

LAMPIRAN

Lampiran 1. Surat keterangan hasil determinasi daun sirih



KEMENTERIAN KESEHATAN REPUBLIK INDONESIA
BADAN KEBIJAKAN PEMBANGUNAN KESEHATAN
BALAI BESAR PENELITIAN DAN PENGEMBANGAN
TANAMAN OBAT DAN OBAT TRADISIONAL
Jalan Lawu No.11 Tawamangu, Karanganyar, Jawa Tengah 57792
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Nomor : KM.04.02/2/576/2022
Lampiran : -
Hal : Keterangan Determinasi

07 Maret 2022

Yth. Dekan Fakultas Farmasi Universitas Setia Budi
Jalan Letjend. Sutoyo Mojosongo Solo 57127

Merujuk surat Saudara nomor: 274/D3-04/14.02.2022 tanggal 14 Februari 2022 hal permohonan determinasi, dengan ini kami sampaikan bahwa hasil determinasi sampel tanaman sebagai berikut:

Nama Pemohon : Resy Budi Ramadanti
Nama Sampel : Sirih
Sampel : Tanaman Segar
Spesies : *Piper betle* L.
Sinonim : *Piper betel* Blanco
Familia : Piperaceae
Penanggung Jawab : Nina Kurnianingrum, S.Si.

Hasil determinasi tersebut hanya mencakup sampel tanaman yang telah dikirimkan ke B2P2TOOT.

Atas perhatian Saudara, kami sampaikan terima kasih.

Kepala Balai Besar Penelitian
dan Pengembangan Tanaman Obat
dan Obat Tradisional
Tawangmangu,



Akhmad Saikhu, S.K.M., M.Sc.PH.

Tembusan :
-

Lampiran 2. Surat keterangan *ethical clearance*

4/11/22, 2:32 PM

KEPK-RSDM



HEALTH RESEARCH ETHICS COMMITTEE KOMISI ETIK PENELITIAN KESEHATAN

Dr. Moewardi General Hospital
RSUD Dr. Moewardi

ETHICAL CLEARANCE **KELAIKAN ETIK**

Nomor : 472 / IV / HREC / 2022

The Health Research Ethics Committee Dr. Moewardi
Komisi Etik Penelitian Kesehatan RSUD Dr. Moewardi

after reviewing the proposal design, herewith to certify
setelah menilai rancangan penelitian yang diusulkan, dengan ini menyatakan

That the research proposal with topic :
Bahwa usulan penelitian dengan judul

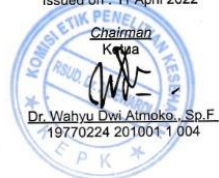
FORMULASI TABLET HISAP EKSTRAK DAUN SIRIH (Piper betle L.) DENGAN METODE GRANULASI BASAH MENGGUNAKAN VARIASI KONSENTRASI GELATIN SEBAGAI BAHAN PENGIKAT

Principal investigator : RESY BUDI RAMADANTI
Peneliti Utama 24185619A

Location of research : UNIVERSITAS SETIA BUDI SURAKARTA
Lokasi Tempat Penelitian

Is ethically approved
Dinyatakan layak etik

Issued on : 11 April 2022



Lampiran 3. Pengolahan simplisia



Daun sirih segar



Proses pengeringan daun sirih



Daun sirih kering



Penyerbukan



Pengayakan serbuk



Proses maserasi



Penguapan dengan rotary evaporator



Ekstrak kental daun sirih

Lampiran 4. Foto susut pengeringan serbuk daun sirih**Replikasi 1****Replikasi 2****Replikasi 3**

Lampiran 5. Perhitungan susut pengeringan serbuk daun sirih

Replikasi 1 = 6%

Replikasi 2 = 6,5%

Replikasi 3 = 6,5%

Rata-rata susut pengeringan = $\frac{6\% + 6,5\% + 6,5\%}{3} = 6,3\%$

Lampiran 6. Foto penetapan kadar air serbuk daun sirih metode sterling bidwell



Lampiran 7. Perhitungan kadar air metode sterling bidwell

$$\% \text{ kadar air} = \frac{\text{Volume air terbaca}}{\text{bobot sampel}} \times 100\%$$

$$\begin{aligned} \text{Replikasi 1} &= \frac{0,9 \text{ ml}}{10 \text{ g}} \times 100\% \\ &= 9\% \end{aligned}$$

$$\begin{aligned} \text{Replikasi 2} &= \frac{0,9 \text{ ml}}{10 \text{ g}} \times 100\% \\ &= 9\% \end{aligned}$$

$$\begin{aligned} \text{Replikasi 3} &= \frac{1 \text{ ml}}{10 \text{ g}} \times 100\% \\ &= 10\% \end{aligned}$$

$$\text{Rata-rata kadar air} = \frac{9\% + 9\% + 10\%}{3} = 9,3\%$$

Lampiran 8. Perhitungan rendemen ekstrak daun sirih

Rendemen ekstrak daun sirih

$$\begin{aligned} & \% \text{ rendemen ekstrak daun sirih} \\ &= \frac{\text{bobot ekstrak}}{\text{bobot serbuk simplisia}} \times 100\% \\ &= \frac{67,8 \text{ g}}{1000 \text{ g}} \times 100\% \\ &= 6,708 \% \end{aligned}$$

