

LAMPIRAN A
HASIL UJI KERAGAMAN BOBOT TABLET LIKUISOLID
IBUPROFEN

Hasil Uji Keragaman Bobot Tablet Formulasi A

No	Replikasi I		Replikasi II		Replikasi III	
	Bobot Tablet (mg)	Y (%)	Bobot Tablet (mg)	Y (%)	Bobot Tablet (mg)	Y (%)
1	764,6	99,25	756,8	99,96	758,9	101,12
2	763,1	99,06	775,3	102,41	774,2	103,16
3	763,0	99,05	754,9	99,71	756,2	100,76
4	763,8	99,15	757,9	100,11	756,7	100,83
5	756,8	98,24	760	100,39	755,8	100,71
6	770,2	99,98	764,2	100,94	756,3	100,77
7	768,3	99,73	759,9	100,37	770,3	102,64
8	773,5	100,41	755,8	99,83	754,8	100,57
9	767,8	99,67	763,2	100,81	749,9	99,92
10	764,7	99,27	762,5	100,72	745,6	99,35
Rata-rata	765,58	99,38	761,05	100,52	757,87	100,98
PK (%)	99,38		100,52		100,98	
SD	0,60		0,78		1,14	
KV	0,60		0,78		1,13	

Keterangan: PK = Penetapan Kadar
SD = Standart Deviasi
KV = Koefisien Variasi

Hasil Uji Keragaman Bobot Formulasi B

No	Replikasi I		Replikasi II		Replikasi III	
	Bobot Tablet (mg)	Y (%)	Bobot Tablet (mg)	Y (%)	Bobot Tablet (mg)	Y (%)
1	798,6	99,33	811,7	99,38	798,7	98,16
2	791,6	98,46	798,7	97,79	788,9	96,95
3	799,1	99,39	799,8	97,93	812,3	99,83
4	812,9	101,11	830	101,63	821,4	100,95
5	798,8	99,35	798,6	97,78	820,5	100,83
6	819,2	101,89	822,1	100,66	813,7	100,00
7	807,6	100,45	813,4	99,59	817	100,40
8	821,2	102,14	831,2	101,77	799,2	98,22
9	800,9	99,61	808,9	99,04	829,1	101,89
10	819,1	101,88	805,5	98,63	820	100,77
Rata-rata	806,90	100,36	811,99	99,42	812,08	99,80
PK (%)	100,36		99,42		99,80	
SD	1,32		1,50		1,54	
KV	1,31		1,51		1,55	

Hasil Uji Keragaman Bobot Formula C

No	Replikasi I		Replikasi II		Replikasi III	
	Bobot Tablet (mg)	Y (%)	Bobot Tablet (mg)	Y (%)	Bobot Tablet (mg)	Y (%)
1	812,1	99,59	809,5	100,58	799,2	99,25
2	819	100,43	817,6	101,58	793	98,48
3	807,8	99,06	800,2	99,42	789,9	98,10
4	813,4	99,74	809,3	100,55	803,1	99,73
5	799,9	98,09	798,3	99,19	816,7	101,42
6	798,2	97,88	812,2	100,91	813,5	101,03
7	802,2	98,37	811,1	100,78	809,1	100,48
8	811,3	99,49	809	100,52	799,4	99,28
9	799,1	97,99	798,2	99,17	811,2	100,74
10	817,6	100,26	820,1	101,90	805,2	100,00
Rata-rata	808,06	99,09	808,55	100,46	804,03	99,85
PK (%)	99,09		100,46		99,85	
SD	0,95		0,94		1,09	
KV	0,96		0,94		1,09	

Hasil Uji Keragaman Bobot Formula D

No	Replikasi I		Replikasi II		Replikasi III	
	Bobot Tablet (mg)	Y (%)	Bobot Tablet (mg)	Y (%)	Bobot Tablet (mg)	Y (%)
1	801,2	99,99	798,6	98,27	811,2	100,60
2	804,1	100,35	789,9	97,20	803,1	99,59
3	800,8	99,94	799,3	98,35	815,2	101,09
4	810	101,09	803,6	98,88	800,3	99,24
5	809,6	101,04	800,9	98,55	806,2	99,98
6	799,7	99,80	807,6	99,37	798,7	99,05
7	810,3	101,12	800,4	98,49	799,2	99,11
8	798,9	99,70	815,2	100,31	789,6	97,92
9	796,2	99,37	812,7	100,00	801,3	99,37
10	802,9	100,20	809,2	99,57	809,3	100,36
Rata-rata	803,37	100,26	803,74	98,90	803,41	99,63
PK (%)	100,26		98,90		99,63	
SD	0,63		0,93		0,91	
KV	0,63		0,94		0,92	

LAMPIRAN B

HASIL UJI KESERAGAMAN KANDUNGAN TABLET

LIKUISOLID IBUPROFEN

Hasil uji Keseragaman Kandungan Tablet Formula A Replikasi I

Abs	W sampel (mg)	C sampel (µg/ml)	C teoritis (µg/ml)	Kadar (%)
0,534	764,6	287,90	286,73	100,41
0,524	763,1	282,45	286,16	98,70
0,528	763	284,63	286,13	99,48
0,531	763,8	286,26	286,43	99,94
0,52	756,8	280,27	283,80	98,75
0,533	770,2	287,36	288,83	99,49
0,541	768,3	291,72	288,11	101,25
0,528	773,5	284,63	290,06	98,13
0,527	767,8	284,08	287,93	98,67
0,526	764,7	283,54	286,76	98,88
Rata-rata				99,37
SD				0,95
KV				0,95

Hasil Uji Keseragaman Kandungan Tablet Formula A Replikasi II

Abs	W sampel (mg)	C sampel (µg/ml)	C teoritis (µg/ml)	Kadar (%)
0,522	756,8	281,36	283,80	99,14
0,541	775,3	291,72	290,74	100,34
0,519	754,9	279,72	283,09	98,81
0,532	757,9	286,81	284,21	100,91
0,53	760	285,72	285,00	100,25
0,526	764,2	283,54	286,58	98,94
0,527	759,9	284,08	284,96	99,69
0,521	755,8	280,81	283,43	99,08
0,531	763,2	286,26	286,20	100,02
0,533	762,5	287,36	285,94	100,50
Rata-rata				99,77
SD				0,74
KV				0,74

Hasil Uji Keseragaman Kandungan Tablet Formula A Replikasi III

Abs	W sampel (mg)	C sampel (µg/ml)	C teoritis (µg/ml)	Kadar (%)
0,522	758,9	281,36	284,59	98,86
0,536	774,2	288,99	290,33	99,54
0,523	756,2	281,90	283,58	99,41
0,534	756,7	287,90	283,76	101,46
0,522	755,8	281,36	283,43	99,27
0,531	756,3	286,26	283,61	100,94
0,526	770,3	283,54	288,86	98,16
0,525	754,8	282,99	283,05	99,98
0,52	749,9	280,27	281,21	99,66
0,523	745,6	281,90	279,60	100,82
Rata-rata				99,81
SD				1,01
KV				1,01

Hasil Uji Keseragaman Kandungan Tablet Formula B Replikasi I

Abs	W sampel (mg)	C sampel (µg/ml)	C teoritis (µg/ml)	Kadar (%)
0,552	798,6	297,72	299,48	99,41
0,55	791,6	296,63	296,85	99,92
0,552	799,1	297,72	299,66	99,35
0,554	812,9	298,81	304,84	98,02
0,550	798,8	296,63	299,55	99,02
0,567	819,2	305,90	307,20	99,58
0,560	807,6	302,08	302,85	99,75
0,566	821,2	305,35	307,95	99,16
0,551	800,9	297,17	300,34	98,95
0,562	819,1	303,17	307,16	98,70
Rata-rata				99,19
SD				0,55
KV				0,56

