LAMPIRAN A

HASIL UJI MUTU FISIK GRANUL

Mutu fisik yang diuji	Batch	Formula Tablet *Buccoadhesive* Atenolol				Persyaratan
		F I	F II	F III	F IV	
Kadar air (Persen)	I	3,21	3,01	3,42	3,81	3 – 5 % (Voigt, 1995)
	II	3,17	3,27	3,31	3,97	
	III	3,03	3,42	3,32	3,67	
	$\bar{X}$	3,14	3,23	3,35	3,82	
	SD	0,09	0,21	0,06	0,15	
Waktu alir (detik)	I	2,3	2,3	2,4	2,3	Kurang dari 2,5 detik
	II	2,2	2,2	2,1	2,4	
	III	2,2	2,3	1,9	2,3	
	$\bar{X}$	2,33	2,27	2,13	2,33	
	SD	0,06	0,06	0,25	0,06	
Sudut diam (derajat)	I	29,17	31,1	29,98	28,97	25 – 40 (Lachman *et al.*, 1989)
	II	30,5	32,13	28,67	29,77	
	III	30,26	33,47	28,96	29,35	
	$\bar{X}$	29,98	32,33	29,2	29,36	
	SD	0,71	1,19	0,69	0,4	
Indeks kompresi-bilitas (persen)	I	17,99	16,66	10	17,64	12 - 16 = Baik (Wells, 1993)
	II	20	18,02	17,99	12,97	
	III	11,77	13,84	15,53	18,87	
	$\bar{X}$	16,59	16,17	14,51	16,49	
	SD	4,29	2,13	4,09	3,11	

Contoh perhitungan sudut diam :

Formula I :

W persegi panjang = 5,34 gram

W lingkaran = 0,38 gram

Luas persegi panjang = 29,6 x 21,1

= 624,56 cm^2

Luas lingkaran = $\frac{0,88}{8,84}$ x 624,56 = 44,4443

L = πr^2

r^2 = $\frac{L}{\pi}$

= $\frac{44,44}{\pi}$

= 3,76 cm

tg α = $\frac{t}{r}$ = $\frac{2,1}{3,76}$ = 0,56

α = 29,17

Contoh perhitungan indeks kompresibilitas :

Formula I :

Berat gelas ukur = 119,38 gram (W_1)

Berat gelas ukur + granul = 141,69 gram (W_2)

V_0 = 50 mL

V_1 = 41 mL

Bj nyata = $\frac{(W_2 - W_1)}{V_0}$ = $\frac{(141,69 - 119,38)}{50}$ = 0,4462

Bj mampat = $\frac{(W_2 - W_1)}{V_1}$ = $\frac{(141,69 - 119,38)}{41}$ = 0,5441

% Kompresibilitas = $\left[1 - \frac{Bj\ nyata}{Bj\ mampat}\right] x\ 100\%$

= $\left[1 - \frac{0,4462}{0,5441}\right] x\ 100\%$

= 17,99 %

HASIL UJI PERCOBAAN
WAKTU ALIR GRANUL

Replikasi	Berat Granul (gram)	Waktu (detik)	Persyaratan
I	102,17	9,8	Kurang dari
II	100,63	9,8	10 detik
II	100,92	9,7	(Lachman *et al.*, 1989)
I	25,75	2,4	Kurang dari
II	26,14	2,5	2,5 detik
III	25,13	2,4	

Berdasarkan percobaan tersebut, maka dilakukan uji T *(t-test)* dan didapatkan hasil sebagai berikut :

Group Statistics

	Hubungan	N	Mean	Std. Deviation	Std. Error Mean
Waktu	25 gram granul	3	2.4333	.05774	.03333
	100 gram granul	3	2.4400	.01732	.01000

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Waktu	Equal variances assumed	7.193	.055	-.192	4	.857	-.00667	.03480	-.10329	.08996
	Equal variances not assumed			-.192	2.357	.863	-.00667	.03480	-.13663	.12330

Pada kolom uji T, diperoleh nilai *P-value* (P= 0,857) > α = 0,05, yang menunjukkan bahwa secara statistik tidak ada perbedaan yang bermakna antara waktu alir dari 100 gram granul selama 10 detik dengan waktu alir dari 25 gram granul selama 2,5 detik. Berdasarkan uji tersebut, maka persyaratan untuk 25 gram granul yang diuji harus memiliki waktu kurang dari 2,5 detik.

LAMPIRAN B

HASIL UJI KESERAGAMAN KANDUNGAN TABLET

***BUCCOADHESIVE* ATENOLOL**

Hasil Uji Keseragaman Kandungan Tablet Buccoadhesive Formula I

Batch 1

Absorbansi	C sampel	W sampel	C teoritis	Kadar (%)
0,162	31,15	153,4	30,68	101,54
0,167	32,31	154,3	30,86	104,68
0,162	31,15	151,7	30,34	102,68
0,161	30,92	154,5	30,9	100,07
0,159	30,46	152,2	30,44	100,07
0,161	30,92	151,1	30,22	102,32
0,158	30,23	152,7	30,54	98,99
0,159	30,46	150,1	30,02	101,47
0,158	30,23	153,2	30,64	98,67
0,155	29,54	150,9	30,18	97,88
			$\bar{X}$ =	100,84
			SD=	2,09

Contoh Perhitungan :

Absorbansi = 0,162 → y = 0,0268 + 4,34 . 10^{-3}X

Konsentrasi sampel = 31,15 ppm

Konsentrasi teoritis = 30,68 ppm

% Kadar $= \frac{\text{Konsentrasi sampel}}{\text{Konsentrasi teoritis}} \times 100\ \% = \frac{31,15}{30,68} \times 100\ \% = 101,54\ \%$

Hasil Uji Keseragaman Kandungan Tablet Buccoadhesive Formula II

Batch 1

Absorbansi	C sampel	W sampel	C teoritis	Kadar (%)
0,157	30,00	151,2	30,24	99,21
0,161	30,92	151,6	30,32	101,99
0,159	30,46	152,4	30,48	99,94
0,158	30,23	153,7	30,74	98,35
0,157	30,00	153,5	30,7	97,72
0,159	30,46	150,1	30,02	101,47
0,163	31,38	154,1	30,82	101,83
0,156	29,77	149,7	29,94	99,43
0,155	29,54	151,3	30,26	97,62
0,164	31,61	153,8	30,76	102,78
			$\bar{X}$ =	100,03
			SD=	1,88

Hasil Uji Keseragaman Kandungan Tablet Buccoadhesive Formula III

Batch 1

Absorbansi	C sampel	W sampel	C teoritis	Kadar (%)
0,157	30,00	152	30,4	98,69
0,166	32,07	157,1	31,42	102,08
0,161	30,92	155,1	31,02	99,69
0,161	30,92	155,6	31,12	99,37
0,162	31,15	159,8	31,96	97,48
0,158	30,23	153,2	30,64	98,67
0,155	29,54	147,6	29,52	100,07
0,161	30,92	160,4	32,08	96,39
0,162	31,15	154,2	30,84	101,01
0,165	31,84	151,9	30,38	104,82
			$\bar{X}$ =	99,83
			SD=	2,40

Hasil Uji Keseragaman Kandungan Tablet Buccoadhesive Formula IV

Batch 1

Absorbansi	C sampel	W sampel	C teoritis	Kadar (%)
0,154	29,31	150,6	30,12	97,31
0,158	30,23	152,4	30,48	99,18
0,162	31,15	151,8	30,36	102,61
0,159	30,46	151,2	30,24	100,73
0,163	31,38	153,3	30,66	102,36
0,161	30,92	153,9	30,78	100,46
0,157	30,00	152,9	30,58	98,11
0,157	30,00	150,3	30,06	99,80
0,162	31,15	154,1	30,82	101,08
0,155	29,54	150,9	30,18	97,88
			$\bar{X}$ =	99,95
			SD=	1,84

Hasil Uji Keseragaman Kandungan Tablet Buccoadhesive Formula I

Batch 2

Absorbansi	C sampel	W sampel	C teoritis	Kadar (%)
0,158	30,23	153	30,6	98,80
0,159	30,46	152,1	30,42	100,14
0,156	29,77	151,1	30,22	98,51
0,159	30,46	153	30,6	99,55
0,162	31,15	152,7	30,54	102,01
0,157	30,00	151,8	30,36	98,82
0,159	30,46	151,1	30,22	100,80
0,157	30,00	150,8	30,16	99,47
0,159	30,46	152,8	30,56	99,68
0,161	30,92	153,8	30,76	100,53
			$\bar{X}$ =	99,83
			SD=	1,07

Hasil Uji Keseragaman Kandungan Tablet Buccoadhesive Formula II

Batch 2

Absorbansi	C sampel	W sampel	C teoritis	Kadar (%)
0,155	29,54	151,1	30,22	97,75
0,158	30,23	152,3	30,46	99,25
0,159	30,46	151,6	30,32	100,47
0,153	29,08	149,3	29,86	97,39
0,161	30,92	152,8	30,56	101,19
0,163	31,38	151,9	30,38	103,30
0,159	30,46	150,3	30,06	101,34
0,165	31,84	153,6	30,72	103,66
0,158	30,23	154	30,8	98,15
0,156	29,77	151,1	30,22	98,51
			$\bar{X}$ =	100,10
			SD=	2,25

Hasil Uji Keseragaman Kandungan Tablet Buccoadhesive Formula III

Batch 2

Absorbansi	C sampel	W sampel	C teoritis	Kadar (%)
0,156	29,77	151,9	30,38	97,99
0,16	30,69	152,1	30,42	100,89
0,158	30,23	152,4	30,48	99,18
0,159	30,46	153,9	30,78	98,97
0,16	30,69	152,8	30,56	100,43
0,157	30,00	151,2	30,24	99,21
0,159	30,46	150	30	101,54
0,158	30,23	151,6	30,32	99,71
0,158	30,23	152,2	30,44	99,31
0,159	30,46	151,1	30,22	100,80
			$\bar{X}$ =	99,80
			SD=	1,08

Hasil Uji Keseragaman Kandungan Tablet Buccoadhesive Formula IV

Batch 2

Absorbansi	C sampel	W sampel	C teoritis	Kadar (%)
0,158	30,23	152,7	30,54	98,9893
0,162	31,15	152,8	30,56	101,94
0,155	29,54	149,6	29,92	98,7301
0,159	30,46	152,2	30,44	100,071
0,161	30,92	153,1	30,62	100,988
0,162	31,15	154,3	30,86	100,949
0,155	29,54	153,2	30,64	96,4101
0,157	30,00	150,6	30,12	99,6046
0,159	30,46	151,1	30,22	100,8
0,157	30,00	152,5	30,5	98,3636
			$\bar{X}$ =	99,68
			SD=	1,62

