9739.

"Adeq Precision" measures the signal to noise ratio. A ratio greater than 4 is desirable. Your ratio of 21.722 indicates an adequate signal. This model can be used to navigate the design space.

Coefficient FactorEstimate	df	Standard Error	95% CI Low	95% CI High	VIF
Intercept	7.44	1	0.026	7.37	7.51
A-HPMCP	0.19	1	0.026	0.11	0.26
1.00					
B-Gliserol	-0.38	1	0.026	-0.45	-0.31
1.00					
AB-0.024	1	0.026	-0.096	0.048	1.00

Final Equation in Terms of Coded Factors:

kekerasan =
+7.44
+0.19 * A

-0.38 * B
-0.024 * A * B

Final Equation in Terms of Actual Factors:

kekerasan =
+7.44125
+0.18625 * HPMCP
-0.37875 * Gliserol
-0.023750 * HPMCP * Gliserol

The Diagnostics Case Statistics Report has been moved to the Diagnostics Node.
In the Diagnostics Node, Select Case Statistics from the View Menu.

Proceed to Diagnostic Plots (the next icon in progression). Be sure to look at the:
1) Normal probability plot of the studentized residuals to check for normality of residuals.
2) Studentized residuals versus predicted values to check for constant error.
3) Externally Studentized Residuals to look for outliers, i.e., influential values.
4) Box-Cox plot for power transformations.

If all the model statistics and diagnostic plots are OK, finish up with the Model Graphs icon.
Anova Respon Keseragaman Bobot Program Design Expert

LAMPIRAN H

HASIL ANOVA SATU ARAH UJI KESERAGAMAN BOBOT PADA PROGRAM DESIGN EXPERT

Response 3 keseragaman bobot

ANOVA for selected factorial model

Analysis of variance table [Partial sum of squares - Type III]

Source	Sum of Squares	df	Mean Square	F Value	p-value Prob > F	
Model	0.028	3	9.412E-003	2.72	0.1792	not significant
A-HPMCP	*0.019*	*1*	*0.019*	*5.49*	*0.0791*	
B-Gliserol	*1.125E-004*	*1*	*1.125E-004*	*0.032*	*0.8657*	
AB	*9.113E-003*	*1*	*9.113E-003*	*2.63*	*0.1801*	
Pure Error	0.014	4	3.463E-003			
Cor Total	0.042	7				

The "Model F-value" of 2.72 implies the model is not significant relative to the noise. There is a 17.92 % chance that a "Model F-value" this large could occur due to noise.

Values of "Prob > F" less than 0.0500 indicate model terms are significant.
In this case there are no significant model terms.
Values greater than 0.1000 indicate the model terms are not significant.
If there are many insignificant model terms (not counting those required to support hierarchy), model reduction may improve your model.

Std. Dev.	0.059		R-Squared	0.6709
Mean312.15		Adj R-Squared	0.4241	
C.V. %	0.019		Pred R-Squared	-0.3163
PRESS	0.055		Adeq Precision	3.966

A negative "Pred R-Squared" implies that the overall mean is a better predictor of your response than the current model.

"Adeq Precision" measures the signal to noise ratio. A ratio of 3.97 indicates an inadequate signal and we should not use this model to navigate the design space.

Coefficient FactorEstimate	df	Standard Error	95% CI Low	95% CI High	VIF
Intercept	312.15	1	0.021	312.09	312.21
A-HPMCP	-0.049	1	0.021	-0.11	9.012E-003
1.00					
B-Gliserol	-3.750E-003	1	0.021	-0.062	0.054
1.00					
AB0.034	1	0.021	-0.024	0.092	1.00

Final Equation in Terms of Coded Factors:

keseragaman bobot =
+312.15
-0.049 * A

-3.750E-003 * B
+0.034 * A * B

Final Equation in Terms of Actual Factors:

keseragaman bobot =
+312.14875
-0.048750 * HPMCP
-3.75000E-003 * Gliserol
+0.033750 * HPMCP * Gliserol

The Diagnostics Case Statistics Report has been moved to the Diagnostics Node.
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2) Studentized residuals versus predicted values to check for constant error.
3) Externally Studentized Residuals to look for outliers, i.e., influential values.
4) Box-Cox plot for power transformations.

If all the model statistics and diagnostic plots are OK, finish up with the Model Graphs icon.