Hasil Uji Keseragaman Kandungan Tablet Formula B Replikasi II

Abs	W sampel (mg)	C sampel ($\mu\text{g/ml}$)	C teoritis ($\mu\text{g/ml}$)	Kadar (%)
0,562	811,7	303,17	304,39	99,60
0,552	798,7	297,72	299,51	99,40
0,551	799,8	297,17	299,93	99,08
0,565	830	304,81	311,25	97,93
0,556	798,6	299,90	299,48	100,14
0,568	822,1	306,44	308,29	99,40
0,566	813,4	305,35	305,03	100,11
0,580	831,2	312,99	311,70	100,41
0,559	808,9	301,54	303,34	99,41
0,561	805,5	302,63	302,06	100,19
Rata-rata				99,57
SD				0,72
KV				0,73

Hasil Uji Keragaman Kandungan Tablet Formula B Replikasi III

Abs	W sampel (mg)	C sampel ($\mu\text{g/ml}$)	C teoritis ($\mu\text{g/ml}$)	Kadar (%)
0,550	798,7	296,63	299,51	99,04
0,551	788,9	297,17	295,84	100,45
0,560	812,3	302,08	304,61	99,17
0,566	821,4	305,35	308,03	99,13
0,570	820,5	307,53	307,69	99,95
0,571	813,7	308,08	305,14	100,96
0,569	817	306,99	306,38	100,20
0,554	799,2	298,81	299,70	99,70
0,573	829,1	309,17	310,91	99,44
0,562	820	303,17	307,50	98,59
Rata-rata				99,66
SD				0,73
KV				0,73

Hasil Uji Keseragaman Kandungan Tablet Formula C Replikasi I

Abs	W sampel (mg)	C sampel ($\mu\text{g/ml}$)	C teoritis ($\mu\text{g/ml}$)	Kadar (%)
0,568	812,1	306,44	304,54	100,63
0,570	819	307,53	307,13	100,13
0,566	807,8	305,35	302,93	100,80
0,560	813,4	302,08	305,03	99,03
0,561	799,9	302,63	299,96	100,89
0,559	798,2	301,54	299,33	100,74
0,555	802,2	299,35	300,83	99,51
0,554	811,3	298,81	304,24	98,22
0,553	799,1	298,26	299,66	99,53
0,566	817,6	305,35	306,60	99,59
Rata-rata				99,91
SD				0,88
KV				0,89

Hasil Uji Keseragaman Kandungan Tablet Formula C Replikasi II

Abs	W sampel (mg)	C sampel ($\mu\text{g/ml}$)	C teoritis ($\mu\text{g/ml}$)	Kadar (%)
0,566	809,5	305,35	303,56	100,59
0,572	817,6	308,63	306,60	100,66
0,551	800,2	297,17	300,08	99,03
0,552	809,3	297,72	303,49	98,10
0,559	798,3	301,54	299,36	100,73
0,566	812,2	305,35	304,58	100,26
0,564	811,1	304,26	304,16	100,03
0,560	809	302,08	303,38	99,57
0,554	798,2	298,81	299,33	99,83
0,570	820,1	307,53	307,54	100,00
Rata-rata				99,88
SD				0,82
KV				0,82

Hasil Uji Keseragaman Kandungan Tablet Formula C Replikasi III

Abs	W sampel (mg)	C sampel (µg/ml)	C teoritis (µg/ml)	Kadar (%)
0,552	799,2	297,72	299,70	99,34
0,556	793	299,90	297,38	100,85
0,552	789,9	297,72	296,21	100,51
0,559	803,1	301,54	301,16	100,12
0,569	816,7	306,99	306,26	100,24
0,571	813,5	308,08	305,06	100,99
0,559	809,1	301,54	303,41	99,38
0,551	799,4	297,17	299,78	99,13
0,566	811,2	305,35	304,20	100,38
0,552	805,2	297,72	301,95	98,60
Rata-rata				99,95
SD				0,80
KV				0,80

Hasil Uji Keseragaman Kandungan Tablet Formula D Replikasi I

Abs	W sampel (mg)	C sampel (µg/ml)	C teoritis (µg/ml)	Kadar (%)
0,549	801,2	296,08	300,45	98,55
0,551	804,1	297,17	301,54	98,55
0,551	800,8	297,17	300,30	98,96
0,562	810	303,17	303,75	99,81
0,568	809,6	306,44	303,60	100,94
0,548	799,7	295,54	299,89	98,55
0,567	810,3	305,90	303,86	100,67
0,550	798,9	296,63	299,59	99,01
0,552	796,2	297,72	298,58	99,71
0,556	802,9	299,90	301,09	99,61
Rata-rata				99,44
SD				0,87
KV				0,87

Hasil Uji Keseragaman Kandungan Tablet Formula D Replikasi II

Abs	W sampel (mg)	C sampel ($\mu\text{g/ml}$)	C teoritis ($\mu\text{g/ml}$)	Kadar (%)
0,552	798,6	297,72	299,48	99,41
0,556	789,9	299,90	296,21	101,24
0,550	799,3	296,63	299,74	98,96
0,561	803,6	302,63	301,35	100,42
0,559	800,9	301,54	300,34	100,40
0,558	807,6	300,99	302,85	99,39
0,560	800,4	302,08	300,15	100,64
0,562	815,2	303,17	305,70	99,17
0,559	812,7	301,54	304,76	98,94
0,563	809,2	303,72	303,45	100,09
Rata-rata				99,87
SD				0,80
KV				0,80

Hasil Uji Keseragaman Kandungan Tablet Formula D Replikasi III

Abs	W sampel (mg)	C sampel ($\mu\text{g/ml}$)	C teoritis ($\mu\text{g/ml}$)	Kadar (%)
0,552	811,2	297,72	304,20	97,87
0,556	803,1	299,90	301,16	99,58
0,550	815,2	296,63	305,70	97,03
0,561	800,3	302,63	300,11	100,84
0,559	806,2	301,54	302,33	99,74
0,558	798,7	300,99	299,51	100,49
0,560	799,2	302,08	299,70	100,79
0,562	789,6	303,17	296,10	102,39
0,559	801,3	301,54	300,49	100,35
0,563	809,3	303,72	303,49	100,08
Rata-rata				99,92
SD				1,52
KV				1,53

LAMPIRAN C
HASIL IBUPROFEN TERLARUT DALAM TWEEN 80 DAN AIR
SELAMA 24 JAM

Dalam Tween 80

W sampel (gram)	Abs.	Cs (µg/ml)	Cs x FP (µg/ml)	Rata-rata (mg/ml)
10,4973	0,452	243,18	243179,63	247,00
11,0759	0,444	238,82	238816,55	
11,5237	0,481	259,00	258995,77	

Dalam air

W sampel (gram)	Abs.	C s (µg/ml)	Cs x FP (µg/ml)	Rata-rata (mg/ml)
9,8812	0,072	35,93	179,67	0,17
9,2858	0,063	31,03	155,13	
9,7473	0,067	33,21	166,03	