Hasil Uji Keseragaman Kandungan Tablet Buccoadhesive Formula I

Batch 3

Absorbansi	C sampel	W sampel	C teoritis	Kadar (%)
0,157	30,00	149,8	29,96	100,14
0,158	30,23	150,4	30,08	100,50
0,158	30,23	151,2	30,24	99,97
0,156	29,77	152,1	30,42	97,86
0,159	30,46	150,2	30,04	101,40
0,158	30,23	153,6	30,72	98,41
0,157	30,00	151,2	30,24	99,21
0,161	30,92	152,5	30,5	101,39
0,162	31,15	153,8	30,76	101,28
0,156	29,77	150,6	30,12	98,84
			$\bar{X}$ =	99,90
			SD=	1,28

Hasil Uji Keseragaman Kandungan Tablet Buccoadhesive Formula II

Batch 3

Absorbansi	C sampel	W sampel	C teoritis	Kadar (%)
0,158	30,23	152,7	30,54	98,99
0,164	31,61	151,5	30,3	104,34
0,158	30,23	150,6	30,12	100,37
0,16	30,69	150,2	30,04	102,17
0,159	30,46	153,5	30,7	99,22
0,163	31,38	152,9	30,58	102,63
0,163	31,38	151,4	30,28	103,64
0,161	30,92	151,5	30,3	102,05
0,159	30,46	153,6	30,72	99,16
0,161	30,92	152,3	30,46	101,52
			$\bar{X}$=	101,41
			SD=	1,91

Hasil Uji Keseragaman Kandungan Tablet Buccoadhesive Formula III

Batch 3

Absorbansi	C sampel	W sampel	C teoritis	Kadar (%)
0,159	30,46	152,1	30,42	100,14
0,164	31,61	154,4	30,88	102,38
0,157	30,00	151,3	30,26	99,14
0,159	30,46	151,9	30,38	100,27
0,158	30,23	152,5	30,5	99,12
0,165	31,84	152,2	30,44	104,61
0,159	30,46	150,5	30,1	101,20
0,16	30,69	151,8	30,36	101,09
0,162	31,15	151,3	30,26	102,95
0,162	31,15	150,3	30,06	103,64
			$\bar{X}$=	101,45
			SD=	1,88

Hasil Uji Keseragaman Kandungan Tablet Buccoadhesive Formula IV

Batch 3

Absorbansi	C sampel	W sampel	C teoritis	Kadar (%)
0,158	30,23	152,5	30,5	99,12
0,156	29,77	151,7	30,34	98,12
0,158	30,23	154,2	30,84	98,03
0,159	30,46	153,6	30,72	99,16
0,156	29,77	154,6	30,92	96,28
0,156	29,77	153,7	30,74	96,85
0,159	30,46	151,2	30,24	100,73
0,159	30,46	153,4	30,68	99,29
0,157	30,00	152,1	30,42	98,62
0,158	30,23	150,7	30,14	100,30
			$\bar{X}$ =	98,65
			SD=	1,39

LAMPIRAN C

HASIL UJI KESERAGAMAN UKURAN TABLET

***BUCCOADHESIVE* ATENOLOL**

Batch 1

No	Formula							
	(I)		(II)		(III)		(IV)	
	Diameter (mm)	Tebal (mm)	Diameter (mm)	Tebal (mm)	Diameter (mm)	Tebal (mm)	Diameter (mm)	Tebal (mm)
1	8,05	2,7	8	2,75	8	2,85	8	2,8
2	8	2,75	8	2,75	8,05	2,9	8	2,7
3	8	2,7	8	2,7	8	2,8	8	2,75
4	8	2,75	8	2,7	8,1	2,85	8	2,75
5	8	2,7	8	2,75	8	2,8	8,05	2,8
6	8	2,7	8	2,7	8	2,8	8	2,7
7	8	2,75	8	2,75	8	2,85	8	2,7
8	7,95	2,8	8	2,75	8,1	2,8	8	2,8
9	8	2,7	8	2,7	8	2,85	8	2,7
10	8	2,75	8	2,7	8,05	2,9	7,95	2,7
11	8	2,75	8	2,7	8	2,8	8	2,8
12	8	2,75	8	2,8	7,95	2,95	7,9	2,7
13	8	2,7	7,95	2,75	7,95	2,7	8	2,75
14	7,95	2,65	8	2,8	8,05	2,75	8	2,75
15	8	2,65	8	2,85	8	2,85	8	2,8
16	8	2,75	8	2,7	8	2,9	8	2,7
17	8	2,8	8	2,75	8	2,95	7,95	2,85
18	7,95	2,7	7,9	2,75	8	2,9	8	2,7
19	8	2,7	7,9	2,7	8	2,85	7,95	2,75
20	8	2,8	8	2,75	8	2,9	7,9	2,8
$\bar{X}$	8,00	2,73	7,99	2,74	8,01	2,85	7,99	2,75
SD	0,02	0,04	0,03	0,04	0,04	0,06	0,04	1,00

Batch 2

No	Formula							
	(I)		(II)		(III)		(IV)	
	Diameter (mm)	Tebal (mm)	Diameter (mm)	Tebal (mm)	Diameter (mm)	Tebal (mm)	Diameter (mm)	Tebal (mm)
1	7,9	2,75	8	2,7	7,9	2,8	8	2,8
2	7,9	2,7	8	2,7	8	2,85	7,95	2,7
3	8	2,75	8	2,75	8	2,85	8	2,7
4	8	2,7	7,9	2,7	8	2,9	8	2,75
5	8	2,7	7,95	2,8	7,95	2,75	8	2,7
6	8	2,7	8	2,75	8	2,9	7,9	2,75
7	8	2,8	8	2,7	8	2,85	8	2,7
8	8	2,75	8,05	2,75	7,9	2,8	7,9	2,75
9	7,95	2,75	8	2,7	7,9	2,8	8,1	2,7
10	8	2,75	7,95	2,7	8	2,9	7,9	2,7
11	8	2,7	8	2,7	8	2,8	8	2,8
12	7,9	2,8	8	2,75	8	2,85	8	2,75
13	8	2,8	7,9	2,8	8	2,8	7,9	2,8
14	7,9	2,7	8	2,8	8	2,85	8	2,75
15	8	2,75	7,95	2,7	8	2,8	8	2,75
16	8	2,8	8	2,7	7,95	2,8	7,95	2,7
17	7,9	2,75	7,9	2,75	8,05	2,9	8	2,7
18	8	2,75	8	2,7	8	2,85	7,95	2,7
19	8	2,8	8	2,7	8,05	2,95	7,9	2,75
20	7,95	2,7	8,05	2,7	8	2,8	8	2,8
$\bar{X}$	7,97	2,75	7,98	2,73	7,99	2,84	7,97	2,74
SD	0,04	0,04	0,04	0,04	0,04	0,05	0,05	0,04

Batch 3

No	Formula							
	(I)		(II)		(III)		(IV)	
	Diameter (mm)	Tebal (mm)	Diameter (mm)	Tebal (mm)	Diameter (mm)	Tebal (mm)	Diameter (mm)	Tebal (mm)
1	8	2,75	8	2,7	8	2,9	7,8	2,7
2	8	2,7	8	2,75	7,95	2,85	7,9	2,65
3	7,95	2,75	7,9	2,8	8	2,8	8,05	2,75
4	7,95	2,7	8	2,7	8	2,8	8	2,8
5	8	2,8	7,95	2,8	7,9	2,75	7,95	2,75
6	8	2,75	7,9	2,75	7,95	2,8	8	2,75
7	8	2,75	8	2,8	8	2,85	8	2,8
8	8	2,75	8	2,8	8,05	2,9	7,95	2,7
9	8	2,8	8,05	2,75	7,9	2,75	8	2,75
10	7,9	2,7	8	2,7	8	2,7	8	2,75
11	7,95	2,8	8	2,7	8	2,85	7,9	2,7
12	8	2,8	7,95	2,7	8	2,85	7,95	2,7
13	8	2,75	8	2,8	8	2,85	8	2,75
14	8	2,8	8	2,75	7,95	2,9	8	2,8
15	7,95	2,8	8	2,75	7,9	2,95	7,95	2,75
16	8	2,75	7,9	2,7	8	2,9	8	2,7
17	8	2,8	8	2,8	7,9	2,85	8	2,8
18	7,9	2,7	7,95	2,75	8,05	2,95	8,05	2,75
19	8	2,7	8	2,8	8	2,95	8	2,7
20	7,95	2,7	7,95	2,8	7,8	2,8	8,05	2,75
$\bar{X}$	7,98	2,75	7,98	2,76	7,97	2,85	7,98	2,74
SD	0,03	0,04	0,04	0,04	0,06	0,07	0,06	0,04

LAMPIRAN D

HASIL UJI KEKERASAN TABLET *BUCCOADHESIVE*

ATENOLOL

Batch 1

No.	Kekerasan Tablet Atenolol (kp)			
	Formula I	**Formula II**	**Formula III**	**Formula IV**
1	7,2	6,2	4,7	5,2
2	6,8	6,1	5,7	5,2
3	6,9	6,3	5,2	5,7
4	6,8	6,4	5,3	5,3
5	7,1	6,2	4,8	5,8
6	6,6	6,3	5,7	5,5
7	6,6	5,9	4,9	6,1
8	6,8	6,1	5,8	5,9
9	6,7	5,9	4,9	5,5
10	6,3	6,1	5,8	5,7
$\bar{X} \pm$ SD	6,73 $\pm$ 0,22	6,14 $\pm$ 0,17	5,34 $\pm$ 0,42	5,63 $\pm$ 0,29

Batch 2

No.	Kekerasan Tablet Atenolol (kp)			
	Formula I	**Formula II**	**Formula III**	**Formula IV**
1	6,7	6,7	6,1	5,5
2	6,5	6,2	6,7	5,2
3	6,8	6,1	6,1	5,2
4	6,8	6,8	5,9	5,1
5	6,9	6,8	6,4	5,6
6	7,0	6,5	6,1	5,5
7	6,9	6,1	6,5	5,4
8	7,2	6,9	6,2	5,6
9	7,1	6,5	6,1	5,2
10	6,8	6,6	6,3	5,1
$\bar{X}$ ± SD	6,89 ± 0,2	6,5 ± 0,3	6,26 ± 0,25	5,32 ± 0,2

Batch 3

No.	Kekerasan Tablet Atenolol (kp)			
	Formula I	**Formula II**	**Formula III**	**Formula IV**
1	4,9	5,4	4,3	4,7
2	4,8	5,7	4,5	4,6
3	5,1	5,6	4,5	4,6
4	4,9	5,1	4,2	4,7
5	4,8	4,9	4,4	4,2
6	5,1	5.1	4,6	4,6
7	5,3	4,8	4,2	4,8
8	5,1	4,7	4,3	4,2
9	5,0	5,3	4,5	4,5
10	5,2	5,5	4,1	4,7
$\bar{X}$ ± SD	5,03 ± 0,17	5,2 ± 0,38	4,36 ± 0,17	4,54 ± 0,21