Lampiran 9. Foto penetapan kadar air ekstrak daun sirih metode gravimetri



Kruss



Oven



Deksikator

Lampiran 10. Perhitungan penetapan kadar air ekstrak daun sirih metode gravimetri

% Kadar air ekstrak =

$$\frac{\text{bobot awal sebelum dikeringkan} - \text{bobot setelah dikeringkan}}{\text{bobot awal sebelum dikeringkan}} \times 100\%$$

$$\text{Replikasi 1} = \frac{10,1237 \text{ g} - 9,6818 \text{ g}}{10,1237 \text{ g}} \times 100\%$$

$$= 4,36 \%$$

$$\text{Replikasi 2} = \frac{10,2335 \text{ g} - 9,7319 \text{ g}}{10,2335 \text{ g}} \times 100\%$$

$$= 4,90 \%$$

$$\text{Replikasi 3} = \frac{10,2047 \text{ g} - 9,7604 \text{ g}}{10,2047 \text{ g}} \times 100\%$$

$$= 4,35 \%$$

$$\text{Rata-rata \% kadar air ekstrak metode gravimetri} = \frac{4,36\% + 4,90\% + 4,35\%}{3}$$

$$= 4,53\%$$

Lampiran 11. Foto identifikasi kandungan kimia ekstrak daun sirih



Alkaloid



Flavonoid



Tannin



Saponin



Minyak atsiri



Terpenoid

Lampiran 12. Foto hasil uji kadar air granul tablet hisap

Lampiran 13. Perhitungan hasil uji kadar air granul tablet hisap**Formula I**

$$\text{Replikasi 1} = 2\%$$

$$\text{Resplikasi 2} = 1,5\%$$

$$\text{Replikasi 3} = 2\%$$

$$\text{Rata-rata \% kadar air granul} = \frac{2\% + 1,5\% + 2\%}{3} = 1,83\%$$

Formula II

$$\text{Replikasi 1} = 1,5\%$$

$$\text{Resplikasi 2} = 1\%$$

$$\text{Replikasi 3} = 1,5\%$$

$$\text{Rata-rata \% kadar air granul} = \frac{1,5\% + 1\% + 1,5\%}{3} = 1,33\%$$

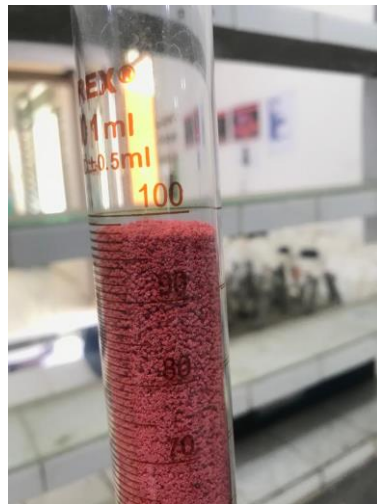
Formula II

$$\text{Replikasi 1} = 1,5\%$$

$$\text{Resplikasi 2} = 1\%$$

$$\text{Replikasi 3} = 1,5\%$$

$$\text{Rata-rata \% kadar air granul} = \frac{1,5\% + 1\% + 1,5\%}{3} = 1,33\%$$

Lampiran 14. Foto hasil uji kompresibilitas granul tablet hisap

Lampiran 15. Perhitungan hasil uji kompresibilitas granul tablet hisap

$$\text{Persen Kompresibilitas} = \frac{V_o - V_t}{V_o} \times 100\%$$

Formula I

$$\text{Replikasi 1} = \frac{100 - 99}{100} \times 100\% = 1\%$$

$$\text{Replikasi 2} = \frac{100 - 99}{100} \times 100\% = 1\%$$

$$\text{Replikasi 3} = \frac{100 - 99}{100} \times 100\% = 1\%$$

$$\text{Rata-rata \% kompresibilitas granul} = \frac{1\% + 1\% + 1\%}{3} = 1\%$$

Formula II

$$\text{Replikasi 1} = \frac{100 - 99}{100} \times 100\% = 1\%$$

$$\text{Replikasi 2} = \frac{100 - 98}{100} \times 100\% = 2\%$$

$$\text{Replikasi 3} = \frac{100 - 98}{100} \times 100\% = 2\%$$

$$\text{Rata-rata \% kompresibilitas granul} = \frac{1\% + 2\% + 2\%}{3} = 1,667\%$$

Formula II

$$\text{Replikasi 1} = \frac{100 - 98}{100} \times 100\% = 2\%$$

$$\text{Replikasi 2} = \frac{100 - 97}{100} \times 100\% = 3\%$$

$$\text{Replikasi 3} = \frac{100 - 97}{100} \times 100\% = 3\%$$

$$\text{Rata-rata \% kompresibilitas granul} = \frac{2\% + 3\% + 3\%}{3} = 2,667\%$$