LAMPIRAN D
HASIL PENETAPAN KADAR TABLET LIKUISOLID IBUPROFEN

FORMULA A

Replikasi	Massa (mg)	Abs	C sampel (ppm)	C teoritis (ppm)	% Kadar	Rata-rata	SD	KV
1	800,3	0,553	298,26	300,11	99,38			
2	799,9	0,559	301,54	299,96	100,52	100,30	0,82	0,82
3	800,6	0,562	303,17	300,23	100,98			

FORMULA B

Replikasi	Massa (mg)	Abs	C sampel (ppm)	C teoritis (ppm)	% Kadar	Rata-rata	SD	KV
1	799,7	0,558	300,99	299,89	100,37			
2	799,9	0,553	298,26	299,96	99,43	99,87	0,47	0,47
3	799,8	0,555	299,35	299,93	99,81			

FORMULA C

Replikasi	Massa (mg)	Abs	C sampel (ppm)	C teoritis (ppm)	% Kadar	Rata-rata	SD	KV
1	799,6	0,551	297,17	299,85	99,11			
2	800,3	0,559	301,54	300,11	100,47	99,81	0,68	0,69
3	799,4	0,555	299,35	299,78	99,86			

FORMULA D

Replikasi	Massa (mg)	Abs	C sampel (ppm)	C teoritis (ppm)	% Kadar	Rata- rata	SD	KV
1	800,5	0,558	300,99	300,19	100,27			
2	799,7	0,55	296,63	299,89	98,91	99,61	0,68	0,68
3	799,7	0,554	298,81	299,89	99,64			

LAMPIRAN E
HASIL UJI DISOLUSI TABLET LIKUISOLID IBUPROFEN

FORMULA A

Replikasi	t (menit)	A	C (µg/ml)	Wt (mg)	%obat terlepas	AUC (µg menit / ml)
I	10	0,224	118,83	106,9	53,31	534,74
	20	0,249	132,47	119,2	59,43	1130,84
	30	0,275	146,65	132,0	65,79	1256,01
	45	0,33	176,64	159,0	79,25	2182,20
	60	0,347	185,91	167,3	83,41	2447,26
						7551,06
II	10	0,225	119,38	107,4	53,56	537,20
	20	0,251	133,56	120,2	59,92	1138,21
	30	0,278	148,28	133,5	66,53	1268,28
	45	0,329	176,10	158,5	79,01	2189,57
	60	0,349	187,01	168,3	83,90	2450,94
						7584,19
III	10	0,223	118,29	106,5	53,07	532,29
	20	0,247	131,38	118,2	58,94	1123,48
	30	0,279	148,83	133,9	66,77	1260,92
	45	0,325	173,92	156,5	78,03	2178,52
	60	0,343	183,73	165,4	82,43	2414,13
						7509,34

FORMULA B

Replikasi	t (menit)	A	C (µg/ml)	Wt (mg)	%obat terlepas	AUC (µg menit / ml)
I	10	0,281	149,92	134,9	67,55	674,6
	20	0,32	171,19	154,1	77,14	1445,0
	30	0,346	185,37	166,8	83,52	1604,5
	45	0,361	193,55	174,2	87,21	2557,7
	60	0,377	202,28	182,0	91,14	2671,8
						8953,7
II	10	0,282	150,46	135,4	67,80	677,1
	20	0,319	170,64	153,6	76,89	1445,0
	30	0,341	182,64	164,4	82,30	1589,8
	45	0,364	195,19	175,7	87,95	2550,3
	60	0,378	202,82	182,5	91,39	2686,5
						8948,7
III	10	0,285	152,10	136,9	68,53	684,5
	20	0,322	172,28	155,1	77,63	1459,7
	30	0,349	187,01	168,3	84,26	1616,8
	45	0,363	194,64	175,2	87,70	2576,1
	60	0,374	200,64	180,6	90,41	2668,1
						9005,2

FORMULA C

Replikasi	t (menit)	A	C (µg/ml)	Wt (mg)	%obat terlepas	AUC (µg menit / ml)
I	10	0,288	153,74	138,4	68,97	1481,8
	20	0,328	175,55	158,0	78,76	1656,0
	30	0,359	192,46	173,2	86,35	1781,2
	45	0,379	203,37	183,0	91,24	2774,9
	60	0,387	207,73	187,0	93,20	1402,2
						9096,1
II	10	0,286	152,65	137,4	68,49	1481,8
	20	0,33	176,64	159,0	79,25	1658,5
	30	0,358	191,91	172,7	86,10	1776,3
	45	0,378	202,82	182,5	91,00	2763,9
	60	0,385	206,64	186,0	92,71	1394,8
						9075,3
III	10	0,285	152,10	136,9	68,24	1476,9
	20	0,329	176,10	158,5	79,01	1638,9
	30	0,351	188,10	169,3	84,39	1764,0
	45	0,38	203,91	183,5	91,49	2774,9
	60	0,386	207,18	186,5	92,95	1398,5
						9053,2

FORMULA D

Replikasi	t (menit)	A	C (µg/ml)	Wt (mg)	%obat terlepas	AUC (µg menit / ml)
I	10	0,293	156,46	140,8	70,20	1521,1
	20	0,339	181,55	163,4	81,45	1695,3
	30	0,364	195,19	175,7	87,57	1815,6
	45	0,388	208,28	187,4	93,44	2826,4
	60	0,392	210,46	189,4	94,42	1420,6
						9279,0
II	10	0,295	157,55	141,8	70,69	1528,4
	20	0,34	182,10	163,9	81,70	1707,6
	30	0,368	197,37	177,6	88,55	1822,9
	45	0,387	207,73	187,0	93,20	2819,1
	60	0,391	209,91	188,9	94,18	1416,9
						9294,9
III	10	0,297	158,65	142,8	71,18	1528,4
	20	0,338	181,01	162,9	81,21	1697,8
	30	0,366	196,28	176,6	88,06	1822,9
	45	0,389	208,82	187,9	93,69	2837,5
	60	0,394	211,55	190,4	94,91	1427,9
						9314,6

LAMPIRAN F

CONTOH PERHITUNGAN

Contoh perhitungan indeks kompresibilitas dan *Hausner ratio*:

Formula A :

Berat gelas = 111,29 g (W_1)

Berat gelas + granul = 148,3 g (W_2)

V_1 = 100 ml

V_2 = 84 ml

$$Bj \text{ nyata} = \frac{(W_2 - W_1)}{V_1} = \frac{(148,3 - 111,29)}{100} = 0,3701$$

$$Bj \text{ mampat} = \frac{(W_2 - W_1)}{V_2} = \frac{(148,3 - 111,29)}{84} = 0,4460$$

$$\% \text{ kompresibilitas} = \left(1 - \frac{Bj \text{ nyata}}{Bj \text{ mampat}} \right) \times 100\% = 16\%$$

Formula A:

$$HR = \frac{Bj \text{ mampat}}{Bj \text{ nyata}} = 1,19$$

Contoh perhitungan akurasi & presisi:

%	Bahan aktif (mg)	Matriks (mg)	Dapar fosfat 0,2M pH7,2 Ad	Pipet	Dapar fosfat 0,2M pH7,2 Ad	Konsentrasi (ppm)
100	200	600	100	1,5	10	300

Absorbansi = 0,558 $\rightarrow y = 0,0018x + 0,0061$

Konsentrasi sebenarnya = 300,99 ppm

Konsentrasi teoritis = 300,45 ppm

% perolehan kembali = (kons. sebenarnya / kons. teoritis) x 100%

$$= (300,99 / 300,45) \times 100\%$$

$$= 100,18\%$$

Untuk menghitung % KV = $\frac{SD}{\bar{X}} \times 100\%$

$$= \frac{1,01}{99,83} \times 100\%$$

$$= 1,01 \%$$

Contoh perhitungan % obat terlepas:

$$\% \text{ obat terlepas} = \frac{Wt}{\frac{PK}{100} \times \text{dosis}} \times 100\%$$