LAMPIRAN E

HASIL UJI KERAPUHAN TABLET *BUCCOADHESIVE*

ATENOLOL

Formula	Replikasi	Berat awal (gram)	Berat akhir (gram)	Kerapuhan (%)	$\bar{X} \pm$ SD
I	1	3,09	3,07	0,65	0,69 ± 0,09
	2	3,80	3,77	0,79	
	3	3,15	3,13	0,63	
II	1	3,08	3,06	0,65	0,65 ± 0,008
	2	3,14	3,12	0,64	
	3	3,07	3,05	0,65	
III	1	3,13	3,11	0,63	0,74 ± 0,18
	2	3,15	3,13	0,63	
	3	3,18	3,15	0,94	
IV	1	3,12	3,09	0,96	0,75 ± 0,19
	2	3,18	3,16	0,63	
	3	3,06	3,04	0,65	

Contoh perhitungan :

Formula I (replikasi 1) :

Berat awal = 3,09 (W_0)

Berat akhir = 3,07 (W)

% Kerapuhan = $[(W_0\text{-}W) / W_0] \times 100\ \%$

= [(3,09-3,07) / 3,09] x 100 %

= 0,65 %

LAMPIRAN F

HASIL UJI INDEKS PENGEMBANGAN TABLET *BUCCOADHESIVE* ATENOLOL

Hasil uji indeks pengembangan tablet *buccoadhesive* formula I *batch* 1

Waktu (jam)	Berat awal (miligram)	Berat akhir (miligram)	Indeks Pengembangan (%)
0,5	151,2	220,8	46,03
1	153,8	258,9	68,34
2	150,6	275,1	82,67
3	150,7	296,1	96,48
4	153,4	309,3	101,63
5	152,1	359,4	136,29
6	153,9	395,7	157,12

Contoh perhitungan :

Formula I (*batch* 1)

Berat awal = 151,2 mg (W_1)

Berat akhir = 220,8 mg (W_2)

% Indeks Pengembangan = $\frac{W2-W1}{W1}$ x 100 %

= $\frac{220,8-151,2}{151,2}$ x 100 %

= 46,03 %

Hasil uji indeks pengembangan tablet *buccoadhesive* formula II *batch* 1

Waktu (jam)	Berat awal (miligram)	Berat akhir (miligram)	Indeks Pengembangan (%)
0,5	152,3	210,5	38,21
1	152,3	252,5	65,79
2	152,5	279,5	83,28
3	153,1	319,7	108,82
4	151,5	321,1	111,95
5	150,4	328,6	118,48
6	152,1	364,1	139,38

Hasil uji indeks pengembangan tablet *buccoadhesive* formula III *batch* 1

Waktu (jam)	Berat awal (miligram)	Berat akhir (miligram)	Indeks Pengembangan (%)
0,5	149,2	257,4	72,52
1	150,6	306,9	103,78
2	151,8	368,2	142,56
3	150,3	386,5	157,15
4	153,2	439,7	187,01
5	151,7	442,8	191,89
6	153,7	469,2	205,27

Hasil uji indeks pengembangan tablet *buccoadhesive* formula IV *batch* 1

Waktu (jam)	Berat awal (miligram)	Berat akhir (miligram)	Indeks Pengembangan (%)
0,5	154,4	219,4	42,10
1	153,9	238,7	55,10
2	153,5	301,6	96,48
3	150,1	299,2	99,33
4	153,2	389,5	134,66
5	151,3	362,1	139,33
6	152,3	387,1	154,17

Hasil uji indeks pengembangan tablet *buccoadhesive* formula I *batch* 2

Waktu (jam)	Berat awal (miligram)	Berat akhir (miligram)	Indeks Pengembangan (%)
0,5	150,7	231,8	53,82
1	149,6	241,9	61,70
2	150,5	254,5	69,10
3	150,2	284,2	89,21
4	149,7	306	104,41
5	150,9	347,2	130,09
6	149,6	393,2	162,83

Hasil uji indeks pengembangan tablet *buccoadhesive* formula II *batch* 2

Waktu (jam)	Berat awal (miligram)	Berat akhir (miligram)	Indeks Pengembangan (%)
0,5	152,5	207,1	35,80
1	152,3	222,7	46,22
2	151,2	265,5	75,60
3	153,7	314,5	104,62
4	153,6	332	116,15
5	151,6	349,3	130,41
6	153,5	376,7	145,41

Hasil uji indeks pengembangan tablet *buccoadhesive* formula III *batch* 2

Waktu (jam)	Berat awal (miligram)	Berat akhir (miligram)	Indeks Pengembangan (%)
0,5	151,8	242,1	59,49
1	151,3	248,2	64,04
2	152,1	275,6	81,20
3	151,5	300,3	98,22
4	154,8	387,7	150,45
5	150,3	398,1	164,87
6	150,7	434,5	188,32

Hasil uji indeks pengembangan tablet *buccoadhesive* formula IV *batch* 2

Waktu (jam)	Berat awal (miligram)	Berat akhir (miligram)	Indeks Pengembangan (%)
0,5	150,1	228,6	52,30
1	153,3	247,9	61,71
2	151,7	308,3	103,23
3	151,9	328,8	116,46
4	150,1	353,5	135,51
5	150,6	364,1	141,77
6	152,8	401,1	162,50

Hasil uji indeks pengembangan tablet *buccoadhesive* formula I *batch* 3

Waktu (jam)	Berat awal (miligram)	Berat akhir (miligram)	Indeks Pengembangan (%)
0,5	150,6	210,6	39,84
1	151,4	217,7	43,79
2	153,3	255,6	66,73
3	152,2	288,1	89,29
4	150,6	301,6	100,27
5	149,6	335,6	124,33
6	151,4	381,2	151,78

Hasil uji indeks pengembangan tablet *buccoadhesive* formula II *batch* 3

Waktu (jam)	Berat awal (miligram)	Berat akhir (miligram)	Indeks Pengembangan (%)
0,5	154,2	205,7	33,40
1	152,4	216,8	42,26
2	150,9	269,7	78,73
3	152,7	305,4	100
4	151,6	324,5	114,05
5	151,7	334,4	120,44
6	154,1	372,1	141,47

Hasil uji indeks pengembangan tablet *buccoadhesive* formula III *batch* 3

Waktu (jam)	Berat awal (miligram)	Berat akhir (miligram)	Indeks Pengembangan (%)
0,5	153,5	206,3	34,40
1	152,1	254,5	67,32
2	150,6	286,5	90,24
3	151,3	295,4	95,24
4	151,1	325,6	115,49
5	152,3	383	151,48
6	153,6	442,1	187,83

Hasil uji indeks pengembangan tablet *buccoadhesive* formula IV *batch* 3

Waktu (jam)	Berat awal (miligram)	Berat akhir (miligram)	Indeks Pengembangan (%)
0,5	150,8	198,3	31,50
1	154,1	230,4	49,51
2	154,9	250,1	61,46
3	152,4	289,8	90,16
4	151,4	304,9	101,39
5	152,3	309,6	103,28
6	153,6	397,9	159,05

LAMPIRAN G

HASIL UJI LAMA PEREKATAN TABLET *BUCCOADHESIVE*

ATENOLOL

Formula	Replikasi	Lama Perekatan Di Mukosa Pada Jam						Keterangan
		1	2	3	4	5	6	
I	1	(+)	(+)	(+)	(+)	(+)	(+)	Merekat selama 6 jam
	2	(+)	(+)	(+)	(+)	(+)	(+)	
	3	(+)	(+)	(+)	(+)	(+)	(+)	
II	1	(+)	(+)	(+)	(+)	(+)	(+)	Merekat selama 6 jam
	2	(+)	(+)	(+)	(+)	(+)	(+)	
	3	(+)	(+)	(+)	(+)	(+)	(+)	
III	1	(+)	(+)	(+)	(+)	**(-)**	**(-)**	Merekat selama 4 jam
	2	(+)	(+)	(+)	(+)	(+)	**(-)**	
	3	(+)	(+)	(+)	(+)	**(-)**	**(-)**	
IV	1	(+)	(+)	(+)	(+)	(+)	(+)	Merekat selama 6 jam
	2	(+)	(+)	(+)	(+)	(+)	(+)	
	3	(+)	(+)	(+)	(+)	(+)	(+)	

Keterangan :

(+) : Masih merekat pada mukosa

(-) : Terlepas dari mukosa

LAMPIRAN H

HASIL UJI PH PERMUKAAN TABLET *BUCCOADHESIVE* ATENOLOL

Formula	Replikasi	pH permukaan	$\bar{X} \pm$ SD
I	1	6,3	6,3 ± 0
	2	6,3	
	3	6,3	
II	1	5,9	6,1 ± 0,2
	2	6,3	
	3	6,1	
III	1	6,5	6,43 ± 0,12
	2	6,5	
	3	6,3	
IV	1	6,3	6,3 ± 0
	2	6,3	
	3	6,3	

LAMPIRAN I

UJI F KURVA BAKU (UJI KESAMAAN REGRESI) DALAM METANOL

Replikasi 1

Konsentrasi	Absorbansi	x^2	y^2	xy
15,48	0,098	239,6304	0,0096	1,517
23,22	0,112	539,1684	0,0125	2,6006
30,96	0,142	958,5216	0,0202	4,3963
38,7	0,186	1497,69	0,0346	7,1982
46,44	0,219	2156,6736	0,0480	10,1704
	Σ	5391,684	0,1249	25,8826

Replikasi 2

Konsentrasi	Absorbansi	x^2	y^2	xy
15,3	0,089	234,09	0,0079	1,3617
22,95	0,13	526,7025	0,0169	2,9835
30,6	0,161	936,36	0,0259	4,9266
38,25	0,196	1463,0625	0,0384	7,497
45,9	0,222	2106,81	0,0493	10,1898
	Σ	5267,025	0,1384	26,9586

Replikasi 3

Konsentrasi	Absorbansi	x^2	y^2	xy
15,48	0,087	239,6304	0,0076	1,3468
23,22	0,113	539,1684	0,0128	2,6239
30,96	0,139	958,5216	0,0193	4,3034
38,7	0,179	1497,69	0,032	6,9273
46,44	0,214	2156,6736	0,0458	9,9382
	Σ	5391,684	0,1175	25,1395

Replikasi	$\sum x^2$	$\sum y^2$	$\sum xy$	N	Residual SS	Residual DF
1	5391,684	0,1249	25,8826	5	0,00062	3
2	5267,025	0,1384	26,9586	5	0,00046	3
3	5391,684	0,1175	25,1395	5	0,00028	3
					0,00136	9
Σ	16050,393	0,3808	77,9807		0,00194	11