LAMPIRAN I

HASIL ANOVA SATU ARAH UJI TAMPILAN VISUAL PADA PROGRAM DESIGN EXPERT

Response 4 visual

ANOVA for selected factorial model

Analysis of variance table [Partial sum of squares - Type III]

Source	Sum of Squares	df	Mean Square	F Value	p-value Prob > F	
Model4.12		3	1.37	9.90	0.0253	significant
A-HPMCP		*3.56*	*1*	*3.56*	*25.71*	*0.0071*
B-Gliserol		*0.50*	*1*	*0.50*	*3.61*	*0.1304*
AB0.054		*1*	*0.054*	*0.39*	*0.5648*	
Pure Error		0.55	4	0.14		
Cor Total		4.67	7			

The Model F-value of 9.90 implies the model is significant. There is only a 2.53% chance that a "Model F-Value" this large could occur due to noise.

Values of "Prob > F" less than 0.0500 indicate model terms are significant.
In this case A are significant model terms.
Values greater than 0.1000 indicate the model terms are not significant.
If there are many insignificant model terms (not counting those required to support hierarchy), model reduction may improve your model.

Std. Dev.	0.37		R-Squared	0.8813
Mean98.00		Adj R-Squared	0.7924	
C.V. %	0.38		Pred R-Squared	0.5254
PRESS	2.22		Adeq Precision	6.970

The "Pred R-Squared" of 0.5254 is not as close to the "Adj R-Squared" of 0.7924 as one might normally expect. This may indicate a large block effect or a possible problem with your model and/or data. Things to consider are model reduction, response transformation, outliers, etc.

"Adeq Precision" measures the signal to noise ratio. A ratio greater than 4 is desirable. Your ratio of 6.970 indicates an adequate signal. This model can be used to navigate the design space.

Coefficient FactorEstimate	df	Standard Error	95% CI Low	95% CI High	VIF
Intercept	98.00	1	0.13	97.63	98.37
A-HPMCP	-0.67	1	0.13	-1.03	-0.30
1.00					
B-Gliserol	0.25	1	0.13	-0.12	0.62
1.00					
AB-0.082	1	0.13	-0.45	0.28	1.00

Final Equation in Terms of Coded Factors:

visual =
+98.00
-0.67 * A

+0.25 * B
-0.082 * A * B

Final Equation in Terms of Actual Factors:

visual =
+98.00000
-0.66750 * HPMCP
+0.25000 * Gliserol
-0.082500 * HPMCP * Gliserol

The Diagnostics Case Statistics Report has been moved to the Diagnostics Node.
In the Diagnostics Node, Select Case Statistics from the View Menu.

Proceed to Diagnostic Plots (the next icon in progression). Be sure to look at the:
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3) Externally Studentized Residuals to look for outliers, i.e., influential values.
4) Box-Cox plot for power transformations.

If all the model statistics and diagnostic plots are OK, finish up with the Model Graphs icon.

LAMPIRAN J

RANGKUMAN HASIL PREDIKSI BERDASARKAN PROGRAM DESIGN EXPERT

Number	HPMCP	gliserol	waktu hancur	kekerasan	keseragaman bobot	tampilan visual
1	-1.00	-1.00	9.94	7.61	312.235	98.335
2	-1.00	1.00	4.865	6.9	312.16	99
3	0.20	-0.80	12.1763	7.7853	312.137	97.6797
4	0.75	0.90	12.6753	7.22403	312.132	97.6687
5	-0.99	0.11	7.14274	7.21699	312.193	98.7002
6	-0.26	0.49	8.98397	7.2093	312.155	98.308
7	0.15	-0.54	11.7618	7.67436	312.141	97.7708
8	-0.38	0.07	9.28464	7.3443	312.166	98.2738
9	-0.65	0.76	6.919	7.04393	312.161	98.666
10	0.59	0.52	12.2399	7.34568	312.128	97.7088
11	0.77	0.50	12.9253	7.38641	312.122	97.5801
12	0.19	-0.92	12.2931	7.83025	312.137	97.6561
13	0.16	0.54	10.5352	7.26524	312.142	98.0222
14	0.19	0.72	10.4553	7.20003	312.141	98.0424
15	-0.74	-0.48	9.33387	7.47912	312.199	98.341
16	0.58	0.86	11.9529	7.20935	312.134	97.7896
17	0.48	-0.58	12.6468	7.75813	312.118	97.5576
18	-0.88	0.46	6.68848	7.11193	312.176	98.7358
19	-0.74	-0.90	10.2447	7.62732	312.21	98.214
20	-0.35	-0.59	10.5492	7.59516	312.175	98.0694
21	0.53	0.81	11.8041	7.22362	312.134	97.8107
22	-0.06	-0.90	11.717	7.76861	312.157	97.812
23	-0.66	-0.49	9.54396	7.49517	312.194	98.292
24	0.07	0.46	10.2716	7.27762	312.145	98.0696
25	-0.63	0.46	7.6206	7.15495	312.168	98.5625
26	-0.73	-0.95	10.3815	7.64795	312.211	98.1914
27	-0.20	-0.64	11.0139	7.64339	312.165	97.9614
28	0.50	-0.43	12.5761	7.70277	312.119	97.5788
29	-0.38	-0.33	10.0027	7.49255	312.173	98.1616
30	0.70	0.83	12.4845	7.24365	312.131	97.6939
31	-0.83	0.05	7.83461	7.26803	312.188	98.5701
32	-0.27	0.28	9.29144	7.28658	312.158	98.2588
33	0.45	0.04	12.0759	7.51039	312.127	97.7072
34	-0.43	-0.55	10.261	7.56294	312.18	98.1325