Formula A replikasi 1 pada t = 10 menit

$$\% \text{ obat terlepas} = \frac{106,9}{\frac{100,30}{100} \times 200} \times 100\% = 53,31\%$$

Contoh perhitungan AUC pada disolusi:

Rumus:

Formula A replikasi 1

$$W_{tn-1} = 106,9$$

$$W_{tn} = 119,2$$

$$t_n = 20 \text{ menit}$$

$$t_{n-1} = 10 \text{ menit}$$

$$AUC = \frac{1006,9 + 119,2}{2} \times (20 - 10)$$

$$= 534,74$$

$$\text{Luas } \square = 60 \times \text{penetapan kadar} \times \text{dosis}$$

$$= 60 \times 100,30\% \times 200 \text{ mg}$$

$$= 12035,6$$

$$\% \text{ ED Formula A replikasi 1} = (\sum AUC / \text{luas } \square) \times 100\%$$

$$= (7551,06/12035,6) \times 100\% = 62,74 \%$$

LAMPIRAN G
HASIL UJI F KURVA BAKU

REPLIKASI I

KONSENTRASI	ABSORBANSI	X²	Y²	XY
75,45	0,129	5692,703	0,0166	9,7330
100,6	0,178	10120,36	0,0317	17,9068
201,2	0,359	40481,44	0,1289	72,2308
301,8	0,563	91083,24	0,3170	169,9134
402,4	0,728	161925,8	0,5300	292,9472
503	0,928	253009	0,8612	466,784

REPLIKASI II

KONSENTRASI	ABSORBANSI	X²	Y²	XY
75,38	0,144	5682,144	0,0207	10,8547
100,5	0,184	10100,25	0,0338	18,492
201	0,378	40401	0,1429	75,978
301,5	0,568	90902,25	0,3226	171,252
402	0,742	161604	0,5506	298,284
502,5	0,923	252506,3	0,8519	463,8075

REPLIKASI III

KONSENTRASI	ABSORBANSI	X ²	Y ²	XY
75,3	0,169	5670,09	0,0286	12,7257
100,4	0,211	10080,16	0,0445	21,1844
200,8	0,386	40320,64	0,1490	77,5088
301,2	0,571	90721,44	0,3260	171,9852
401,6	0,747	161282,6	0,5580	299,9952
502	0,91	252004	0,8281	456,82

	ΣX^2	ΣXY	ΣY^2	N	Residual SS	RDF
Replikasi I	562312,5	1029,5153	1,8853	6	$4,45 \cdot 10^{-4}$	3
Replikasi II	561195,9	1038,6682	1,9226	6	$2,13 \cdot 10^{-4}$	3
Replikasi III	560078,9	1040,2193	1,9342	6	$2,266 \cdot 10^{-3}$	3
Pooled regression					$2,91 \cdot 10^{-3}$	9
Common regression	1683587	3108,4028	5,7422		$3,13 \cdot 10^{-3}$	11

F hitung < F tabel $_{0,05 (3,9)} = 0,3287 < 3,86$

Karena F hitung lebih kecil dari F tabel maka tidak ada perbedaan bermakna antar persamaan regresi.

LAMPIRAN H

HASIL UJI STATISTIK KEKERASAN TABLET LIKUISOLID IBUPROFEN ANTAR FORMULA

Descriptives

Kekerasan

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Formula A	3	7.2900	1.45523	.84018	3.6750	10.9050	5.61	8.16
Formula B	3	5.0933	.78501	.45322	3.1433	7.0434	4.31	5.88
Formula C	3	5.6167	.60707	.35049	4.1086	7.1247	5.07	6.27
Formula D	3	4.8033	.19732	.11392	4.3132	5.2935	4.67	5.03
Total	12	5.7008	1.25785	.36311	4.9016	6.5000	4.31	8.16

Test of Homogeneity of Variances

Kekerasan

Levene Statistic	df1	df2	Sig.
3.766	3	8	.059

ANOVA

Kekerasan

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	11.121	3	3.707	4.720	.035
Within Groups	6.283	8	.785		
Total	17.404	11			

Karena $F_{hitung} > F_{tabel_{0,05(3,8)}} = 4,720 > 4,07$; maka H_0 ditolak dan ada perbedaan bermakna antar formula.

Multiple Comparisons

kekerasan
LSD

(I) Formula	(J) Formula	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Formula A	Formula B	2.19667*	.72358	.016	.5281	3.8652
	Formula C	1.67333*	.72358	.049	.0048	3.3419
	Formula D	2.48667*	.72358	.009	.8181	4.1552
Formula B	Formula A	-2.19667*	.72358	.016	-3.8652	-.5281
	Formula C	-.52333	.72358	.490	-2.1919	1.1452
	Formula D	.29000	.72358	.699	-1.3786	1.9586
Formula C	Formula A	-1.67333*	.72358	.049	-3.3419	-.0048
	Formula B	.52333	.72358	.490	-1.1452	2.1919
	Formula D	.81333	.72358	.294	-.8552	2.4819
Formula D	Formula A	-2.48667*	.72358	.009	-4.1552	-.8181
	Formula B	-.29000	.72358	.699	-1.9586	1.3786
	Formula C	-.81333	.72358	.294	-2.4819	.8552

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

LAMPIRAN I

HASIL UJI STATISTIK KERAPUHAN TABLET LIKUISOLID
IBUPROFEN ANTAR FORMULA

Descriptives

Kerapuhan

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Formula A	3	.4400	.07000	.04041	.2661	.6139	.37	.51
Formula B	3	.4533	.11930	.06888	.1570	.7497	.32	.55
Formula C	3	.2733	.07234	.04177	.0936	.4530	.19	.32
Formula D	3	.3433	.09713	.05608	.1021	.5846	.26	.45
Total	12	.3775	.10980	.03170	.3077	.4473	.19	.55

Test of Homogeneity of Variances

Kerapuhan

Levene Statistic	df1	df2	Sig.
.638	3	8	.611

ANOVA

Kerapuhan

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.065	3	.022	2.565	.128
Within Groups	.068	8	.008		
Total	.133	11			

Karena $F_{hitung} < F_{tabel_{0,05(3,8)}} = 2,565 < 4,07$; maka H_0 diterima dan tidak ada perbedaan bermakna antar formula.

LAMPIRAN J

HASIL UJI STATISTIK WAKTU HANCUR TABLET LIKUISOLID IBUPROFEN ANTAR FORMULA

Descriptives

waktu_hancur

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Formula A	3	1.4800	.25515	.14731	.8462	2.1138	1.29	1.77
Formula B	3	1.0167	.05508	.03180	.8799	1.1535	.98	1.08
Formula C	3	1.0300	.01732	.01000	.9870	1.0730	1.02	1.05
Formula D	3	1.3333	.21733	.12548	.7934	1.8732	1.17	1.58
Total	12	1.2150	.25311	.07307	1.0542	1.3758	.98	1.77

Test of Homogeneity of Variances

waktu_hancur

Levene Statistic	df1	df2	Sig.
5.882	3	8	.020

ANOVA

waktu_hancur

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	.473	3	.158	5.457	.025
Within Groups	.231	8	.029		
Total	.705	11			

Karena $F_{hitung} > F_{tabel_{0,05(3,8)}} = 5,457 > 4,07$; maka H_0 ditolak dan ada perbedaan bermakna antar formula.