Contoh Perhitungan :

$SS_1 = \sum y_1 - [(\Sigma xy_1)^2 / \Sigma x_1]$

$= 0,1249 - (25,8826^2 / 5391,6840)$

$= 0,00062$

$SSc = \Sigma y_c - [(\Sigma xy_c)^2 / \Sigma x_c]$

$= 0,3808 - (77,9807^2 / 16050,3930)$

$= 0,0019$

$SSp = Ssi1 + Ssi2 + Ssi3$

$= 0,00062 + 0,00046 + 0,00028$

$= 0,00136$

$F_{hitung} = (SSc - SSp/k-1)/(SSp/Df_p)$

$= (0,0019 - 0,0014/3-1) / (0,0014/ 9)$

$=1,92$

$F_{hitung} = 1,92 < F_{tabel\ 0,05\ (2:9)} = 4,26$

LAMPIRAN J

UJI F KURVA BAKU (UJI KESAMAAN REGRESI) DALAM LARUTAN DAPAR FOSFAT ISOTONIS pH 6,8

Replikasi 1

Konsentrasi	Absorbansi	x^2	y^2	xy
5,04	0,045	25,4016	0,002	0,2268
30,24	0,167	914,4576	0,0279	5,0501
50,4	0,255	2540,16	0,065	12,852
80,64	0,335	6502,8096	0,1122	27,0144
100,8	0,513	10160,64	0,2632	51,7104
		20143,4688	0,4703	96,8537

Replikasi 2

Konsentrasi	Absorbansi	x^2	y^2	xy
5,1	0,057	26,01	0,0032	0,2907
30,6	0,192	936,36	0,0369	5,8752
51	0,284	2601	0,0807	14,484
81,6	0,474	6658,56	0,2247	38,6784
102	0,515	10404	0,2652	52,53
		20625,93	0,6107	111,8583

Replikasi 3

Konsentrasi	Absorbansi	x^2	y^2	xy
5,1	0,068	26,01	0,0046	0,3468
30,6	0,177	936,36	0,0313	5,4162
51	0,268	2601	0,0718	13,668
81,6	0,373	6658,56	0,1391	30,4368
102	0,511	10404	0,2611	52,122
		20625,93	0,508	101,9898

Replikasi	$\sum x^2$	$\sum y^2$	$\sum xy$	N	Residual SS	Residual DF
1	20143,4688	0,4703	96,8537	5	0,0046	3
2	20625,93	0,6107	111,8583	5	0,004	3
3	20625,93	0,508	101,9898	5	0,0037	3
					0,0124	9
Σ	61395,3288	1,589	310,7018		0,0167	11

$F_{hitung} = 1,55 \quad < F_{tabel\ 0,05\ (2:9)} = 4,26$

LAMPIRAN K

HASIL UJI AKURASI DAN PRESISI TABLET *BUCCOADHESIVE* ATENOLOL DALAM METANOL

Replikasi	%	Abs	C (ppm)	C Teoritis (ppm)	% Perolehan kembali	
1	80	0,132	24,24	24,12	100,5	$\bar{X}$ =
2	80	0,134	24,7	24,24	101,9	100,65
3	80	0,131	24,01	24,12	99,544	SD = 1,19
						KV= 1,18
1	100	0,161	30,92	30,36	101,85	$\bar{X}$ =
2	100	0,158	30,23	30,12	100,37	101.11
3	100	0,16	30,69	30,36	101,09	SD = 0,74
						KV = 0,73
1	120	0,186	36,68	36,48	100,56	$\bar{X}$ =
2	120	0,186	36,68	36,12	101,56	100,16
3	120	0,182	35,76	36,36	98,354	SD = 1,64
						KV= 1,64

Contoh perhitungan :

Absorbansi = 0,132 → y = 0,0268 + 4,34 . 10^{-3}X

Konsentrasi = 24,24 ppm

Konsentrasi teoritis = 24,12 ppm

% Perolehan Kembali = $\frac{\text{Konsentrasi}}{\text{Konsentrasi teoritis}}$ x 100 %

= $\frac{24,24}{24,12}$ x 100 %

= 100,5 %

LAMPIRAN L

HASIL UJI AKURASI DAN PRESISI TABLET *BUCCOADHESIVE* ATENOLOL DALAM LARUTAN DAPAR FOSFAT ISOTONIS pH 6,8

Replikasi	Abs	C (ppm)	C Teoritis (ppm)	% Perolehan kembali	
1	0,086	10,12	10,04	100,79	$\bar{X}$ = 100,61
2	0,087	10,35	10,22	101,24	SD = 0,74
3	0,086	10,12	10,14	99,80	KV = 0,73
1	0,261	49,88	50,20	99,36	$\bar{X}$ = 99,79
2	0,265	50,79	51,10	99,39	SD = 0,72
3	0,266	51,02	50,70	100,62	KV = 0,72
1	0,487	101,23	100,40	100,82	$\bar{X}$ = 100,64
2	0,491	102,14	102,20	99,94	SD = 0,64
3	0,493	102,59	101,40	101,17	KV= 0,63

LAMPIRAN M

HASIL UJI PENETAPAN KADAR TABLET *BUCCOADHESIVE* ATENOLOL

Formula	Repli-kasi	Absor-bansi	C sampel (µg/mL)	C teoritis (µg/mL)	Kadar (%)	$\bar{X} \pm$ SD
I	1	0,163	31,38	30,34	103,4	102,63 ± 0,97
	2	0,163	31,38	30,5	102,9	
	3	0,16	30,69	30,22	101,6	
II	1	0,154	29,31	30,04	97,57	97,99 ± 0,68
	2	0,155	29,54	30,26	97,62	
	3	0,156	29,77	30,14	98,77	
III	1	0,158	30,23	30,42	99,38	99,56 ± 0,7
	2	0,161	30,92	30,82	100,3	
	3	0,159	30,46	30,78	98,97	
IV	1	0,162	31,15	30,3	102,8	102,38 ± 0,44
	2	0,161	30,92	30,28	102,1	
	3	0,161	30,92	30,32	102	

Contoh perhitungan :

Formula I (rep. 1)

Absorbansi = 0,163 → y = 0,0268 + 4,34 . 10^{-3}X

Konsentrasi sampel = 31,38 ppm

Konsentrasi teoritis = 30,34 ppm

% Kadar $= \frac{\text{Konsentrasi sampel}}{\text{Konsentrasi teoritis}} \times 100\ \%$

$= \frac{31,38}{30,34} \times 100\ \%$

$= 103,43\ \%$

LAMPIRAN N

HASIL UJI PELEPASAN *IN-VITRO* TABLET *BUCCOADHESIVE* ATENOLOL

Hasil Uji Pelepasan *In-vitro* Tablet *Buccoadhesive* Formula I

t (jam)	Replikasi									Qt rata-rata	SD
	1			2			3				
	Abs	Cn' (ppm)	Qt (µg/cm^2)	Abs	Cn' (ppm)	Qt (µg/cm^2)	Abs	Cn' (ppm)	Qt (µg/cm^2)		
0,25	0,158	26,48	1588,68	0,155	25,80	1547,78	0,157	26,25	1575,05	1570,50	20,82
0,5	0,225	41,70	2502,02	0,229	42,61	2556,55	0,227	42,15	2529,28	2529,28	27,26
0,75	0,255	48,52	2910,98	0,25	47,38	2842,82	0,254	48,29	2897,35	2883,72	36,07
1	0,279	53,97	3238,15	0,278	53,74	3224,52	0,281	54,42	3265,41	3242,69	20,82
2	0,316	62,38	3742,53	0,319	63,06	3783,43	0,323	63,97	3837,95	3787,97	47,87
3	0,34	67,83	4069,70	0,349	69,87	4192,39	0,347	69,42	4165,12	4142,40	64,42
4	0,373	75,33	4519,55	0,375	75,78	4546,82	0,379	76,69	4601,34	4555,90	41,65
5	0,424	86,91	5214,78	0,425	87,14	5228,41	0,429	88,05	5282,94	5242,05	36,07
6	0,455	93,96	5637,37	0,457	94,41	5664,64	0,454	93,73	5623,74	5641,92	20,82

Contoh perhitungan :

Absorbansi = 0,158 → y = 0,0414 + 4,4 . 10^{-3}X

Qt = Cn' x 60 mL = 26,48 x 60 = 1588,68 µg/mL

Hasil Uji Pelepasan *In-vitro* Tablet *Buccoadhesive* Formula II

t (jam)	Replikasi									Qt rata-rata	SD
	1			2			3				
	Abs	Cn' (ppm)	Qt (µg/cm^2)	Abs	Cn' (ppm)	Qt (µg/cm^2)	Abs	Cn' (ppm)	Qt (µg/cm^2)		
0,25	0,145	23,52	1411,46	0,147	23,98	1438,73	0,146	23,75	1425,10	1425,10	13,63
0,5	0,219	40,34	2420,23	0,223	41,25	2474,76	0,222	41,02	2461,12	2452,04	28,38
0,75	0,228	42,38	2542,92	0,236	44,20	2651,97	0,232	43,29	2597,44	2597,44	54,53
1	0,254	48,29	2897,35	0,253	48,06	2883,72	0,248	46,93	2815,56	2865,54	43,82
2	0,301	58,97	3538,05	0,304	59,65	3578,95	0,306	60,1	3606,21	3574,40	34,31
3	0,323	63,97	3837,95	0,318	62,83	3769,79	0,324	64,19	3851,59	3819,78	43,82
4	0,364	73,28	4396,86	0,36	72,37	4342,34	0,366	73,74	4424,13	4387,78	41,65
5	0,402	81,91	4914,88	0,398	81,01	4860,35	0,401	81,69	4901,25	4892,16	28,38
6	0,434	89,19	5351,10	0,43	88,28	5296,57	0,431	88,5	5310,21	5319,29	28,38

Hasil Uji Pelepasan *In-vitro* Tablet *Buccoadhesive* Formula III

t (jam)	Replikasi									Qt rata-rata	SD
	1			2			3				
	Abs	Cn' (ppm)	Qt (µg/cm^2)	Abs	Cn' (ppm)	Qt (µg/cm^2)	Abs	Cn' (ppm)	Qt (µg/cm^2)		
0,25	0,204	36,93	2215,75	0,202	36,47	2188,49	0,197	35,34	2120,33	2174,85	49,15
0,5	0,232	43,29	2597,44	0,232	43,29	2597,44	0,237	44,43	2665,60	2620,16	39,35
0,75	0,248	46,93	2815,56	0,251	47,61	2856,45	0,246	46,47	2788,29	2820,10	34,31
1	0,334	66,47	3987,91	0,331	65,78	3947,01	0,335	66,69	4001,54	3978,82	28,38
2	0,392	79,64	4778,56	0,394	80,10	4805,82	0,387	78,51	4710,40	4764,93	49,15
3	0,405	82,60	4955,78	0,408	83,28	4996,67	0,409	83,51	5010,30	4987,58	28,38
4	0,441	90,78	5446,53	0,445	91,68	5501,05	0,448	92,37	5541,95	5496,51	47,87
5	0,461	95,32	5719,17	0,466	96,46	5787,33	0,464	96	5760,06	5755,52	34,31
6	0,478	99,18	5950,91	0,482	100,09	6005,44	0,479	99,41	5964,54	5973,63	28,38