Lampiran 16. Foto hasil uji waktu alir granul tablet hisap



Lampiran 17. Perhitungan hasil uji waktu alir granul tablet hisap**Formula I**

Replikasi 1 = 6,34 detik

Resplikasi 2 = 6,3 detik

Replikasi 3 = 6,45 detik

Rata-rata % waktu alir granul = $\frac{6,34 + 6,3 + 6,45}{3} = 6,36$ detik

Formula II

Replikasi 1 = 6,08 detik

Resplikasi 2 = 6,05 detik

Replikasi 3 = 6,11 detik

Rata-rata % waktu alir granul = $\frac{6,08 + 6,05 + 6,11}{3} = 6,-8$ detik

Formula II

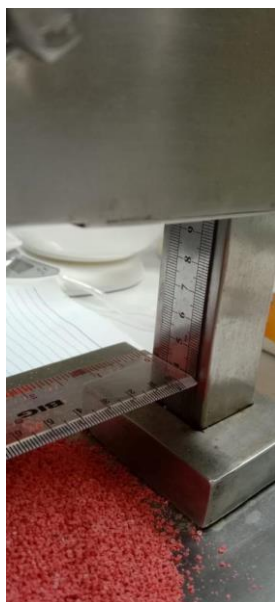
Replikasi 1 = 5,74 detik

Resplikasi 2 = 5,6 detik

Replikasi 3 = 5,7 detik

Rata-rata % waktu alir granul = $\frac{5,74 + 5,6 + 5,7}{3} = 5,68$ detik

Lampiran 18. Foto hasil uji sudut diam granul tablet hisap



Lampiran 19. Perhitungan hasil uji sudut diam granul tablet hisap

$$\tan \alpha = \frac{t}{r}$$

Formula I

$$\text{Replikasi 1} \quad \tan \alpha = \frac{4}{6,5}$$

$$\tan \alpha = 0,615$$

$$\tan \alpha = 31,591$$

$$\text{Replikasi 2} \quad \tan \alpha = \frac{4}{6,525}$$

$$\tan \alpha = 0,6130$$

$$\tan \alpha = 31,508$$

$$\text{Replikasi 3} \quad \tan \alpha = \frac{4}{6,475}$$

$$\tan \alpha = 0,617$$

$$\tan \alpha = 31,674$$

$$\text{Rata-rata sudut diam} = \frac{31,591 + 31,508 + 31,674}{3} = 31,591$$

Formula II

$$\text{Replikasi 1} \quad \tan \alpha = \frac{4}{6,575}$$

$$\tan \alpha = 0,608$$

$$\tan \alpha = 31,299$$

$$\text{Replikasi 2} \quad \tan \alpha = \frac{4}{6,575}$$

$$\tan \alpha = 0,608$$

$$\tan \alpha = 31,299$$

$$\text{Replikasi 3} \quad \tan \alpha = \frac{4}{6,55}$$

$$\tan \alpha = 0,610$$

$$\tan \alpha = 31,383$$

$$\text{Rata-rata sudut diam} = \frac{31,299 + 31,299 + 31,383}{3} = 31,327$$

Formula III

$$\text{Replikasi 1} \quad \tan \alpha = \frac{4}{6,6}$$

$$\tan \alpha = 0,606$$

$$\tan \alpha = 31,215$$

$$\text{Replikasi 2} \quad \tan \alpha = \frac{4}{6,625}$$

$$\tan \alpha = 0,603$$

$$\tan \alpha = 31,089$$

$$\text{Replikasi 3} \quad \tan \alpha = \frac{4}{6,6}$$

$$\tan \alpha = 0,606$$

$$\tan \alpha = 31,215$$

$$\text{Rata-rata sudut diam} = \frac{31,215+31,089+31,215}{3} = 31,173$$

Lampiran 20. Foto mesin cetak tablet



Lampiran 21. Perhitungan uji keseragaman bobot tablet hisap

No	KESERAGAMAN BOBOT (mg)								
	Formula 1			Formula 2			Formula 3		
	1	2	3	1	2	3	1	2	3
1	524. 2	502.8	503. 5	528.9	529.8	530. 9	509.1	530	535.1
2	514. 3	508	520	530	530.8	540	559	533. 5	535.8
3	529. 2	527.1	516	525.9	540.3	528. 6	558.6	530	539
4	509. 7	512.6	515. 7	526.3	530.9	526. 9	556.1	529. 7	540.9
5	509	522.1	515. 1	529.3	535.1	531. 5	556	536. 1	540
6	508. 8	524	515	530.2	540	532. 5	558.8	538. 3	538.7
7	524. 7	501.5	515. 2	528.9	530.1	529. 7	519.1	532	537.9
8	509. 3	540.5	516. 3	531	524.9	528. 7	559.8	536. 3	542
9	512. 7	521.7	509. 6	525.6	527.8	531	519.1	538. 1	540.5
10	527. 3	517.4	507. 8	527.1	526.9	526. 5	520	532. 9	540
11	512. 8	502.9	508. 4	526	528.2	527. 1	521.1	533. 9	538.9
12	502. 9	525.5	517. 2	525.9	524	529. 3	530	530. 9	536.9
13	502. 1	522.5	518	524.5	528.1	527. 9	510	540	539.3
14	525. 8	520.8	516. 7	525.8	525	526. 9	511.2	540. 5	540.2
15	503. 3	505.7	517. 6	523.5	525.8	530	522.1	535. 2	537.8
16	524. 5	520	524. 3	522.8	526.9	528. 7	540.1	534	537
17	540. 9	515.9	508. 3	524.6	529.5	529. 5	540.6	534. 1	538.6
18	526	522.7	515. 7	524.1	530	530. 3	533.1	540. 1	540
19	525	525.6	524	522.5	525.9	530. 7	522	530. 5	537.9
20	526. 1	515.9	512. 6	522.6	523.9	526. 5	530.5	533. 5	540.4
Hasil rata-rata	517. 93	517.7 6	514. 85	526.2 75	529.1 95	529. 66	533.8 15	534. 48	538.8 45