LAMPIRAN K

CONTOH PERHITUNGAN BAHAN PENYALUT

- Jumlah tablet inti = 900 tablet
- W total tablet inti = 265,7 gram
- W HPMCP (dengan pertambahan bobot 4%) = 4/100 x 265,7 = 10,628 gram
- Vol pelarut campuran dengan konsentrasi HPMCP 9,75% = 100/9,75 x 10,628 = 109,0051 ml
- Jumlah plastisaiser = 0,52/200 x 10,628 = 0,0553 gram
- BJ plastisaiser = 1,26 g/ml
- Volume plastisaiser = 0,0553/1,26 = 0,0439 ml = 43,9 µl
- Jumlah talk (4%) = 4/100 x 10,628 = 0,4251 gram
- % pelarut campuran = 109,0051 – (10,628 +0,0553 + 0,4251) = 97,8967 ml

Maka untuk 900 tablet dibutuhkan HPMCP sebanyak 10,628 gram, Gliserol 43,9 µl, talk 0,4251 gram dan pelarut campuran 97,8967 ml.

LAMPIRAN L

CONTOH PERHITUNGAN KONVERSI DOSIS EKSTRAK KELOPAK BUNGA ROSELLA

Perbandingan ekstrak jadi natura : pengisi (7 : 1)

Dosis acuan 250 mg ekstrak terstandarisasi (Hudson, 2011).

Berat tablet 300 mg

Perhitungan konversi :

8/7 x 150 = 171,42 mg

Jadi berat ekstrak dari PT. Natura Laboratoria yang harus ditimbang untuk jumlah per tablet yaitu

= 171,42 mg

LAMPIRAN M

SERTIFIKAT ANALISIS EKSTRAK KERING ROSELLA dari PT. NATURA

NATURA
FOOD & NUTRACEUTICAL COMPANY

QA Dept. **Certificate of Analysis**

Ref. No. 0400/CoA/QA/III/12

Product Name : **Rosella PE**
Product Code : **5055C**
Batch/Lot No. : **P5055C620401**

Manufacturing date : February 07th 2012
Best used before : February 07th 2013
Date of issued : March 08th 2012

Test Descriptions	Results
Sensory Evaluation	
- Color (Visual)	Purplish Red
- Appearance (Visual)	Homogeny, fine powder
- Odor and Taste (Smell)	Characteristic odor and taste of Rosella
Physicochemical	
- Solubility (1.0 % solution)	Soluble in water
- Particle Size (Sieve thru mesh #100)	96,50 %
- Lost On Drying (IR/105 °C)	1,10 %
- Tapped Density (50 ml / 500-750 X)	0,790 g/ml
- pH at 25 °C (1.0 % solution)	2,73
Toxicological	
- Aerobic Plate Count (Ph)	$2,27.10^{2}$ cfu/g
- Yeast and Mold (Ph)	$2,1.10^{1}$ cfu/g
- E. Coli (Ph)	Negative
- Salmonella sp. (Ph)	Negative

Dion Kristianto – QA Dept. : _____

NATURA LABORATORIA PRIMA pt.