Hasil Uji Pelepasan *In-vitro* Tablet *Buccoadhesive* Formula IV

t (jam)	Replikasi									Qt rata-rata	SD
	1			2			3				
	Abs	Cn' (ppm)	Qt (µg/cm^2)	Abs	Cn' (ppm)	Qt (µg/cm^2)	Abs	Cn' (ppm)	Qt (µg/cm^2)		
0,25	0,154	25,57	1534,15	0,152	25,11	1506,89	0,149	24,43	1465,99	1502,34	34,31
0,5	0,225	41,70	2502,02	0,226	41,93	2515,65	0,224	41,47	2488,39	2502,02	13,63
0,75	0,242	45,56	2733,76	0,239	44,88	2692,87	0,245	46,24	2774,66	2733,76	40,90
1	0,285	55,33	3319,94	0,281	54,42	3265,41	0,286	55,56	3333,57	3306,31	36,07
2	0,312	61,47	3688,00	0,316	62,38	3742,53	0,312	61,47	3688,00	3706,18	31,48
3	0,331	65,78	3947,01	0,337	67,15	4028,80	0,333	66,24	3974,27	3983,36	41,65
4	0,372	75,10	4505,92	0,369	74,42	4465,02	0,368	74,19	4451,39	4474,11	28,38
5	0,418	85,55	5132,99	0,416	85,10	5105,73	0,416	85,1	5105,73	5114,82	15,74
6	0,446	91,91	5514,69	0,447	92,14	5528,32	0,441	90,78	5446,53	5496,51	43,82

LAMPIRAN O

ANALISA DESAIN FAKTORIAL INDEKS PENGEMBANGAN

Response 1 Indeks Pengembangan
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	4317.35	3	1439.12	36.89	< 0.0001	significant
A-Na-Alginat	*2110.65*	*1*	*2110.65*	*54.10*	*< 0.0001*	
B-Karbopol 940	*1904.48*	*1*	*1904.48*	*48.81*	*0.0001*	
AB	*302.21*	*1*	*302.21*	*7.75*	*0.0238*	
Pure Error	312.12	8	39.02			
Cor Total	4629.47	11	*2110.65*			

The Model F-value of 36.89 implies the model is significant. There is onlya 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.

Final Equation in Terms of Coded Factors:

Indeks Pengembangan =

+162.93

+13.26 * A

-12.60 * B

-5.02 * A * B

LAMPIRAN P

ANALISA DESAIN FAKTORIAL LAMA PEREKATAN

Response 2 Lama Perekatan
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	6.25	3	2.08	25.00	0.0002	significant
A-Na-Alginat	*2.08*	*1*	*2.08*	*25.00*	*0.0011*	
B-Karbopol 940	*2.08*	*1*	*2.08*	*25.00*	*0.0011*	
AB	*2.08*	*1*	*2.08*	*25.00*	*0.0011*	
Pure Error	0.67	8	0.083			
Cor Total	6.92	11				

The Model F-value of 25.00 implies the model is significant. There is only a 0.02% 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.

Final Equation in Terms of Coded Factors:

Lama Perekatan =

+5.58

-0.42 * A

+0.42 * B

+0.42 * A * B

LAMPIRAN Q

ANALISA DESAIN FAKTORIAL PH PERMUKAAN

Response 3 pH Permukaan
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	0.17	3	0.057	4.25	0.0452	significant
A-Na-Alginat	*0.083*	*1*	*0.083*	*6.25*	*0.0369*	
B-Karbopol 940	*0.083*	*1*	*0.083*	*6.25*	*0.0369*	
AB	*3.333E-003*	*1*	*3.333E-003*	*0.25*	*0.6305*	
Pure Error	0.11	8	0.013			
Cor Total	0.28	11				

The Model F-value of 4.25 implies the model is significant. There is only a 4.52% 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.

Final Equation in Terms of Coded Factors:

pH Permukaan =

+6.28

+0.083 * A

-0.083 * B

+0.017 * A * B

LAMPIRAN R

ANALISA DESAIN FAKTORIAL PELEPASAN *IN-VITRO*

Response 4 Pelepasan In-vitro
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	5979.05	3	1993.02	31.74	< 0.0001	significant
A-Na-Alginat	*1165.06*	*1*	*1165.06*	*18.56*	*0.0026*	
B-Karbopol 940	*4090.51*	*1*	*4090.51*	*65.15*	*< 0.0001*	
AB	*723.48*	*1*	*723.48*	*11.52*	*0.0094*	
Pure Error	502.29	8	62.79			
Cor Total	6481.34	11				

Model F-value of 31.74 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.

Final Equation in Terms of Coded Factors:

Pelepasan In-vitro =

+598.74

+9.85 * A

-18.46 * B

-7.76 * A * B

LAMPIRAN S

FORMULA OPTIMUM BERDASARKAN METODE *DESIGN EXPERT* ®

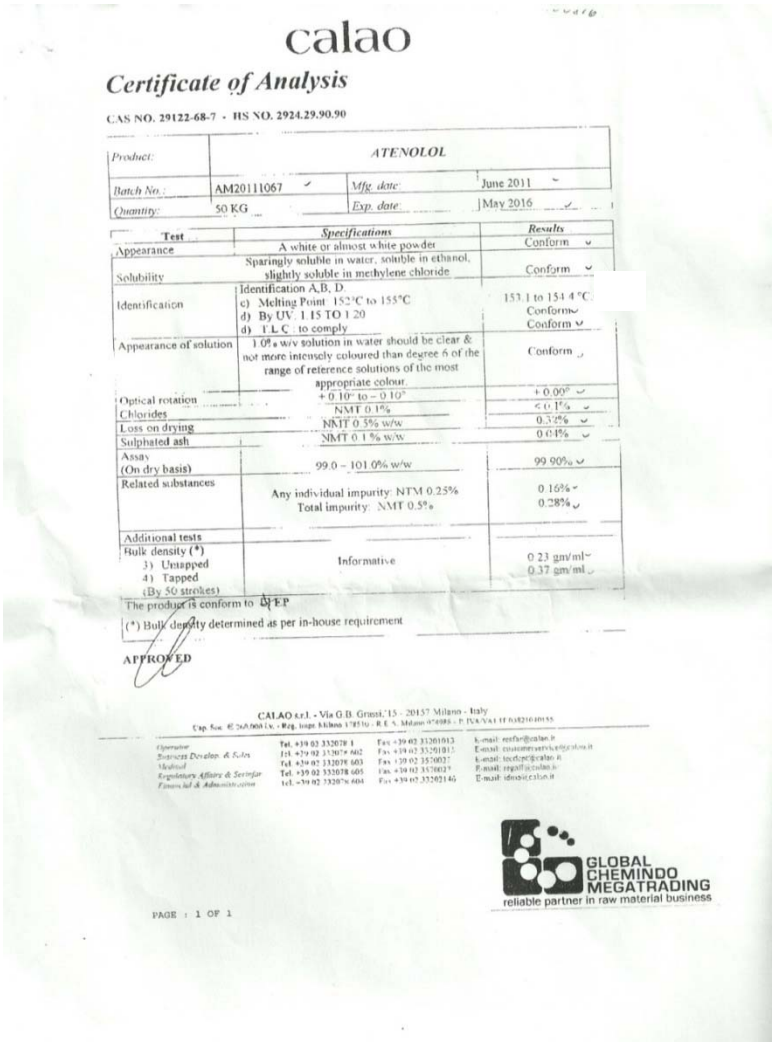
Solution Number	Na-Alginat	Karbopol 940	Indeks Pengembangan	Lama Perekatan	pH Permukaan	Pelepasan *In-Vitro*	Desirability	
1	-0.73	-0.62	158.912	5.8138	6.28255	599.616	1.000	Selected
2	-1.00	-1.00	157.244	6	6.3	599.583	1.000	
3	1.00	1.00	158.573	6	6.3	582.364	1.000	
4	-0.90	-0.30	153.415	5.94583	6.23783	593.313	1.000	
5	-0.76	-0.08	153.49	5.89331	6.22717	592.188	1.000	
6	-0.91	-1.00	158.89	5.92415	6.30582	601.16	1.000	
7	0.07	0.99	151.077	5.99391	6.20804	580.68	1.000	
8	-0.83	-0.28	154.267	5.90913	6.24115	593.899	1.000	
9	-0.53	0.27	153.231	5.85671	6.21443	589.663	1.000	
10	-0.01	0.26	159.47	5.69677	6.26038	593.771	1.000	
11	0.04	0.47	157.459	5.7692	6.24784	590.372	1.000	
12	-0.76	0.08	152.192	5.90693	6.21271	590.291	1.000	
13	0.33	0.68	157.607	5.82227	6.25779	587.709	1.000	
14	-0.75	-0.56	157.898	5.83972	6.27459	598.421	1.000	
15	-0.48	0.32	153.297	5.85265	6.21404	589.264	1.000	
16	-0.15	0.51	154.965	5.82492	6.22762	588.496	1.000	
17	-0.17	0.52	154.628	5.83238	6.22485	588.221	1.000	
18	0.20	0.93	152.893	5.96505	6.22516	582.086	1.000	
19	0.22	0.66	156.749	5.82801	6.2486	587.564	1.000	
20	0.67	0.79	159.196	5.85577	6.28238	586.584	1.000	

21	-0.23	0.67	152.182	5.89459	6.20551	585.28	1.000
22	-0.70	-0.02	153.847	5.87136	6.22693	592.101	1.000
23	0.53	0.91	156.102	5.94136	6.25985	583.46	1.000
24	-0.57	-0.12	156.494	5.80044	6.24665	594.761	1.000
25	-0.04	0.77	152.916	5.90666	6.21589	584.426	1.000
26	-0.45	-0.08	157.837	5.75088	6.25342	595.544	1.000
27	-0.89	-0.06	151.668	5.95049	6.21561	590.728	1.000
28	0.79	0.92	158.169	5.93879	6.28437	583.938	1.000
29	-0.22	0.42	155.216	5.81049	6.22872	589.588	1.000
30	0.17	0.74	155.195	5.87503	6.23783	585.701	1.000
31	-0.54	-0.03	156.039	5.80301	6.24088	593.811	1.000
32	-0.65	0.15	152.976	5.87428	6.21558	590.383	1.000
33	-0.63	-0.50	159.272	5.77005	6.2778	599.315	1.000
34	-0.10	0.52	155.313	5.81954	6.23076	588.589	1.000