SD	10.7 0	9.85	5.26	2.66	4.64	3.00	18.35	3.51	1.75
CV	0.02 %	0.019 %	0.01 %	0,50%	1.25	0.56 %	3.43%	0.65 %	0.32%
Rata-rata	516.84			528.37			535.71		
5%	490.998 mg – 542.682 mg			501.952 mg – 554.788 mg			508.925 mg – 562.495 mg		
10%	465.156 mg – 568.524 mg			475.533 mg – 581.207 mg			482.139 mg – 589.281 mg		

1. Formula I

Rata-rata keseragaman bobot = 516,84 mg

$$\text{Kolom A (5\%)} = \frac{5}{100} \times 516,84 = 25,842 \text{ mg}$$

$$\text{Batas bawah} = 516,84 \text{ mg} + 25,842 \text{ mg} = 490,998 \text{ mg}$$

$$\text{Batas atas} = 516,84 \text{ mg} - 25,842 \text{ mg} = 542,682 \text{ mg}$$

Jadi, bobot yang memenuhi syarat kolom A adalah tablet dengan bobot antara 490,998 mg - 542,682 mg

$$\text{Kolom B (10\%)} = \frac{10}{100} \times 516,84 = 51,684 \text{ mg}$$

$$\text{Batas bawah} = 516,84 \text{ mg} + 51,684 \text{ mg} = 465,156 \text{ mg}$$

$$\text{Batas atas} = 516,84 \text{ mg} - 51,684 \text{ mg} = 568,524 \text{ mg}$$

Jadi, bobot yang memenuhi syarat kolom B adalah tablet dengan bobot antara 465,156 mg - 568,524 mg.

2. Formula II

Rata-rata keseragaman bobot = 528,37 mg

$$\text{Kolom A (5\%)} = \frac{5}{100} \times 528,37 = 26,418 \text{ mg}$$

$$\text{Batas bawah} = 528,37 \text{ mg} + 26,418 \text{ mg} = 501,952 \text{ mg}$$

$$\text{Batas atas} = 528,37 \text{ mg} - 26,418 \text{ mg} = 554,788 \text{ mg}$$

Jadi, bobot yang memenuhi syarat kolom A adalah tablet dengan bobot antara 501,952 mg - 554,788 mg

$$\text{Kolom B (10\%)} = \frac{10}{100} \times 528,37 = 52,837 \text{ mg}$$

$$\text{Batas bawah} = 528,37 \text{ mg} + 52,837 \text{ mg} = 475,533 \text{ mg}$$

$$\text{Batas atas} = 528,37 \text{ mg} - 52,837 \text{ mg} = 581,207 \text{ mg}$$

Jadi, bobot yang memenuhi syarat kolom B adalah tablet dengan bobot antara 475,533 mg - 581,207 mg

3. Formula III

Rata-rata keseragaman bobot = 535,71 mg

$$\text{Kolom A (5\%)} = \frac{5}{100} \times 535,71 = 26,785 \text{ mg}$$

$$\text{Batas bawah} = 535,71 \text{ mg} + 26,785 \text{ mg} = 508,925 \text{ mg}$$

$$\text{Batas atas} = 535,71 \text{ mg} - 26,785 \text{ mg} = 562,495 \text{ mg}$$

Jadi, bobot yang memenuhi syarat kolom A adalah tablet dengan bobot antara 508,925 mg - 562,495 mg

$$\text{Kolom B (10\%)} = \frac{10}{100} \times 535,71 = 53,571 \text{ mg}$$

$$\text{Batas bawah} = 535,71 \text{ mg} + 53,571 \text{ mg} = 482,139 \text{ mg}$$

$$\text{Batas atas} = 535,71 \text{ mg} - 53,571 \text{ mg} = 589,281 \text{ mg}$$

Jadi, bobot yang memenuhi syarat kolom B adalah tablet dengan bobot antara 482,139 mg - 589,281 mg