Multiple Comparisons

waktu_hancur

LSD

(I) Formula	(J) Formula	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Formula A	Formula B	.46333*	.13884	.010	.1432	.7835
	Formula C	.45000*	.13884	.012	.1298	.7702
	Formula D	.14667	.13884	.322	-.1735	.4668
Formula B	Formula A	-.46333*	.13884	.010	-.7835	-.1432
	Formula C	-.01333	.13884	.926	-.3335	.3068
	Formula D	-.31667	.13884	.052	-.6368	.0035
Formula C	Formula A	-.45000*	.13884	.012	-.7702	-.1298
	Formula B	.01333	.13884	.926	-.3068	.3335
	Formula D	-.30333	.13884	.060	-.6235	.0168
Formula D	Formula A	-.14667	.13884	.322	-.4668	.1735
	Formula B	.31667	.13884	.052	-.0035	.6368
	Formula C	.30333	.13884	.060	-.0168	.6235

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

LAMPIRAN K

HASIL UJI STATISTIK PENETAPAN KADAR TABLET
LIKUISOLID IBUPROFEN ANTAR FORMULA

Descriptives

Penetapan_kadar

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Formula A	3	100.2933	.82373	.47558	98.2471	102.3396	99.38	100.98
Formula B	3	99.8700	.47286	.27301	98.6953	101.0447	99.43	100.37
Formula C	3	99.8133	.68120	.39329	98.1211	101.5055	99.11	100.47
Formula D	3	99.6067	.68061	.39295	97.9159	101.2974	98.91	100.27
Total	12	99.8958	.63289	.18270	99.4937	100.2980	98.91	100.98

Test of Homogeneity of Variances

Penetapan_kadar

Levene Statistic	df1	df2	Sig.
.335	3	8	.800

ANOVA

Penetapan_kadar

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.747	3	.249	.545	.665
Within Groups	3.659	8	.457		
Total	4.406	11			

Karena $F_{hitung} < F_{tabel_{0,05(3,8)}} = 0,545 < 4,07$; maka H_0 diterima dan tidak ada perbedaan bermakna antar formula.

LAMPIRAN L

HASIL UJI STATISTIK DISOLUSI BERDASARKAN %ED₆₀ TABLET LIKUISOLID IBUPROFEN ANTAR FORMULA

Descriptives

Persen_Efisiensi_Disolusi

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Formula A	3	62.7133	.31086	.17947	61.9411	63.4855	62.39	63.01
Formula B	3	74.8400	.26058	.15044	74.1927	75.4873	74.67	75.14
Formula C	3	75.7633	.18009	.10398	75.3160	76.2107	75.58	75.94
Formula D	3	77.7733	.15044	.08686	77.3996	78.1471	77.63	77.93
Total	12	72.7725	6.16945	1.78097	68.8526	76.6924	62.39	77.93

Test of Homogeneity of Variances

Persen_Efisiensi_Disolusi

Levene Statistic	df1	df2	Sig.
.720	3	8	.568

ANOVA

Persen_Efisiensi_Disolusi

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	418.244	3	139.415	2539.432	.000
Within Groups	.439	8	.055		
Total	418.684	11			

Karena $F_{hitung} > F_{tabel_{0,05(3,8)}} = 2539,432 > 4,07$; maka H_0 ditolak dan ada perbedaan bermakna antar formula.

Multiple Comparisons

Persen_Efisiensi_Disolusi
LSD

(I) Formula	(J) Formula	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Formula A	Formula B	-12.12667*	.19131	.000	-12.5678	-11.6855
	Formula C	-13.05000*	.19131	.000	-13.4912	-12.6088
	Formula D	-15.06000*	.19131	.000	-15.5012	-14.6188
Formula B	Formula A	12.12667*	.19131	.000	11.6855	12.5678
	Formula C	-.92333*	.19131	.001	-1.3645	-.4822
	Formula D	-2.93333*	.19131	.000	-3.3745	-2.4922
Formula C	Formula A	13.05000*	.19131	.000	12.6088	13.4912
	Formula B	.92333*	.19131	.001	.4822	1.3645
	Formula D	-2.01000*	.19131	.000	-2.4512	-1.5688
Formula D	Formula A	15.06000*	.19131	.000	14.6188	15.5012
	Formula B	2.93333*	.19131	.000	2.4922	3.3745
	Formula C	2.01000*	.19131	.000	1.5688	2.4512

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

LAMPIRAN M

HASIL UJI STATISTIK KONSTANTA LAJU DISOLUSI TABLET LIKUISOLID IBUPROFEN ANTAR FORMULA

Descriptives

Konstanta_Laju_Disolusi

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Formula A	3	.054367	.0021595	.0012468	.049002	.059731	.0521	.0564
Formula B	3	.293067	.3913864	.2259670	-.679191	1.265324	.0664	.7450
Formula C	3	.083867	.0020841	.0012032	.078690	.089044	.0816	.0857
Formula D	3	.089133	.0035796	.0020667	.080241	.098025	.0850	.0912
Total	12	.130108	.1941739	.0560532	.006736	.253481	.0521	.7450

Test of Homogeneity of Variances

Konstanta_Laju_Disolusi

Levene Statistic	df1	df2	Sig.
15.793	3	8	.001

ANOVA

Konstanta_Laju_Disolusi

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	.108	3	.036	.943	.464
Within Groups	.306	8	.038		
Total	.415	11			

Karena $F_{hitung} < F_{tabel_{0,05 (3,8)}} = 0,943 < 4,07$; maka H_0 diterima dan tidak ada perbedaan bermakna antar formula.

LAMPIRAN N

SERTIFIKAT ANALISIS IBUPROFEN



Shasun Chemicals And Drugs Ltd.

IBUPROFEN BP/Ph.Eur. (SN Grade) CERTIFICATE OF ANALYSIS			
Nature of Packing : Sea Worthy Fibre Drum		Analytical Report No. : FPIBU060764	
Sample Taken By : S.Sivakumar		Batch Number : IBU060764	
Date of Manufacture : July 2006		Date of Analysis : 25-07-2006	
Expiry Date : June 2011		Date of Report : 25-07-2006	
Batch Volume(Qty) : 3000 Kg.		Manufactured By : Shasun Chemicals And Drugs Limited, Pondicherry.	
S.No	TESTS	RESULTS	LIMITS
1.	Appearance	White crystalline powder	White, crystalline powder or colourless crystals
2.	Solubility	Complies	Freely soluble in acetone, in methanol and in methylene chloride. Dissolves in dilute solutions of alkali hydroxides and carbonates. Practically insoluble in water
3.	Clarity and colour of solution	Complies	10 % w/v solution (5g in 50 mL of the solution) in methanol should be clear and colourless
4.	Identification		
	a) By IR	Conforms	The IR spectrum of sample should be concordant with the spectrum of Ibuprofen RS
	b) By UV	1.24 1.03	The ratio of absorbance at the max. at 264 nm to that at 258 nm is 1.20 to 1.30 The ratio of absorbance at the max. at 272 nm to that at 258 nm is 1.00 to 1.10
	c) By TLC	Complies	Principal spot should be similar in position, colour and size compared to Ibuprofen RS
	d) Melting point	76.1 °C	75.0°C to 78.0 °C
5.	Optical rotation	0.20 °	- 0.05° to +0.05°
6.	Heavy metals	LT 10 PPM	NMT 10 PPM
7.	Related substances (by HPLC)		
	a) 2-(4-Isobutyl) Phenyl Propanoic Acid (Impurity J)	0.06 % (Area %)	NMT 0.20 % (Area %)
	b) 2-(4-Butyl phenyl)propanoic acid (Impurity B)	Not Detected	NMT 0.30 % (w/w)
	c) 4-Isobutylacetophenone (Impurity E)	Not Detected	NMT 0.30 % (Area %)
	d) Any unidentified impurity	0.04 % (Area %)	NMT 0.10 % (Area %)
	e) Total impurities (Apart from impurity B)	0.14 % (Area %)	NMT 0.50 % (Area %)
8.	Sulphated ash	0.04 % (w/w)	NMT 0.10 % (w/w)
9.	Loss on drying	0.10 % (w/w)	NMT 0.50 % (w/w)
10.	Assay: (dry basis)	99.8 % (w/w)	98.5 % -101.0 % (w/w)

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shapdy@shasun.com



Shasun Chemicals And Drugs Ltd.