LAMPIRAN T

SERTIFIKAT ANALISIS BAHAN

ATENOLOL



calao

Certificate of Analysis

CAS NO. 29122-68-7 - HS NO. 2924.29.90.90

Product:	*ATENOLOL*		
Batch No.:	AM20111067	*Mfg. date:*	June 2011
Quantity:	50 KG	*Exp. date:*	May 2016

Test	Specifications	Results
Appearance	A white or almost white powder	Conform
Solubility	Sparingly soluble in water, soluble in ethanol, slightly soluble in methylene chloride	Conform
Identification	Identification A, B, D c) Melting Point: 152°C to 155°C d) By UV: 1.15 TO 1.20 e) T.L.C.: to comply	153.1 to 154.4 °C Conform Conform
Appearance of solution	1.0% w/v solution in water should be clear & not more intensely coloured than degree 6 of the range of reference solutions of the most appropriate colour.	Conform
Optical rotation	+ 0.10° to – 0.10°	+ 0.00°
Chlorides	NMT 0.1%	< 0.1%
Loss on drying	NMT 0.5% w/w	0.32%
Sulphated ash	NMT 0.1 % w/w	0.04%
Assay (On dry basis)	99.0 – 101.0% w/w	99.90%
Related substances	Any individual impurity: NTM 0.25% Total impurity: NMT 0.5%	0.16% 0.28%
Additional tests		
Bulk density (*) 3) Unzapped 4) Tapped (By 50 strokes)	Informative	0.23 gm/ml 0.37 gm/ml

The product is conform to EP

(*) Bulk density determined as per in-house requirement

APPROVED

CALAO s.r.l. - Via G.B. Grassi,15 - 20157 Milano - Italy

GLOBAL CHEMINDO MEGATRADING
reliable partner in raw material business

PAGE : 1 OF 1

SERTIFIKAT ANALISIS BAHAN

Na-ALGINAT

川龙蟒磷制品股份有限公司

Shadong Bio-Technologi
四川龙蟒磷制
Guan zao street 23- block F907
Shanghai china

CERTIFICATE OF ANALYSYS

Product Nama : Sodium Alginate
Other Name : Natii Alginas
Molecular : -
Batch Number : 975-87468-88
Mfg. Date : 01 – 2011
Exp` : 03 – 2014

Identification	Spec	Real
Carateristic	powder	+++
Microbial limit	<200 /g	102 /g
Loss on drying	<15 %	10 %
Sulfated ash	30-36 %	32 %
Ca	<1,5 %	0,9 %
Heavy metal	<20 ppm	9 ppm
Lead	<0,001 %	0,0000045

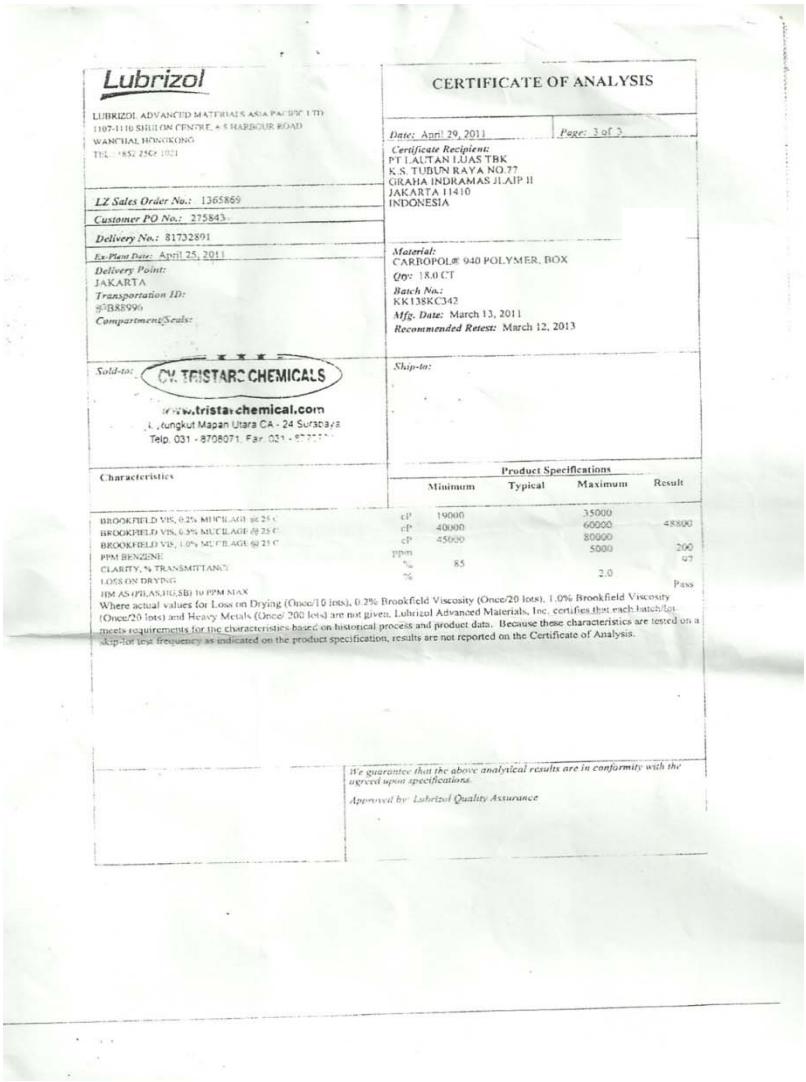
Adds : High tecnologi development Zone Of Yuncheng, Shandong EP Std

Conclusion : We conform that the goods are complied with EP standard

Corector : 磷制品股份

Approver : 品股份有限公司

SERTIFIKAT ANALISIS BAHAN
KARBOPOL 940



Lubrizol

LUBRIZOL ADVANCED MATERIALS ASIA PACIFIC LTD
1107-1110 SHELL ON CENTRE, 6 5 HARBOUR ROAD
WANCHAI, HONGKONG
TEL: +852 2582 1021

CERTIFICATE OF ANALYSIS

Date: April 29, 2011 *Page:* 3 of 3

Certificate Recipient:
PT LAUTAN LUAS TBK
K.S. TUBUN RAYA NO.77
GRAHA INDRAMAS JLAJP II
JAKARTA 11410
INDONESIA

LZ Sales Order No.: 1365869
Customer PO No.: 275843
Delivery No.: 81732891
Ex-Plant Date: April 25, 2011
Delivery Point:
JAKARTA
Transportation ID:
SP B88996
Compartment/Seals:

Material:
CARBOPOL® 940 POLYMER, BOX
Qty: 18.0 CT
Batch No.:
KK138KC342
Mfg. Date: March 13, 2011
Recommended Retest: March 12, 2013

Sold-to: CV. TRISTARC CHEMICALS
www.tristarchemical.com
Jl. Tungkut Mapan Utara CA - 24 Surabaya
Telp. 031 - 8708071, Fax: 031 - 8721111

Ship-to:

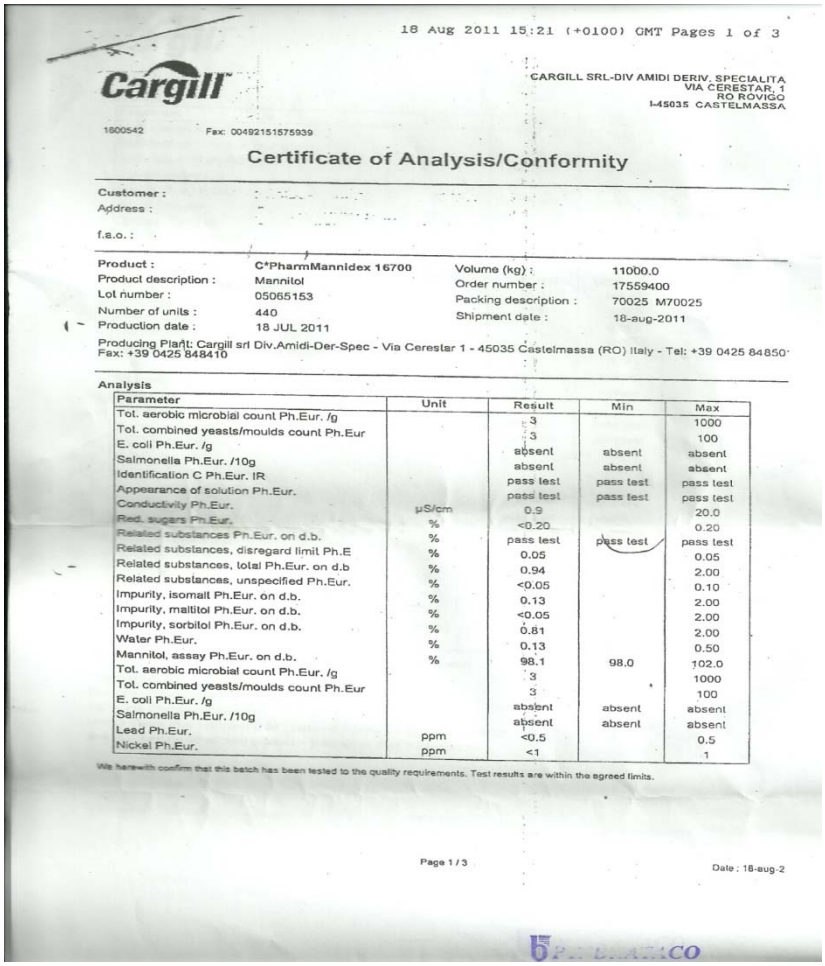
Characteristics		Product Specifications Minimum	Typical	Maximum	Result
BROOKFIELD VIS, 0.2% MUCILAGE @ 25 C	cP	19000		35000	
BROOKFIELD VIS, 0.5% MUCILAGE @ 25 C	cP	40000		60000	48800
BROOKFIELD VIS, 1.0% MUCILAGE @ 25 C	cP	45000		80000	
PPM BENZENE	ppm			5000	200
CLARITY, % TRANSMITTANCE	%	85			97
LOSS ON DRYING	%			2.0	
HM AS (PILAS,HG,SB) 10 PPM MAX					Pass

Where actual values for Loss on Drying (Once/10 lots), 0.2% Brookfield Viscosity (Once/20 lots), 1.0% Brookfield Viscosity (Once/20 lots) and Heavy Metals (Once/ 200 lots) are not given, Lubrizol Advanced Materials, Inc. certifies that each batch/lot meets requirements for the characteristics based on historical process and product data. Because these characteristics are tested on a skip-lot test frequency as indicated on the product specification, results are not reported on the Certificate of Analysis.