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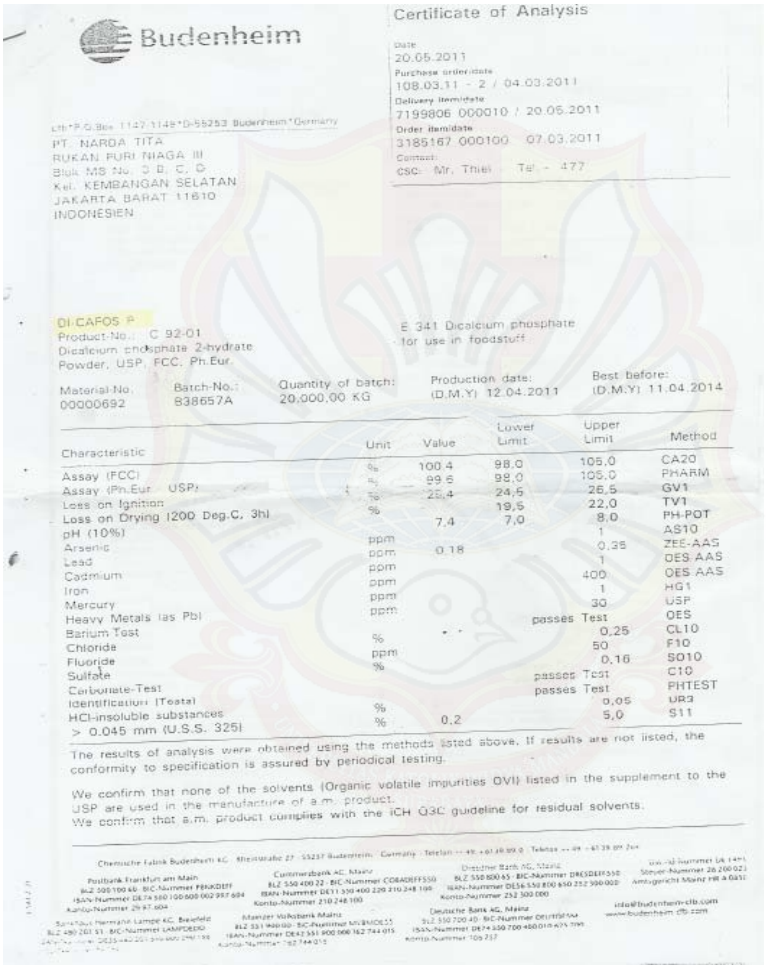
Factory & Extraction Center : Jl. Stadion No. 26, Pandaan, Pasuruan 67156, East Java - Indonesia. Ph. +62-343-633432, 633433 Fax. +62-343-633435
e-mail : info@natura-lab.com
Website : http://www.natura-lab.com

LAMPIRAN N

SERTIFIKAT ANALISIS KALSIUM FOSFAT DIBASIK ANHIDRAT



Budenheim

Certificate of Analysis

Date
20.05.2011
Purchase order/date
108.03.11 - 2 / 04.03.2011
Delivery item/date
7199806 000010 / 20.05.2011
Order item/date
3185167 000100 07.03.2011
Contact:
CSC: Mr. Thiel Tel. - 477

Ltm*P.O.Box 1147*D-55253 Budenheim*Germany

PT. NARDA TITA
RUKAN PURI NIAGA III
Blok MS No. D, B, C, D
Kel. KEMBANGAN SELATAN
JAKARTA BARAT 11610
INDONESIEN

DI-CAFOS P
Product-No.: C 92-01
Dicalcium phosphate 2-hydrate
Powder, USP, FCC, Ph.Eur.

E 341 Dicalcium phosphate
for use in foodstuff

Material-No.	Batch-No.:	Quantity of batch:	Production date: (D.M.Y)	Best before: (D.M.Y)
00000692	838657A	20,000.00 KG	12.04.2011	11.04.2014

Characteristic	Unit	Value	Lower Limit	Upper Limit	Method
Assay (FCC)	%	100.4	98.0	105.0	CA20
Assay (Ph.Eur. USP)	%	99.6	98.0	105.0	PHARM
Loss on Ignition	%	25.4	24.5	26.5	GV1
Loss on Drying (200 Deg.C, 3h)	%		19.5	22.0	TV1
pH (10%)		7.4	7.0	8.0	PH-POT
Arsenic	ppm			1	AS10
Lead	ppm	0.18		0.35	ZEE-AAS
Cadmium	ppm			1	OES AAS
Iron	ppm			400	OES AAS
Mercury	ppm			1	HG1
Heavy Metals (as Pb)	ppm			30	USP
Barium Test			passes Test		OES
Chloride	%			0.25	CL10
Fluoride	ppm			50	F10
Sulfate	%			0.16	SO10
Carbonate-Test			passes Test		C10
Identification (Testa)			passes Test		PHTEST
HCl-insoluble substances	%			0.05	UR3
> 0.045 mm (U.S.S. 325)	%	0.2		5.0	S11

The results of analysis were obtained using the methods listed above. If results are not listed, the conformity to specification is assured by periodical testing.