IBUPROFEN BP/Ph.Eur. (SN Grade) CERTIFICATE OF ANALYSIS			
Nature of Packing : Sea Worthy Fibre Drum		Analytical Report No. : FPIBU0607674	
Sample Taken By : S.Sivakumar		Batch Number : IBU0607674	
Date of Manufacture : July 2006		Date of Analysis : 25-07-2006	
Expiry Date : June 2011		Date of Report : 25-07-2006	
Batch Volume(Qty) : 3000 Kg.		Manufactured By : Shasun Chemicals And Drugs Limited, Pondicherry.	
S.No	TESTS	RESULTS	LIMITS
ADDITIONAL TESTS			
a.	Bulk Density Untapped Tapped(1250 tappings)	0.45 g/mL 0.64 g/mL	0.35- 0.55 g/mL 0.50- 0.75 g/mL
b.	Mean Particle Size	76.4 microns	60.0 – 130.0 microns
c.	Residual solvents i) Acetone ii) Isopropyl alcohol iii) Hexanes iv) Tri chloro ethylene v) Methanol ϕ	17 PPM LT 0.89 PPM 29 PPM LT 0.19 PPM Not Detected	NMT 100 PPM NMT 250 PPM NMT 290 PPM NMT 80 PPM NMT 500 PPM
OPINION: The Material Complies As Per BP/Ph.Eur. Standard. Note :NMT = Not more than NLT = Not less than LT = Less than ϕ NOT USED IN THE PROCESS, TEST INCLUDED FOR COMPLIANCE WITH CERTIFICATE OF SUITABILITY.			
Compiled by : <i>Ch</i> Date : 25/07/2006 (E.Senthilkumar) Senior Chemist		Reviewed by : <i>pre</i> Date : 25/07/2006 (S.Rajasudalaiimuthu) Senior Chemist	Approved by : <i>[Signature]</i> Date : 25/07/2006 (N.Vinayagaperumal) Dy.QC-Incharge
SCQC/F-024/F/06			

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shapdy@shasun.com

LAMPIRAN O

SERTIFIKAT ANALISIS AVICEL PH 102

AsahiKASEI
ASAHI KASEI CHEMICALS

1-105 Kanda Jinbocho, Chiyoda-ku, TOKYO 101-8101, JAPAN
TEL +81-(0)3-3296-3361 FAX +81-(0)3-3296-3467
Manufacturing site: 304, Mizushiri-machi, Nobeoka-city, Miyazaki 882-0015, Japan

Date: 08-APR-2011
Issued by manufacturer

YOUR NO.: C9HE-11-5298-0012

1511 / 10 / 11

CERTIFICATE OF ANALYSIS

Compendial name: Microcrystalline Cellulose, NF, Ph. Eur., JP

Trade name : CEOLUS®

Grade : PH-102 **Lot No.** 2122 (200 bags)

Manufacturing Date: 05-FEB-2011

Re-evaluation Date: 05-FEB-2014

Organic Solvent: not used in our process

Compendial Standards	Specifications	Lot Analysis
Description	Passes	Passes
Identification	Passes	Passes
Degree of polymerization	100 - 300	Passes
Loss on drying (%)	2.0 - 5.0	3.5
Water-soluble substances (mg)	NMT 12.5	4.6
Ether-soluble substances (mg)	NMT 5.0	0.1
Conductivity (μ S/cm)	NMT 75	29
Heavy metals (ppm)	NMT 10	NMT 10
Solubility	Passes	Passes
Residue on Ignition (%)	NMT 0.1	0.00
Bulk density (g/cm³)	0.28 - 0.33	0.316
Particle size, wt. % >150 μm (100 mesh)	5.0 - 7.5	6.2
Total aerobic microbial count (cfu/g)	NMT 1000	Passes
Total combined molds and yeasts count (cfu/g)	NMT 100	Passes
<i>Escherichia coli</i>	None Present	None Present
<i>Salmonella</i> species	None Present	None Present
<i>Pseudomonas Aeruginosa</i>	None Present	None Present
<i>Staphylococcus Aureus</i>	None Present	None Present

ASAHI Standards

Particle size, wt. % >250 μm (60 mesh)	LT 8.0	0.5
Particle size, wt. % >150 μm (100 mesh)	20 - 40	28

NMT --Not More Than; LT --Less Than

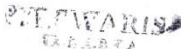
We certify that the product complies with the standards of the NF, Ph. Eur., JP.

Storage conditions: Store at ambient conditions. Keep containers sealed; material is hygroscopic.

Re-evaluation Date: Three years after manufacturing, if stored as recommended.

Asahi Kasei Chemicals recommends that the customer's quality control unit may re-evaluate the quality of this material at the given time e.g. for loss on drying and extend the shelf life of this lot on its own responsibility.


Shuji ONISHI
Manager
Quality Assurance Section
CEOLUS Production Department



LAMPIRAN P
SERTIFIKAT ANALISIS SODIUM STRACH GLYCOLATE

YUNG ZIP CHEMICAL IND. CO., LTD.
 59, Yu Shih Road
 Youth Industrial District
 Tachia, Tainan, 437
 R. O. C.
 TEL: 886-4-26818780, 26811344 FAX: 886-4-26812911

CERTIFICATE OF ANALYSIS

D S T
 (Sodium Starch Glycolate)

Lot No.: SSGA02121

Mfg. Date: Nov. 29, 2007

Analysis Following USP 30-NF 25

Exp. Date: Nov. 28, 2010

ITEMS	SPECIFICATIONS	RESULTS
Description	A white, tasteless, odorless, relatively free-flowing powder.	Confirmed
Identification	USP 30/NF 25	Confirmed
Microbial limits	Salmonella E. Coli	Negative Negative
pH	Between 5.5 and 7.5	6.1
Loss on drying	Not more than 10.0 %	2.5 %
Iron	Not more than 0.002 %	Passed
Heavy metals	Not more than 0.002 %	Passed
Sodium chloride	Not more than 7.0 %	4.0 %
Sodium glycolate	Not more than 2.0 %	1.8 %
Assay	Sodium (Na) (2.8% to 4.2%)	3.2 %