We guarantee that the above analytical results are in conformity with the agreed upon specifications.

Approved by: Lubrizol Quality Assurance

SERTIFIKAT ANALISIS BAHAN
MANITOL



18 Aug 2011 15:21 (+0100) GMT Pages 1 of 3

Cargill

CARGILL SRL-DIV AMIDI DERIV. SPECIALITA
VIA CERESTAR, 1
RO ROVIGO
I-45035 CASTELMASSA

1600542 Fax: 00492151575939

Certificate of Analysis/Conformity

Customer :
Address :

f.a.o. :

Product :	C*PharmMannidex 16700	Volume (kg) :	11000.0
Product description :	Mannitol	Order number :	17559400
Lot number :	05065153	Packing description :	70025 M70025
Number of units :	440	Shipment date :	18-aug-2011
Production date :	18 JUL 2011		

Producing Plant: Cargill srl Div.Amidi-Der-Spec - Via Cerestar 1 - 45035 Castelmassa (RO) Italy - Tel: +39 0425 84850 Fax: +39 0425 848410

Analysis

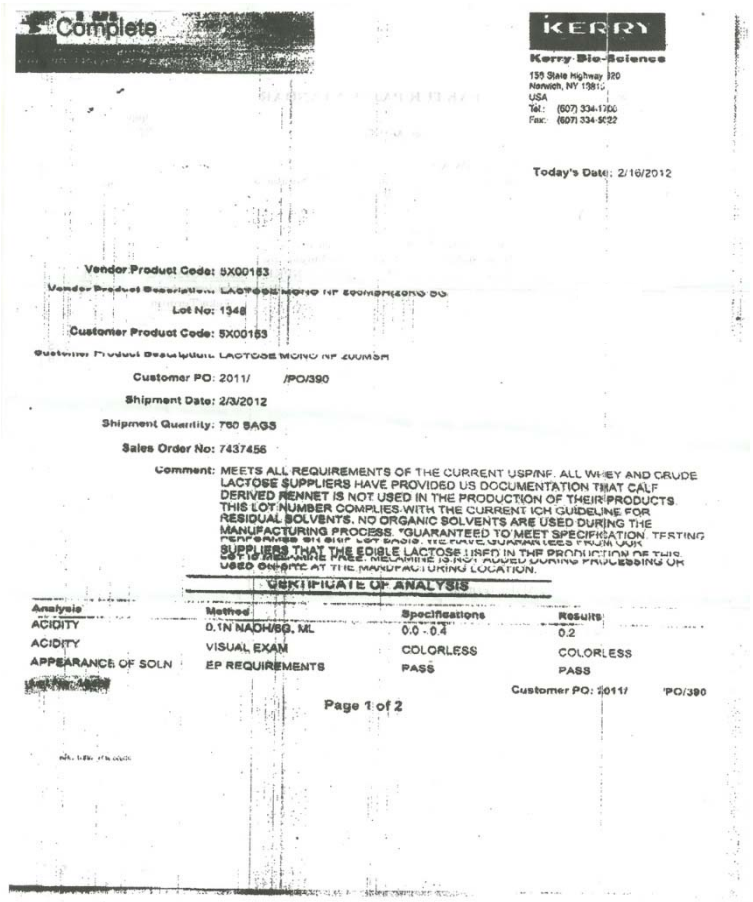
Parameter	Unit	Result	Min	Max
Tot. aerobic microbial count Ph.Eur. /g		3		1000
Tot. combined yeasts/moulds count Ph.Eur		3		100
E. coli Ph.Eur. /g		absent	absent	absent
Salmonella Ph.Eur. /10g		absent	absent	absent
Identification C Ph.Eur. IR		pass test	pass test	pass test
Appearance of solution Ph.Eur.		pass test	pass test	pass test
Conductivity Ph.Eur.	µS/cm	0.9		20.0
Red. sugars Ph.Eur.	%	<0.20		0.20
Related substances Ph.Eur. on d.b.	%	pass test	pass test	pass test
Related substances, disregard limit Ph.E	%	0.05		0.05
Related substances, total Ph.Eur. on d.b	%	0.94		2.00
Related substances, unspecified Ph.Eur.	%	<0.05		0.10
Impurity, isomalt Ph.Eur. on d.b.	%	0.13		2.00
Impurity, maltitol Ph.Eur. on d.b.	%	<0.05		2.00
Impurity, sorbitol Ph.Eur. on d.b.	%	0.81		2.00
Water Ph.Eur.	%	0.13		0.50
Mannitol, assay Ph.Eur. on d.b.	%	98.1	98.0	102.0
Tot. aerobic microbial count Ph.Eur. /g		3		1000
Tot. combined yeasts/moulds count Ph.Eur		3		100
E. coli Ph.Eur. /g		absent	absent	absent
Salmonella Ph.Eur. /10g		absent	absent	absent
Lead Ph.Eur.	ppm	<0.5		0.5
Nickel Ph.Eur.	ppm	<1		1

We herewith confirm that this batch has been tested to the quality requirements. Test results are within the agreed limits.

Page 1 / 3

Date : 18-aug-2

SERTIFIKAT ANALISIS BAHAN
LAKTOSA



Complete

KERRY

Kerry Bio-Science

139 State Highway 320
Norwich, NY 13815
USA
Tel.: (607) 334-1700
Fax: (607) 334-9022

Today's Date: 2/16/2012

Vendor Product Code: 5X00163

Vendor Product Description: LACTOSE MONO NF 200MSH

Lot No: 1348

Customer Product Code: 5X00163

Customer Product Description: LACTOSE MONO NF 200MSH

Customer PO: 2011/ /PO/390

Shipment Date: 2/3/2012

Shipment Quantity: 750 SAGS

Sales Order No: 7437456

Comment: MEETS ALL REQUIREMENTS OF THE CURRENT USP/NF. ALL WHEY AND CRUDE LACTOSE SUPPLIERS HAVE PROVIDED US DOCUMENTATION THAT CALF DERIVED RENNET IS NOT USED IN THE PRODUCTION OF THEIR PRODUCTS. THIS LOT NUMBER COMPLIES WITH THE CURRENT ICH GUIDELINE FOR RESIDUAL SOLVENTS. NO ORGANIC SOLVENTS ARE USED DURING THE MANUFACTURING PROCESS. *GUARANTEED TO MEET SPECIFICATION. TESTING PERFORMED ON SHIP LOT SAMPLE. WE HAVE GUARANTEES FROM OUR SUPPLIERS THAT THE EDIBLE LACTOSE USED IN THE PRODUCTION OF THIS LOT IS BSE/TSE FREE. MELAMINE IS NOT ALLOWED DURING PROCESSING OR USED ON SITE AT THE MANUFACTURING LOCATION.

CERTIFICATE OF ANALYSIS

Analysis	Method	Specifications	Results
ACIDITY	0.1N NaOH/SO, ML	0.0 - 0.4	0.2
ACIDITY	VISUAL EXAM	COLORLESS	COLORLESS
APPEARANCE OF SOLN	EP REQUIREMENTS	PASS	PASS

Customer PO: 2011/ /PO/390

Page 1 of 2

LAMPIRAN U

TABEL UJI R

Tabel r

N	Taraf Signif		N	Taraf Signif		N	Taraf Signif	
	5%	1%		5%	1%		5%	1%
3	0,997	0,999	27	0,381	0,487	55	0,266	0,345
4	0,950	0,990	28	0,374	0,478	60	0,254	0,330
5	0,878	0,959	29	0,367	0,470	65	0,244	0,317
6	0,811	0,917	30	0,361	0,463	70	0,235	0,306
7	0,754	0,874	31	0,355	0,456	75	0,227	0,296
8	0,707	0,834	32	0,349	0,449	80	0,220	0,286
9	0,666	0,798	33	0,344	0,442	85	0,213	0,278
10	0,632	0,765	34	0,339	0,436	90	0,207	0,270
11	0,602	0,735	35	0,334	0,430	95	0,202	0,263
12	0,576	0,708	36	0,329	0,424	100	0,195	0,256
13	0,553	0,684	37	0,325	0,418	125	0,176	0,230
14	0,532	0,661	38	0,320	0,413	150	0,159	0,210
15	0,514	0,641	39	0,316	0,408	175	0,148	0,194
16	0,497	0,623	40	0,312	0,403	200	0,138	0,181
17	0,482	0,606	41	0,308	0,398	300	0,113	0,148
18	0,468	0,590	42	0,304	0,393	400	0,098	0,128
19	0,456	0,575	43	0,301	0,389	500	0,088	0,115
20	0444	0,561	44	0,297	0,384	600	0,080	0,105
21	0,433	0,549	45	0,294	0,380	700	0,074	0,097
22	0,423	0,537	46	0,291	0,376	800	0,070	0,091
23	0,413	0,526	47	0,288	0,372	900	0,065	0,086
24	0,404	0,515	48	0,284	0,368	1000	0,062	0,081
25	0,396	0,505	49	0,281	0,364			
26	0,388	0,496	50	0,279	0,361			