We confirm that none of the solvents (Organic volatile impurities OVI) listed in the supplement to the USP are used in the manufacture of a.m. product.
We confirm that a.m. product complies with the ICH Q3C guideline for residual solvents.

Chemische Fabrik Budenheim KG · Rheinstraße 27 · 55257 Budenheim · Germany · Telefon +49 · 6139 89-0 · Telefax +49 · 6139 89-210

Postbank Frankfurt am Main
BLZ 500 100 60 · BIC-Nummer PBNKDEFF
IBAN-Nummer DE74 500 100 60 0002 997 604
Konto-Nummer 29 97 604

Commerzbank AG, Mainz
BLZ 550 400 22 · BIC-Nummer COBADEFF550
IBAN-Nummer DE11 550 400 220 210 248 100
Konto-Nummer 210 248 100

Dresdner Bank AG, Mainz
BLZ 550 800 65 · BIC-Nummer DRESDEFF550
IBAN-Nummer DE56 550 800 650 252 300 000
Konto-Nummer 252 300 000

Ust.-Id.-Nummer DE 149[illegible]
Steuer-Nummer 26 260 023
Amtsgericht Mainz HR A 0[illegible]

Sparkasse Herrigh. Lampe KG, Bielefeld
BLZ 480 261 51 · BIC-Nummer LAMPDE80
IBAN-Nummer DE23 480 261 51 [illegible]
Konto-Nummer [illegible]

Mainzer Volksbank Mainz
BLZ 551 900 00 · BIC-Nummer MVBMDE55
IBAN-Nummer DE42 551 900 000 162 744 015
Konto-Nummer 162 744 015

Deutsche Bank AG, Mainz
BLZ 550 700 40 · BIC-Nummer DEUTDEMM
IBAN-Nummer DE74 550 700 400 0018 475 700
Konto-Nummer 109 737

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LAMPIRAN O

TABEL UJI F

Nilai kritis distribusi *F*

$\alpha = 0{,}05$

df_2 \ df_1	1	2	3	4	5	6	7	8	10	12	24	∞
1	161,4	199,5	215,7	224,6	230,2	234,0	236,8	238,9	241,9	243,9	249,0	254,3
2	18,5	19,0	19,2	19,2	19,3	19,3	19,4	19,4	19,4	19,4	19,5	19,5
3	10,13	9,55	9,28	9,12	9,01	8,94	8,89	8,85	8,79	8,74	8,64	8,53
4	7,71	6,94	6,59	6,39	6,26	6,16	6,09	6,04	5,96	5,91	5,77	5,63
5	6,61	5,79	5,41	5,19	5,05	4,95	4,88	4,82	4,74	4,68	4,53	4,36
6	5,99	5,14	4,76	4,53	4,39	4,28	4,21	4,15	4,06	4,00	3,84	3,67
7	5,59	4,74	4,35	4,12	3,97	3,87	3,79	3,73	3,64	3,57	3,41	3,23
8	5,32	4,46	4,07	3,84	3,69	3,58	3,50	3,44	3,35	3,28	3,12	2,93
9	5,12	4,26	3,86	3,63	3,48	3,37	3,29	3,23	3,14	3,07	2,90	2,71
10	4,96	4,10	3,71	3,48	3,33	3,22	3,14	3,07	2,98	2,91	2,74	2,54
11	4,84	3,98	3,59	3,36	3,20	3,09	3,01	2,95	2,85	2,79	2,61	2,40
12	4,75	3,89	3,49	3,26	3,11	3,00	2,91	2,85	2,75	2,69	2,51	2,30
13	4,67	3,81	3,41	3,18	3,03	2,92	2,83	2,77	2,67	2,60	2,42	2,21
14	4,60	3,74	3,34	3,11	2,96	2,85	2,76	2,70	2,60	2,53	2,35	2,13
16	4,49	3,63	3,24	3,01	2,85	2,74	2,66	2,59	2,49	2,42	2,24	2,01
18	4,41	3,55	3,16	2,93	2,77	2,66	2,58	2,51	2,41	2,34	2,15	1,92
20	4,35	3,49	3,10	2,87	2,71	2,60	2,51	2,45	2,35	2,28	2,08	1,84
22	4,30	3,44	3,05	2,82	2,66	2,55	2,46	2,40	2,30	2,23	2,03	1,78
24	4,26	3,40	3,01	2,78	2,62	2,51	2,42	2,36	2,25	2,18	1,98	1,73
26	4,23	3,37	2,98	2,74	2,59	2,47	2,39	2,32	2,22	2,15	1,95	1,69
28	4,20	3,34	2,95	2,71	2,56	2,45	2,36	2,29	2,19	2,12	1,91	1,65
30	4,17	3,32	2,92	2,69	2,53	2,42	2,33	2,27	2,16	2,09	1,89	1,62
40	4,08	3,23	2,84	2,61	2,45	2,34	2,25	2,18	2,08	2,00	1,79	1,51
60	4,00	3,15	2,76	2,53	2,37	2,25	2,17	2,10	1,99	1,92	1,70	1,39
120	3,92	3,07	2,68	2,45	2,29	2,18	2,09	2,02	1,91	1,83	1,61	1,25
∞	3,84	3,00	2,60	2,37	2,21	2,10	2,01	1,94	1,83	1,75	1,52	1,00