Conclusion : Passed

Chien-Sheng Tseng
 Chien-Sheng Tseng
 Director Quality Assurance

Date
 12/28/2007/40053

LAMPIRAN Q

SERTIFIKAT ANALISIS MAGNESIUM STEARAT



QUALITÄTSMANAGEMENT

CERTIFICATE OF ANALYSIS

customer: PT BRATACO
 contact person:
 FAX:
 your order-number: PTB0735/V1104 our order-number: 4011746
 delivered on: 04.08.2004 quantity: 9000
 brand: LIGA MAGNESIUM STEARATE MF-2-V VEGETABLE charge-no. C447176
 manufacturing date: 2004-07-19 expiry date: 2006-07-19

product is in accordance with the USP27/NF22/BP2003/Ph.Eur 4rd ed./DAB10/JP 14th. ed./FCC 5th. ed.

parameter	unit	method	result
identification A	°C	Ph.Eur	59
retention A	metal reaction	USP/NF	passes test
identification B	retention time GC	USP/NF	retentions match
identity or	ml 0,01N HCl	Ph.Eur	<0,5
quality	ml 0.01 N NaOH	Ph.Eur	<0,5
heavy metals as Pb	ppm	JP	<20
lead	ppm	BAE 300-B	<1
cadmium	ppm	BAE 300-B	<1
nickel	ppm	BAE 300-B	<1
chloride	%	Ph.Eur	<0,1
sulfate	%	Ph.Eur	<0,5
acid value of the fatty acid	mg KOH/g	Ph.Eur	204,8
relative content of stearic acid	%	USP/NF	65,1
rel. cont. of stearic and palmitic acid	%	USP/NF	98,9
microbial count	cfu/g	USP/NF	<10
Molds & Yeasts	cfu/g	USP/NF	105
Escherichia coli	cfu/g	USP/NF	absent
Salmonella Species	cfu/g	USP/NF	absent
organic volatile impurities		USP/NF	meets USP/NF
loss on drying	%	BAE 600	3,9
magnesium content	%	BAE 200 o	4,7
free fatty acid	%	BAE 400	0,6
avo residue at 200 mesh	%	BAE 605	0,2
bulk density tapped	g/ml	BAE 611a	0,32
acidic surface area BET	qm/g	USP/NF	10,0
contamination		BAE 601	In accordance

Venlo, 27.08.04

data of the above mentioned delivery are based upon careful test according to the guidelines of our quality assurance system. They do not release the customer from entry control. Besides we do not guarantee special properties for concrete applications.
 certificate was issued by EDV and does not bear a signature.



BRATACO
 MANUFACTURER
 PT BRATACO

LAMPIRAN R

TABEL UJI F

TABEL DISTRIBUSI F UNTUK 5% DAN 1%

Baris atas untuk taraf signifikan 5%

Baris bawah untuk taraf signifikan 1%

$V_2 =$ dk penyebut	$V_1 =$ dk pembilang																										
	1	2	3	4	5	6	7	8	9	10	11	12	14	16	20	24	30	40	50	75	100	200	500	∞			
1	161 4052	200 4999	216 5403	225 5625	230 5764	234 5859	237 5928	239 5961	241 6022	242 6056	243 6082	244 6106	245 6142	246 6169	248 6208	249 6234	250 6258	251 6286	252 6302	253 6323	253 6334	254 6352	254 6361	254 6366			
2	18,51 98,49	19,00 99,01	19,16 99,17	19,25 99,25	19,30 99,30	19,33 99,33	19,36 99,34	19,37 99,36	19,38 97,38	19,39 99,40	19,40 99,41	19,41 99,42	19,42 99,43	19,43 99,44	19,44 99,45	19,45 99,46	19,46 99,47	19,47 99,48	19,47 99,48	19,48 99,49	19,49 99,49	19,49 99,49	19,50 99,50	19,50 99,50			
3	10,13 34,12	9,55 30,81	9,28 29,46	9,12 28,71	9,01 28,24	8,94 27,91	8,88 27,67	8,84 27,49	8,81 27,34	8,78 27,23	8,76 27,13	8,74 27,05	8,71 26,92	8,69 26,83	8,66 26,69	8,64 26,60	8,62 26,50	8,60 26,41	8,58 26,30	8,57 26,27	8,56 26,23	8,54 26,18	8,54 26,14	8,53 26,12			
4	7,71 21,20	6,94 18,00	6,59 16,69	6,39 15,98	6,26 15,52	6,16 15,21	6,09 14,98	6,04 14,80	6,00 14,66	5,96 14,54	5,93 14,45	5,91 14,37	5,87 14,24	5,84 14,15	5,80 14,02	5,77 13,93	5,74 13,83	5,71 13,74	5,70 13,69	5,68 13,61	5,66 13,57	5,65 13,52	5,64 13,48	5,63 13,46			
5	6,61 16,26	5,79 13,27	5,41 12,06	5,19 11,39	5,05 10,97	4,95 10,67	4,88 10,45	4,82 10,27	4,78 10,15	4,74 10,05	4,70 9,96	4,68 9,89	4,64 9,77	4,60 9,68	4,56 9,55	4,53 9,47	4,50 9,38	4,46 9,29	4,44 9,24	4,42 9,17	4,40 9,13	4,38 9,07	4,37 9,04	4,36 9,02			
6	5,99 13,74	5,14 10,92	4,76 9,78	4,53 9,15	4,39 8,75	4,28 8,47	4,21 8,26	4,15 8,10	4,10 7,98	4,06 7,87	4,03 7,79	4,00 7,72	3,96 7,60	3,92 7,52	3,87 7,39	3,84 7,31	3,81 7,23	3,77 7,14	3,75 7,09	3,72 7,02	3,71 6,99	3,69 6,94	3,68 6,90	3,67 6,88			
7	5,59 12,25	4,74 9,55	4,35 8,45	4,12 7,85	3,97 7,46	3,87 7,19	3,79 7,00	3,73 6,84	3,68 6,71	3,63 6,62	3,60 6,54	3,57 6,47	3,52 6,35	3,49 6,27	3,44 6,15	3,41 6,07	3,38 5,98	3,34 5,90	3,32 5,85	3,29 5,78	3,28 5,75	3,25 5,70	3,24 5,67	3,23 5,65			
8	5,32 11,26	4,46 8,65	4,07 7,59	3,84 7,01	3,69 6,63	3,58 6,37	3,50 6,19	3,44 6,03	3,39 5,91	3,34 5,82	3,31 5,74	3,28 5,67	3,23 5,56	3,20 5,48	3,15 5,28	3,12 5,20	3,08 5,11	3,05 5,06	3,03 5,00	3,00 4,96	2,98 4,91	2,96 4,88	2,94 4,86	2,93 4,86			
9	5,12 10,56	4,26 8,02	3,86 6,99	3,63 6,42	3,48 6,06	3,37 5,80	3,29 5,62	3,23 5,47	3,18 5,35	3,13 5,26	3,10 5,18	3,07 5,11	3,02 5,00	2,98 4,92	2,93 4,80	2,90 4,73	2,86 4,61	2,82 4,56	2,80 4,51	2,77 4,45	2,76 4,41	2,73 4,36	2,72 4,33	2,71 4,34			