Lampiran 22. Foto alat uji kekerasan tablet hisap



Lampiran 23. Perhitungan uji kekerasan tablet hisap

No	KEKERASAN TABLET (kg)								
	Formula 1			Formula 2			Formula 3		
	1	2	3	1	2	3	1	2	3
1	7.7	7.7	7.9	9.3	8.8	9.2	11	9.8	10
2	7.8	7.5	8	9	8.7	9.4	10.7	10	10.4
3	7.9	7.7	7.9	9.2	9.2	9.2	10.4	10.3	10.2
4	7.8	7,4	7.9	8.9	9.1	9.1	10.5	10.5	10.5
5	8.1	7.6	8.1	9	9	9	10.1	9.9	9.8
6	8	8	8	9.5	8.8	9.5	10.3	10.4	10.3
7	7.8	7.6	7.8	9.5	9.1	9.1	10.8	9.8	9.8
8	8	7.6	8.1	9	9	9	10.8	10.3	9.9
9	7.8	7.8	8.2	8.9	8.9	9.4	10.6	10	10.6
10	7.9	7.5	8	9.3	9.3	9.3	10.1	10.4	10.1
11	7.8	7.8	7.8	9	9	9	10	9.9	9.9
12	7.9	7.6	7.9	8.9	9.3	9.3	10.7	10.1	10.7
13	8	8	8.2	9	9	9	10.5	10.4	10.5
14	7.8	7.5	8.1	9.1	9.1	9.1	9.9	10.6	9.8
15	7.8	7.8	7.8	9.3	9.3	9.3	10	10.3	9.8
16	8	7.6	8	8.8	9	9.4	10.5	10.6	10.5
17	8	7.5	8.1	8.9	8.9	8.9	10.4	10	10.4
18	7.7	7.7	8	9.1	9.1	9.1	10	10.1	10
19	8	8	8	9	8.7	9.3	10.2	10	10.2
20	7.8	7.6	7.9	9.3	9.3	9.3	10.6	10	10.6
Rata-Rata	7.88	7.68	7.985	9.1	9.03	9.195	10.405	10.17	10.2

Formula I

$$\text{Rata-rata kekerasan} = \frac{7,88+7,68+7,985}{3} = 7,84 \text{ kg}$$

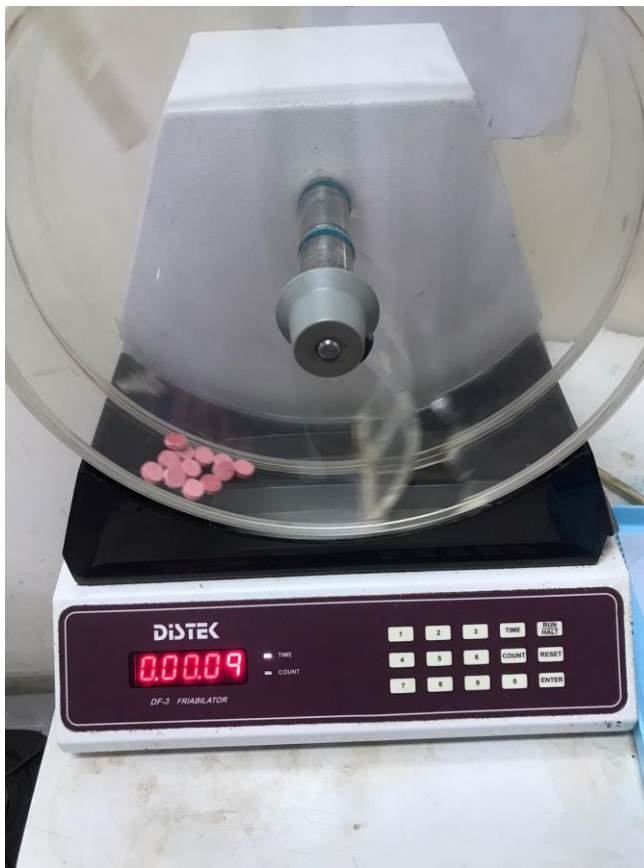
Formula II

$$\text{Rata-rata kekerasan} = \frac{9,1+9,03+9,195}{3} = 9,10 \text{ kg}$$

Formula III

$$\text{Rata-rata kekerasan} = \frac{10,405+10,17+10,02}{3} = 10,19 \text{ kg}$$

Lampiran 24. Foto alat uji kerapuhan tablet hisap



Lampiran 25. Perhitungan uji kerapuhan tablet hisap

$$\% \text{ Kerapuhan} = \frac{W1-W2}{W1} \times 100\%$$

Keterangan: W1= Bobot awal

W2= Bobot setelah uji

1. Formula 1

Replikasi 1: W1 = 6,356 mg

W2 = 6,348 mg

$$\begin{aligned} \% \text{ Kerapuhan} &= \frac{6,356 - 6,348}{6,356} \times 100\% \\ &= 0,17\% \end{aligned}$$

Replikasi 2: W1 = 6,365 mg

W2 = 6,356 mg

$$\begin{aligned} \% \text{ Kerapuhan} &= \frac{6,365 - 6,356}{6,365} \times 100\% \\ &= 0,14\% \end{aligned}$$