α melambangkan aras nyata, df_1 melambangkan derajat kebebasan pada pembilang dan df_2 pada penyebut.

Dimodifikasi dari Murdoch J, Barnes J A, *Statistical Tables for Students of Science, Engineering, Psychology, Business, Management and Finance*, 4th edition, Basingstoke: Macmillan, 1998.

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LAMPIRAN P

TABEL UJI T

Nilai kritis distribusi *t*

	Uji berarah dua			*Uji berarah satu*		
df	$\alpha = 0{,}10$	$\alpha = 0{,}05$	$\alpha = 0{,}01$	$\alpha = 0{,}10$	$\alpha = 0{,}05$	$\alpha = 0{,}01$
1	6,314	12,706	63,657	3,078	6,314	31,821
2	2,920	4,303	9,925	1,886	2,920	6,965
3	2,353	3,182	5,841	1,638	2,353	4,541
4	2,132	2,776	4,604	1,533	2,132	3,747
5	2,015	2,571	4,032	1,476	2,015	3,365
6	1,943	2,447	3,707	1,440	1,943	3,143
7	1,895	2,365	3,499	1,415	1,895	2,998
8	1,860	2,306	3,355	1,397	1,860	2,896
9	1,833	2,262	3,250	1,383	1,833	2,821
10	1,812	2,228	3,169	1,372	1,812	2,764
11	1,796	2,201	3,106	1,363	1,796	2,718
12	1,782	2,179	3,055	1,356	1,782	2,681
13	1,771	2,160	3,012	1,350	1,771	2,650
14	1,761	2,145	2,977	1,345	1,761	2,624
15	1,753	2,131	2,947	1,341	1,753	2,602
16	1,746	2,120	2,921	1,337	1,746	2,583
17	1,740	2,110	2,898	1,333	1,740	2,567
18	1,734	2,101	2,878	1,330	1,734	2,552
19	1,729	2,093	2,861	1,328	1,729	2,539
20	1,725	2,086	2,845	1,325	1,725	2,528
21	1,721	2,080	2,831	1,323	1,721	2,518
22	1,717	2,074	2,819	1,321	1,717	2,508
23	1,714	2,069	2,807	1,319	1,714	2,500
24	1,711	2,064	2,797	1,318	1,711	2,492
25	1,708	2,060	2,787	1,316	1,708	2,485
26	1,706	2,056	2,779	1,315	1,706	2,479
27	1,703	2,052	2,771	1,314	1,703	2,473
28	1,701	2,048	2,763	1,313	1,701	2,467
29	1,699	2,045	2,756	1,311	1,699	2,462
30	1,697	2,042	2,750	1,310	1,697	2,457
40	1,684	2,021	2,704	1,303	1,684	2,423
60	1,671	2,000	2,660	1,296	1,671	2,390
120	1,658	1,980	2,617	1,289	1,658	2,358
∞	1,645	1,960	2,576	1,282	1,645	2,326

α melambangkan aras nyata, df menyatakan derajat kebebasan.

Diambil dari Murdoch J, Barnes J A, *Statistical Tables for Students of Science, Engineering, Psychology, Business, Management and Finance*, 4th edition, Basingstoke: Macmillan, 1998.

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