$V_2 = dk$ penyebut	$V_1 = dk$ pembilang																										
	1	2	3	4	5	6	7	8	9	10	11	12	14	16	20	24	30	40	50	75	100	200	500	Σ			
10	4,96 10,04	4,10 7,56	3,71 6,55	3,48 5,99	3,33 5,64	3,22 5,39	3,14 5,21	3,07 5,06	3,02 4,95	2,97 4,85	2,94 4,78	2,91 4,71	2,86 4,60	2,82 4,52	2,77 4,41	2,74 4,33	2,70 4,25	2,67 4,17	2,64 4,12	2,61 4,05	2,59 4,01	2,56 3,96	2,55 3,93	2,54 3,91			
11	4,84 9,65	3,98 7,20	3,59 6,22	3,36 5,67	3,20 5,32	3,09 5,07	3,01 4,88	2,95 4,74	2,90 4,63	2,86 4,54	2,82 4,46	2,79 4,40	2,74 4,29	2,70 4,21	2,65 4,10	2,61 4,02	2,57 3,94	2,53 3,86	2,50 3,80	2,47 3,74	2,45 3,70	2,42 3,66	2,41 3,62	2,40 3,60			
12	4,75 9,33	3,88 6,93	3,49 5,95	3,26 5,41	3,11 5,06	3,00 4,82	2,92 4,65	2,85 4,50	2,80 4,39	2,76 4,30	2,72 4,22	2,69 4,16	2,64 4,05	2,60 3,98	2,54 3,86	2,50 3,78	2,46 3,70	2,42 3,61	2,40 3,56	2,36 3,49	2,35 3,46	2,32 3,41	2,31 3,38	2,30 3,36			
13	4,67 9,07	3,80 6,70	3,41 5,74	3,18 5,20	3,02 4,86	2,92 4,62	2,84 4,44	2,77 4,30	2,72 4,19	2,67 4,10	2,63 4,02	2,60 3,96	2,55 3,85	2,51 3,78	2,46 3,67	2,42 3,59	2,38 3,51	2,34 3,42	2,32 3,37	2,28 3,30	2,26 3,27	2,24 3,21	2,22 3,18	2,21 3,16			
14	4,60 8,86	3,74 6,51	3,34 5,56	3,11 5,03	2,96 4,69	2,85 4,46	2,77 4,28	2,70 4,14	2,65 4,03	2,60 3,94	2,56 3,86	2,53 3,80	2,48 3,70	2,44 3,62	2,39 3,51	2,35 3,43	2,31 3,34	2,27 3,26	2,24 3,21	2,21 3,14	2,19 3,11	2,16 3,06	2,14 3,02	2,13 3,00			
15	4,54 8,68	3,68 6,36	3,29 5,42	3,06 4,89	2,90 4,56	2,79 4,32	2,70 4,14	2,64 4,00	2,59 3,89	2,55 3,80	2,51 3,73	2,48 3,67	2,43 3,56	2,39 3,48	2,33 3,36	2,29 3,29	2,25 3,20	2,21 3,12	2,18 3,07	2,15 3,00	2,12 2,97	2,10 2,92	2,08 2,89	2,07 2,87			
16	4,49 8,53	3,63 6,23	3,24 5,29	3,01 4,77	2,85 4,44	2,74 4,20	2,66 4,03	2,59 3,89	2,54 3,78	2,49 3,69	2,45 3,61	2,42 3,55	2,37 3,45	2,33 3,37	2,28 3,25	2,24 3,18	2,20 3,10	2,16 3,01	2,13 2,96	2,09 2,89	2,07 2,86	2,04 2,80	2,02 2,77	2,01 2,75			
17	4,45 8,47	3,59 6,11	3,20 5,18	2,96 4,67	2,81 4,34	2,70 4,10	2,67 3,93	2,55 3,79	2,50 3,68	2,45 3,59	2,41 3,52	2,38 3,45	2,33 3,35	2,29 3,27	2,23 3,16	2,19 3,08	2,15 3,00	2,11 2,92	2,08 2,86	2,04 2,79	2,02 2,76	1,99 2,70	1,97 2,67	1,96 2,65			
18	4,41 8,28	3,55 6,05	3,16 5,09	2,93 4,58	2,77 4,25	2,66 4,01	2,58 3,85	2,51 3,71	2,46 3,60	2,41 3,51	2,37 3,44	2,34 3,37	2,29 3,27	2,25 3,19	2,19 3,07	2,15 3,00	2,11 2,92	2,07 2,83	2,04 2,78	1,98 2,71	1,95 2,68	1,93 2,62	1,91 2,59	1,88 2,57			
19	4,38 8,18	3,52 5,93	3,13 5,01	2,90 4,50	2,74 4,17	2,63 3,94	2,55 3,77	2,48 3,63	2,43 3,52	2,38 3,43	2,34 3,36	2,31 3,30	2,26 3,19	2,21 3,12	2,15 3,00	2,11 2,92	2,07 2,84	2,02 2,76	1,96 2,70	1,94 2,63	1,91 2,60	1,88 2,54	1,86 2,51	1,84 2,49			
20	4,35 8,10	3,49 5,85	3,10 4,94	2,87 4,43	2,71 4,10	2,60 3,87	2,52 3,71	2,45 3,56	2,40 3,45	2,35 3,37	2,31 3,30	2,26 3,23	2,23 3,13	2,18 3,05	2,12 2,94	2,08 2,86	2,04 2,77	1,99 2,69	1,96 2,63	1,92 2,56	1,90 2,53	1,87 2,47	1,85 2,44	1,84 2,42			
21	4,32 8,02	3,47 5,78	3,07 4,87	2,84 4,37	2,68 4,04	2,57 3,81	2,49 3,65	2,42 3,51	2,37 3,40	2,32 3,31	2,28 3,24	2,25 3,17	2,20 3,07	2,15 2,99	2,09 2,88	2,05 2,80	2,00 2,72	1,96 2,63	1,93 2,58	1,89 2,51	1,87 2,47	1,84 2,42	1,82 2,38	1,81 2,36			
22	4,30 7,94	3,44 5,72	3,05 4,82	2,82 4,31	2,66 3,99	2,55 3,76	2,47 3,59	2,40 3,45	2,35 3,35	2,30 3,26	2,26 3,18	2,23 3,12	2,18 3,02	2,13 2,94	2,07 2,83	2,03 2,75	1,98 2,67	1,93 2,58	1,91 2,53	1,87 2,46	1,84 2,42	1,81 2,37	1,80 2,33	1,78 2,31			
23	4,28 7,88	3,42 5,66	3,03 4,76	2,80 4,26	2,64 3,94	2,53 3,71	2,45 3,54	2,38 3,41	2,32 3,30	2,28 3,21	2,24 3,14	2,20 3,07	2,14 2,97	2,10 2,89	2,04 2,78	2,00 2,70	1,96 2,62	1,91 2,53	1,88 2,48	1,84 2,41	1,82 2,37	1,79 2,32	1,77 2,28	1,76 2,26			

LAMPIRAN S

TABEL UJI R

DEGREES OF FREEDOM (DF)	5 PERCENT	1 PERCENT	DEGREES OF FREEDOM (DF)	5 PERCENT	1 PERCENT
1	.997	1.000	24	.388	.496
2	.950	.990	25	.381	.487
3	.878	.959	26	.374	.478
4	.811	.917	27	.367	.470
5	.754	.874	28	.361	.463
6	.707	.834	29	.355	.456
7	.666	.798	30	.349	.449
8	.632	.765	35	.325	.418
9	.602	.735	40	.304	.393
10	.576	.708	48	.288	.372
11	.553	.684	50	.273	.354
12	.532	.661	60	.250	.325
13	.514	.641	70	.232	.302
14	.497	.623	80	.217	.283
15	.482	.606	90	.205	.267
16	.468	.590	100	.195	.254
17	.456	.575	125	.174	.228
18	.444	.561	150	.159	.208
19	.433	.549	200	.138	.181
20	.423	.537	300	.113	.148
21	.413	.526	400	.098	.128
22	.404	.515	500	.088	.115
23	.396	.505	1000	.062	.081