Replikasi 3: W1 = 6,360 mg

W2 = 6,353 mg

$$\begin{aligned} \% \text{ Kerapuhan} &= \frac{6,360 - 6,353}{6,360} \times 100\% \\ &= 0,11\% \end{aligned}$$

$$\text{Rata-rata : } \frac{0,17\% + 0,14\% + 0,11\%}{3} = 0,14\%$$

2. Formula 2

Replikasi 1: W1 = 6,3482 mg

W2 = 6,3405 mg

$$\begin{aligned} \% \text{ Kerapuhan} &= \frac{6,3482 - 6,3405}{6,3482} \times 100\% \\ &= 0,12\% \end{aligned}$$

Replikasi 2: W1 = 6,3470 mg

W2 = 6,3393 mg

$$\% \text{ Kerapuhan} = \frac{6,3470 - 6,3393}{6,3470} \times 100\%$$

$$= 0,12\%$$

Replikasi 3: W1 = 6,3451 mg

$$W2 = 6,3398 \text{ mg}$$

$$\% \text{ Kerapuhan} = \frac{6,3451 - 6,3398}{6,3451} \times 100\%$$

$$= 0,08\%$$

$$\text{Rata-rata : } \frac{0,12\% + 0,12\% + 0,08\%}{3} = 0,10\%$$

3. Formula 3

Replikasi 1: W1 = 6,169 mg

$$W2 = 6,167 \text{ mg}$$

$$\% \text{ Kerapuhan} = \frac{6,169 - 6,167}{6,169} \times 100\%$$

$$= 0,03\%$$

Replikasi 2: W1 = 6,160 mg

$$W2 = 6,157 \text{ mg}$$

$$\% \text{ Kerapuhan} = \frac{6,160 - 6,157}{6,160} \times 100\%$$

$$= 0,04\%$$

Replikasi 3: W1 = 6,175 mg

$$W2 = 6,171 \text{ mg}$$

$$\% \text{ Kerapuhan} = \frac{6,175 - 6,171}{6,175} \times 100\%$$

$$= 0,06\%$$

$$\text{Rata-rata : } \frac{0,03\% + 0,04\% + 0,06\%}{3} = 0,04\%$$

Lampiran 26. Perhitungan uji waktu larut tablet hisap

Responden	Waktu alir tablet (detik)		
	Formula 1	Formula 2	Formula 3
1	151	326	500
2	250	330	434
3	264	310	415
4	294	298	411
5	163	290	472
6	290	315	479
7	255	340	472
8	246	300	435
9	323	286	505
10	200	390	480
11	170	388	418
12	190	295	460
13	270	288	481
14	190	345	435
15	180	357	495
16	210	349	445
17	250	385	485
18	198	400	400
19	240	405	425
20	245	370	470
Rata-Rata	228.95	338.35	455.85
SD	47.81	40.53	32.35
CV %	20.88	11.97	7.09

Lampiran 27. Uji responden warna tablet hisap

Responden	Warna		
	Formula 1	Formula 2	Formula 3
1	4	4	5
2	3	3	3
3	4	3	3
4	4	4	4
5	4	4	5
6	4	4	4
7	4	4	4
8	3	3	4
9	4	4	3
10	4	4	3
11	4	4	4
12	3	3	3
13	4	4	4
14	3	3	3
15	4	4	4
16	5	4	3
17	4	4	3
18	5	4	4
19	4	4	3
20	3	3	3
Rata-Rata	3.85	3.7	3.6

Lampiran 28. Uji responden aroma tablet hisap

Responden	Aroma		
	Formula 1	Formula 2	Formula 3
1	4	3	5
2	3	3	3
3	3	3	3
4	4	2	4
5	4	4	5
6	4	5	4
7	4	3	4
8	3	4	4
9	4	4	3
10	4	3	3
11	4	4	4
12	3	4	3
13	4	5	4
14	3	3	3
15	4	4	4
16	4	5	3
17	4	4	3
18	4	4	4
19	4	3	3
20	3	3	3
Rata-Rata	3.7	3.65	3.6

Lampiran 29. Uji responden rasa tablet hisap

Responden	Rasa		
	Formula 1	Formula 2	Formula 3
1	3	4	3
2	5	3	4
3	4	3	4
4	4	4	4
5	3	4	5
6	4	4	4
7	4	4	3
8	4	3	4
9	4	4	3
10	5	4	3
11	4	4	5
12	4	3	3
13	4	4	3
14	4	3	3
15	4	4	3
16	4	4	3
17	4	4	3
18	3	4	4
19	4	4	4
20	5	3	3
Rata-Rata	4	3.7	3.55

Lampiran 30. Perhitungan dosis tablet hisap

- Gelatin (5%) : ($\frac{5}{100} \times 500 \text{ mg}$) = 25 mg x 250 tablet = 6,25 gram
- Gelatin (7,5%) : ($\frac{7,5}{100} \times 500 \text{ mg}$) = 37,5 mg x 250 tablet = 9,375 gram
- Gelatin (10%) : ($\frac{10}{100} \times 500 \text{ mg}$) = 50 mg x 250 tablet = 12,5 gram
- Laktosa (F1) : 366 mg X 250 tablet = 91,5 gram
- Laktosa (F2) : 341 mg X 250 tablet = 85,25 gram
- Laktosa (F3) : 316 mg X 250 tablet = 79 gram
- Aspartam : 50 mg X 250 tablet = 12,5 gram
- Magnesium stearate : 2 mg X 250 tablet = 0,5 gram
- Ekstrak daun sirih : 32 mg X 250 tablet = 8 gram