LAMPIRAN V

TABEL UJI F

Table of F-statistics α = 0.05

df2\df1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	22	24	26	28	30	35	40	45	50	60	70	80	100	200	500	1000
3	10.13	9.55	9.28	9.12	9.01	8.94	8.89	8.85	8.81	8.79	8.76	8.74	8.73	8.71	8.70	8.69	8.68	8.67	8.67	8.66	8.65	8.64	8.63	8.62	8.62	8.60	8.59	8.59	8.58	8.57	8.57	8.56	8.55	8.54	8.53	8.53
4	7.71	6.94	6.59	6.39	6.26	6.16	6.09	6.04	6.00	5.96	5.94	5.91	5.89	5.87	5.86	5.84	5.83	5.82	5.81	5.80	5.79	5.77	5.76	5.75	5.75	5.73	5.72	5.71	5.70	5.69	5.68	5.67	5.66	5.65	5.64	5.63
5	6.61	5.79	5.41	5.19	5.05	4.95	4.88	4.82	4.77	4.74	4.70	4.68	4.66	4.64	4.62	4.60	4.59	4.58	4.57	4.56	4.54	4.53	4.52	4.50	4.50	4.48	4.46	4.45	4.44	4.43	4.42	4.42	4.41	4.39	4.37	4.37
6	5.99	5.14	4.76	4.53	4.39	4.28	4.21	4.15	4.10	4.06	4.03	4.00	3.98	3.96	3.94	3.92	3.91	3.90	3.88	3.87	3.86	3.84	3.83	3.82	3.81	3.79	3.77	3.76	3.75	3.74	3.73	3.72	3.71	3.69	3.68	3.67
7	5.59	4.74	4.35	4.12	3.97	3.87	3.79	3.73	3.68	3.64	3.60	3.57	3.55	3.53	3.51	3.49	3.48	3.47	3.46	3.44	3.43	3.41	3.40	3.39	3.38	3.36	3.34	3.33	3.32	3.30	3.29	3.29	3.27	3.25	3.24	3.23
8	5.32	4.46	4.07	3.84	3.69	3.58	3.50	3.44	3.39	3.35	3.31	3.28	3.26	3.24	3.22	3.20	3.19	3.17	3.16	3.15	3.13	3.12	3.10	3.09	3.08	3.06	3.04	3.03	3.02	3.01	2.99	2.99	2.97	2.95	2.94	2.93
9	5.12	4.26	3.86	3.63	3.48	3.37	3.29	3.23	3.18	3.14	3.10	3.07	3.05	3.03	3.01	2.99	2.97	2.96	2.95	2.94	2.92	2.90	2.89	2.87	2.86	2.84	2.83	2.81	2.80	2.79	2.78	2.77	2.76	2.73	2.72	2.71
10	4.96	4.10	3.71	3.48	3.33	3.22	3.14	3.07	3.02	2.98	2.94	2.91	2.89	2.86	2.85	2.83	2.81	2.80	2.79	2.77	2.75	2.74	2.72	2.71	2.70	2.68	2.66	2.65	2.64	2.62	2.61	2.60	2.59	2.56	2.55	2.54
11	4.84	3.98	3.59	3.36	3.20	3.09	3.01	2.95	2.90	2.85	2.82	2.79	2.76	2.74	2.72	2.70	2.69	2.67	2.66	2.65	2.63	2.61	2.59	2.58	2.57	2.55	2.53	2.52	2.51	2.49	2.48	2.47	2.46	2.43	2.42	2.41
12	4.75	3.89	3.49	3.26	3.11	3.00	2.91	2.85	2.80	2.75	2.72	2.69	2.66	2.64	2.62	2.60	2.58	2.57	2.56	2.54	2.52	2.51	2.49	2.48	2.47	2.44	2.43	2.41	2.40	2.38	2.37	2.36	2.35	2.32	2.31	2.30
13	4.67	3.81	3.41	3.18	3.03	2.92	2.83	2.77	2.71	2.67	2.63	2.60	2.58	2.55	2.53	2.51	2.50	2.48	2.47	2.46	2.44	2.42	2.41	2.39	2.38	2.36	2.34	2.33	2.31	2.30	2.28	2.27	2.26	2.23	2.22	2.21
14	4.60	3.74	3.34	3.11	2.96	2.85	2.76	2.70	2.65	2.60	2.57	2.53	2.51	2.48	2.46	2.44	2.43	2.41	2.40	2.39	2.37	2.35	2.33	2.32	2.31	2.28	2.27	2.25	2.24	2.22	2.21	2.20	2.19	2.16	2.14	2.14
15	4.54	3.68	3.29	3.06	2.90	2.79	2.71	2.64	2.59	2.54	2.51	2.48	2.45	2.42	2.40	2.38	2.37	2.35	2.34	2.33	2.31	2.29	2.27	2.26	2.25	2.22	2.20	2.19	2.18	2.16	2.15	2.14	2.12	2.10	2.08	2.07
16	4.49	3.63	3.24	3.01	2.85	2.74	2.66	2.59	2.54	2.49	2.46	2.42	2.40	2.37	2.35	2.33	2.32	2.30	2.29	2.28	2.25	2.24	2.22	2.21	2.19	2.17	2.15	2.14	2.12	2.11	2.09	2.08	2.07	2.04	2.02	2.02
17	4.45	3.59	3.20	2.96	2.81	2.70	2.61	2.55	2.49	2.45	2.41	2.38	2.35	2.33	2.31	2.29	2.27	2.26	2.24	2.23	2.21	2.19	2.17	2.16	2.15	2.12	2.10	2.09	2.08	2.06	2.05	2.03	2.02	1.99	1.97	1.97
18	4.41	3.55	3.16	2.93	2.77	2.66	2.58	2.51	2.46	2.41	2.37	2.34	2.31	2.29	2.27	2.25	2.23	2.22	2.20	2.19	2.17	2.15	2.13	2.12	2.11	2.08	2.06	2.05	2.04	2.02	2.00	1.99	1.98	1.95	1.93	1.92
19	4.38	3.52	3.13	2.90	2.74	2.63	2.54	2.48	2.42	2.38	2.34	2.31	2.28	2.26	2.23	2.21	2.20	2.18	2.17	2.16	2.13	2.11	2.10	2.08	2.07	2.05	2.03	2.01	2.00	1.98	1.97	1.96	1.94	1.91	1.89	1.88
20	4.35	3.49	3.10	2.87	2.71	2.60	2.51	2.45	2.39	2.35	2.31	2.28	2.25	2.23	2.20	2.18	2.17	2.15	2.14	2.12	2.10	2.08	2.07	2.05	2.04	2.01	1.99	1.98	1.97	1.95	1.93	1.92	1.91	1.88	1.86	1.85
22	4.30	3.44	3.05	2.82	2.66	2.55	2.46	2.40	2.34	2.30	2.26	2.23	2.20	2.17	2.15	2.13	2.11	2.10	2.08	2.07	2.05	2.03	2.01	2.00	1.98	1.96	1.94	1.92	1.91	1.89	1.88	1.86	1.85	1.82	1.80	1.79
24	4.26	3.40	3.01	2.78	2.62	2.51	2.42	2.36	2.30	2.25	2.22	2.18	2.15	2.13	2.11	2.09	2.07	2.05	2.04	2.03	2.00	1.98	1.97	1.95	1.94	1.91	1.89	1.88	1.86	1.84	1.83	1.82	1.80	1.77	1.75	1.74
26	4.23	3.37	2.98	2.74	2.59	2.47	2.39	2.32	2.27	2.22	2.18	2.15	2.12	2.09	2.07	2.05	2.03	2.02	2.00	1.99	1.97	1.95	1.93	1.91	1.90	1.87	1.85	1.84	1.82	1.80	1.79	1.78	1.76	1.73	1.71	1.70
28	4.20	3.34	2.95	2.71	2.56	2.45	2.36	2.29	2.24	2.19	2.15	2.12	2.09	2.06	2.04	2.02	2.00	1.99	1.97	1.96	1.93	1.91	1.90	1.88	1.87	1.84	1.82	1.80	1.79	1.77	1.75	1.74	1.73	1.69	1.67	1.66
30	4.17	3.32	2.92	2.69	2.53	2.42	2.33	2.27	2.21	2.16	2.13	2.09	2.06	2.04	2.01	1.99	1.98	1.96	1.95	1.93	1.91	1.89	1.87	1.85	1.84	1.81	1.79	1.77	1.76	1.74	1.72	1.71	1.70	1.66	1.64	1.63
35	4.12	3.27	2.87	2.64	2.49	2.37	2.29	2.22	2.16	2.11	2.08	2.04	2.01	1.99	1.96	1.94	1.92	1.91	1.89	1.88	1.85	1.83	1.82	1.80	1.79	1.76	1.74	1.72	1.70	1.68	1.66	1.65	1.63	1.60	1.57	1.57
40	4.08	3.23	2.84	2.61	2.45	2.34	2.25	2.18	2.12	2.08	2.04	2.00	1.97	1.95	1.92	1.90	1.89	1.87	1.85	1.84	1.81	1.79	1.77	1.76	1.74	1.72	1.69	1.67	1.66	1.64	1.62	1.61	1.59	1.55	1.53	1.52
45	4.06	3.20	2.81	2.58	2.42	2.31	2.22	2.15	2.10	2.05	2.01	1.97	1.94	1.92	1.89	1.87	1.86	1.84	1.82	1.81	1.78	1.76	1.74	1.73	1.71	1.68	1.66	1.64	1.63	1.60	1.59	1.57	1.55	1.51	1.49	1.48
50	4.03	3.18	2.79	2.56	2.40	2.29	2.20	2.13	2.07	2.03	1.99	1.95	1.92	1.89	1.87	1.85	1.83	1.81	1.80	1.78	1.76	1.74	1.72	1.70	1.69	1.66	1.63	1.61	1.60	1.58	1.56	1.54	1.52	1.48	1.46	1.45
60	4.00	3.15	2.76	2.53	2.37	2.25	2.17	2.10	2.04	1.99	1.95	1.92	1.89	1.86	1.84	1.82	1.80	1.78	1.76	1.75	1.72	1.70	1.68	1.66	1.65	1.62	1.59	1.57	1.56	1.53	1.52	1.50	1.48	1.44	1.41	1.40
70	3.98	3.13	2.74	2.50	2.35	2.23	2.14	2.07	2.02	1.97	1.93	1.89	1.86	1.84	1.81	1.79	1.77	1.75	1.74	1.72	1.70	1.67	1.65	1.64	1.62	1.59	1.57	1.55	1.53	1.50	1.49	1.47	1.45	1.40	1.37	1.36
80	3.96	3.11	2.72	2.49	2.33	2.21	2.13	2.06	2.00	1.95	1.91	1.88	1.84	1.82	1.79	1.77	1.75	1.73	1.72	1.70	1.68	1.65	1.63	1.62	1.60	1.57	1.54	1.52	1.51	1.48	1.46	1.45	1.43	1.38	1.35	1.34
100	3.94	3.09	2.70	2.46	2.31	2.19	2.10	2.03	1.97	1.93	1.89	1.85	1.82	1.79	1.77	1.75	1.73	1.71	1.69	1.68	1.65	1.63	1.61	1.59	1.57	1.54	1.52	1.49	1.48	1.45	1.43	1.41	1.39	1.34	1.31	1.30
200	3.89	3.04	2.65	2.42	2.26	2.14	2.06	1.98	1.93	1.88	1.84	1.80	1.77	1.74	1.72	1.69	1.67	1.66	1.64	1.62	1.60	1.57	1.55	1.53	1.52	1.48	1.46	1.43	1.41	1.39	1.36	1.35	1.32	1.26	1.22	1.21
500	3.86	3.01	2.62	2.39	2.23	2.12	2.03	1.96	1.90	1.85	1.81	1.77	1.74	1.71	1.69	1.66	1.64	1.62	1.61	1.59	1.56	1.54	1.52	1.50	1.48	1.45	1.42	1.40	1.38	1.35	1.32	1.30	1.28	1.21	1.16	1.14
1000	3.85	3.00	2.61	2.38	2.22	2.11	2.02	1.95	1.89	1.84	1.80	1.76	1.73	1.70	1.68	1.65	1.63	1.61	1.60	1.58	1.55	1.53	1.51	1.49	1.47	1.43	1.41	1.38	1.36	1.33	1.31	1.29	1.26	1.19	1.13	1.11