Lampiran 31. Hasil analistik statistik pengujian waktu alir granul

Tests of Normality						
	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Waktu_alir	.178	9	.200 [*]	.930	9	.477
*. This is a lower bound of the true significance.						
a. Lilliefors Significance Correction						

Test of Homogeneity of Variances					
		Levene Statistic	df1	df2	Sig.
Waktu_alir	Based on Mean	1.698	2	6	.260
	Based on Median	.410	2	6	.681
	Based on Median and with adjusted df	.410	2	4.368	.687
	Based on trimmed mean	1.565	2	6	.284

ANOVA					
Waktu_alir					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.707	2	.354	87.431	.000
Within Groups	.024	6	.004		
Total	.731	8			

Multiple Comparisons						
Dependent Variable: Waktu_alir						
LSD						
(I) formula	(J) formula	Mean Difference (I- J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Formula 1	Formula 2	.28333 [*]	.05193	.002	.1563	.4104
	Formula 3	.68333 [*]	.05193	.000	.5563	.8104
Formula 2	Formula 1	-.28333 [*]	.05193	.002	-.4104	-.1563
	Formula 3	.40000 [*]	.05193	.000	.2729	.5271
Formula 3	Formula 1	-.68333 [*]	.05193	.000	-.8104	-.5563
	Formula 2	-.40000 [*]	.05193	.000	-.5271	-.2729

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

Lampiran 32. Hasil analistik statistik pengujian sudut diam granul

Tests of Normality						
	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Sudut_diam	.187	9	.200 [*]	.954	9	.729
*. This is a lower bound of the true significance.						
a. Lilliefors Significance Correction						

Test of Homogeneity of Variances					
		Levene Statistic	df1	df2	Sig.
Sudut_diam	Based on Mean	.321	2	6	.737
	Based on Median	.169	2	6	.848
	Based on Median and with adjusted df	.169	2	5.092	.849
	Based on trimmed mean	.306	2	6	.747

ANOVA					
Sudut_diam					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.268	2	.134	27.675	.001
Within Groups	.029	6	.005		
Total	.297	8			

Multiple Comparisons						
Dependent Variable: Sudut_diam						
LSD						
(I) formula	(J) formula	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
formula 1	formula 2	.26400*	.05683	.004	.1249	.4031
	formula 3	.41800*	.05683	.000	.2789	.5571
formula 2	formula 1	-.26400*	.05683	.004	-.4031	-.1249
	formula 3	.15400*	.05683	.035	.0149	.2931
formula 3	formula 1	-.41800*	.05683	.000	-.5571	-.2789
	formula 2	-.15400*	.05683	.035	-.2931	-.0149

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

Lampiran 33. Hasil analistik statistik pengujian kekerasan tablet hisap

Tests of Normality						
	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Kekerasan tablet	.185	9	.200*	.906	9	.287
*. This is a lower bound of the true significance.						
a. Lilliefors Significance Correction						

Test of Homogeneity of Variances					
		Levene Statistic	df1	df2	Sig.
Kekerasan tablet	Based on Mean	.964	2	6	.433
	Based on Median	.479	2	6	.641
	Based on Median and with adjusted df	.479	2	4.601	.647
	Based on trimmed mean	.928	2	6	.445

ANOVA					
Kekerasan tablet					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	8.298	2	4.149	187.459	.000
Within Groups	.133	6	.022		
Total	8.431	8			

Multiple Comparisons						
Dependent Variable: kekerasantablet						
LSD						
(I) formula	(J) formula	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Formula 1	Formula 2	-1.26000*	.12147	.000	-1.5572	-.9628
	Formula 3	-2.35000*	.12147	.000	-2.6472	-2.0528
Formula 2	Formula 1	1.26000*	.12147	.000	.9628	1.5572
	Formula 3	-1.09000*	.12147	.000	-1.3872	-.7928
Formula 3	Formula 1	2.35000*	.12147	.000	2.0528	2.6472
	Formula 2	1.09000*	.12147	.000	.7928	1.3872

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

Lampiran 34. Hasil analistik statistik pengujian kerapuhan tablet hisap

Tests of Normality						
	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
kerapuhan	.167	9	.200 [*]	.957	9	.769
*. This is a lower bound of the true significance.						
a. Lilliefors Significance Correction						

Test of Homogeneity of Variances					
		Levene Statistic	df1	df2	Sig.
kerapuhan	Based on Mean	.473	2	6	.645
	Based on Median	.250	2	6	.787
	Based on Median and with adjusted df	.250	2	4.532	.789
	Based on trimmed mean	.454	2	6	.655

ANOVA					
kerapuhan					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.014	2	.007	13.020	.007
Within Groups	.003	6	.001		
Total	.018	8			

Multiple Comparisons						
Dependent Variable: kerapuhan						
LSD						
(I) formula	(J) formula	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Formula 1	Formula 2	.03333	.01925	.134	-.0138	.0804
	Formula 3	.09667*	.01925	.002	.0496	.1438
Formula 2	Formula 1	-.03333	.01925	.134	-.0804	.0138
	Formula 3	.06333*	.01925	.017	.0162	.1104
Formula 3	Formula 1	-.09667*	.01925	.002	-.1438	-.0496
	Formula 2	-.06333*	.01925	.017	-.1104	-.0162

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

Lampiran 35. Hasil analistik statistik organoleptik : Normalitas, Homogenitas dan *One Way* anova

Uji Normalitas Organoleptik

1. Warna tablet hisap

Tests of Normality						
	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Residual for Warna1	.159	20	.200*	.905	20	.050
Residual for Warna2	.167	20	.145	.925	20	.121
Residual for Warna3	.177	20	.100	.914	20	.078
*. This is a lower bound of the true significance.						
a. Lilliefors Significance Correction						

2. Aroma tablet hisap

Tests of Normality						
	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Residual for Aroma1	.167	20	.145	.925	20	.121
Residual for Aroma2	.133	20	.200*	.947	20	.320
Residual for Aroma3	.177	20	.100	.914	20	.078
*. This is a lower bound of the true significance.						
a. Lilliefors Significance Correction						

3. Rasa tablet hisap

Tests of Normality						
	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Residual for Rasa1	.172	20	.123	.919	20	.097
Residual for Rasa2	.167	20	.145	.925	20	.121
Residual for Rasa3	.166	20	.152	.913	20	.074

a. Lilliefors Significance Correction

Uji Homogenitas

Test of Homogeneity of Variances					
		Levene Statistic	df1	df2	Sig.
Warna	Based on Mean	.756	2	57	.474
	Based on Median	.671	2	57	.515
	Based on Median and with adjusted df	.671	2	55.984	.515
	Based on trimmed mean	.724	2	57	.489
Aroma	Based on Mean	1.859	2	57	.165
	Based on Median	1.552	2	57	.221
	Based on Median and with adjusted df	1.552	2	44.620	.223
	Based on trimmed mean	1.729	2	57	.187
Rasa	Based on Mean	1.812	2	57	.173
	Based on Median	1.394	2	57	.256
	Based on Median and with adjusted df	1.394	2	54.111	.257
	Based on trimmed mean	1.759	2	57	.181

Uji Anova

ANOVA						
		Sum of Squares	df	Mean Square	F	Sig.
Warna	Between Groups	.805	2	.402	1.321	.275
	Within Groups	17.363	57	.305		
	Total	18.168	59			
Aroma	Between Groups	.381	2	.191	.466	.630
	Within Groups	23.326	57	.409		
	Total	23.707	59			
Rasa	Between Groups	2.339	2	1.169	3.578	.064
	Within Groups	18.626	57	.327		
	Total	20.964	59			

Lampiran 36 . Angket uji kesukaan (*Hedonic test*)

**FORMULASI TABLET HISAP EKSTRAK DAUN SIRIH (*Piper betle L.*)
DENGAN METODE GRANULASI BASAH MENGGUNAKAN VARIASI
KONSENTRASI GELATIN SEBAGAI BAHAN PENGIKAT**

SKRIPSI

Pelaksana : Resy Budi Ramadanti

UJI RESPONDENSI TANGGAPAN RASA

Identitas Responden

Umur :

Pekerjaan :

Petunjuk Pengisian :

Isilah hasil analisis saudara terhadap 3 formula tablet hisap pada kolom yang telah disediakan.

1. Bagaimana penilaian anda mengenai warna dari tiap-tiap tablet hisap ini? Berikan penilaian anda berdasarkan kisaran nilai yang diberikan.

Formula	Nilai
1	
2	
3	

Nilai 1 : Sangat tidak menarik

Nilai 2 : Tidak menarik

Nilai 3 : Cukup menarik

Nilai 4 : Menarik

Nilai 5 : Sangat menarik

2. Bagaimana penilaian anda mengenai aroma dari tiap-tiap tablet hisap ini? Berikan penilaian anda berdasarkan kisaran nilai yang diberikan.

Formula	Nilai
1	
2	
3	

3. Bagaimana penilaian anda mengenai rasa dari tiap-tiap tablet hisap ini? Berikan penilaian anda berdasarkan kisaran nilai yang diberikan.

Formula	Nilai
1	
2	
3	

Nilai 1 : Sangat tidak enak

Nilai 2 : Tidak enak

Nilai 3 : Cukup enak

Nilai 4 : Enak

Nilai 5 : Sangat enak

4. Hisap masing-masing tablet hisap, biarkan tablet melarut di mulut sampai habis. Catat waktu yang melarut yang diperlukan tiap-tiap tablet. Dari ke 3 formula, mana yang paling cepat larut? Berikan penilaian anda berdasarkan kisaran nilai yang diberikan.

Formula	Waktu melarut (menit)
1	
2	
3	

5. Menurut penilaian saudara tablet formula berapa yang paling anda sukai? Berikan (√) pada kolom yang tersedia.

Formula	Nilai
1	
2	
3	

Terima kasih atas partisipasi anda sebagai responden dalam penilaian tablet hisap ini.