

LAMPIRAN

Lampiran 1. Perhitungan Rendemen

1. Rendemen ekstrak rumput laut (*Glacilaria sp.*)

Berat sampel = 200 gram (x)

Berat cawan kosong = 75,67 gram (b)

Berat cawan + sampel = 132,69 gram (c)

$$\begin{aligned}\text{Berat ekstrak} &= b - c \\ &= 132,69 - 75,67 \\ &= 57,02 \text{ (y)}\end{aligned}$$

$$R = \frac{y}{x} \times 100\%$$

$$R = \frac{57,02}{200} \times 100\%$$

$$R = 28,51\% \text{ b/b}$$

2. Rendemen ekstrak kencur (*Kaempferia galanga*).

Berat sampel = 200 gram (x)

Berat cawan kosong = 73,42 gram (b)

Berat cawan + sampel = 129,93 gram (c)

$$\begin{aligned}\text{Berat ekstrak} &= b - c \\ &= 129,93 - 73,42 \\ &= 56,51 \text{ (y)}\end{aligned}$$

$$R = \frac{y}{x} \times 100\%$$

$$R = \frac{56,51}{200} \times 100\%$$

$$R = 28,25\% \text{ b/b}$$

Lampiran 2. Perhitungan Formula

Formula I

No	Formula	Konsentrasi (%)	Perhitungan Penimbangan
1.	Ekstrak Rumput Laut	10	$\frac{10}{100} \times 30 \text{ gram} = 3 \text{ gr}$
2.	Ekstrak Kencur	20	$\frac{20}{100} \times 30 \text{ gram} = 6 \text{ gr}$
4.	TEA (trietanolamin)	2	$\frac{2}{100} \times 30 \text{ gram} = 0,6 \text{ ml}$
5.	Metil Paraben	0,2	$\frac{0,3}{100} \times 30 \text{ gram} = 0,09 \text{ gr}$
6.	Propilen Glikol	5	$\frac{5}{100} \times 30 \text{ gram} = 1,5 \text{ gr}$
7.	Gliserin	4,8	$\frac{4,8}{100} \times 30 \text{ gram} = 1,44 \text{ gr}$
8.	Asam Stearat	4	$\frac{4}{100} \times 30 \text{ gram} = 0,12 \text{ gr}$
9.	Setil Alkohol	2	$\frac{2}{100} \times 30 \text{ gram} = 0,6 \text{ gr}$
10.	Emulgide	1	$\frac{1}{100} \times 30 \text{ gram} = 0,3 \text{ gr}$
11.	Aquadest	Ad 100	Ad 100

Formula II

No	Formula	Konsentrasi (%)	Perhitungan Penimbangan
1.	Ekstrak Rumput Laut	15	$\frac{15}{100} \times 30 \text{ gram} = 4,5 \text{ gr}$
2.	Ekstrak Kencur	15	$\frac{15}{100} \times 30 \text{ gram} = 4,5 \text{ gr}$
4.	TEA (trietanolamin)	2	$\frac{2}{100} \times 30 \text{ gram} = 0,6 \text{ ml}$
5.	Metil Paraben	0,2	$\frac{0,3}{100} \times 30 \text{ gram} = 0,09 \text{ gr}$
6.	Propilen Glikol	5	$\frac{5}{100} \times 30 \text{ gram} = 1,5 \text{ gr}$
7.	Gliserin	4,8	$\frac{4,8}{100} \times 30 \text{ gram} = 1,44 \text{ gr}$
8.	Asam Stearat	4	$\frac{4}{100} \times 30 \text{ gram} = 0,12 \text{ gr}$
9.	Setil Alkohol	2	$\frac{2}{100} \times 30 \text{ gram} = 0,6 \text{ gr}$
10.	Emulgide	1	$\frac{1}{100} \times 30 \text{ gram} = 0,3 \text{ gr}$
11.	Aquadest	Ad 100	Ad 100





Formula III

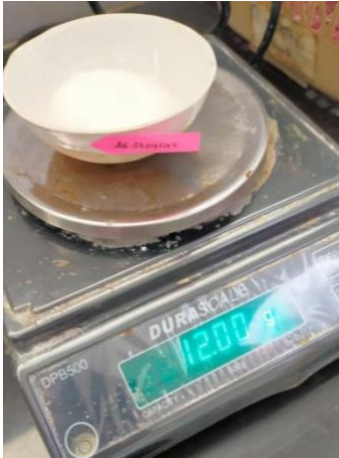

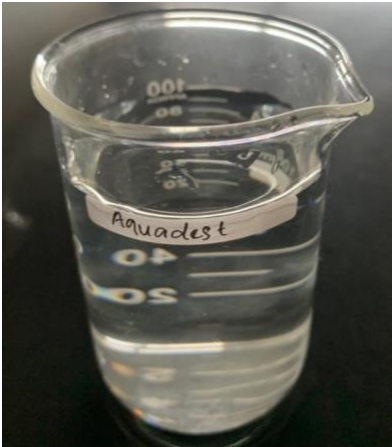
No	Formula	Konsentrasi (%)	Perhitungan Penimbangan
1.	Ekstrak Rumput Laut	1	$\frac{1}{100} \times 30 \text{ gram} = 0,3 \text{ gr}$
2.	Ekstrak Kencur	20	$\frac{20}{100} \times 30 \text{ gram} = 6 \text{ gr}$
4.	TEA (trietanolamin)	2	$\frac{2}{100} \times 30 \text{ gram} = 0,6 \text{ ml}$
5.	Metil Paraben	0,2	$\frac{0,3}{100} \times 30 \text{ gram} = 0,09 \text{ gr}$
6.	Propilen Glikol	5	$\frac{5}{100} \times 30 \text{ gram} = 1,5 \text{ gr}$
7.	Gliserin	4,8	$\frac{4,8}{100} \times 30 \text{ gram} = 1,44 \text{ gr}$
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9.	Setil Alkohol	2	$\frac{2}{100} \times 30 \text{ gram} = 0,6 \text{ gr}$
10.	Emulgide	1	$\frac{1}{100} \times 30 \text{ gram} = 0,3 \text{ gr}$
11.	Aquadest	Ad 100	Ad 100

Formula IV





No	Formula	Konsentrasi (%)	Perhitungan Penimbangan
1.	Ekstrak Rumput Laut	1	$\frac{10}{100} \times 30 \text{ gram} = 0,3 \text{ gr}$
2.	Ekstrak Kencur	15	$\frac{15}{100} \times 30 \text{ gram} = 4,5 \text{ gr}$
4.	TEA (trietanolamin)	2	$\frac{2}{100} \times 30 \text{ gram} = 0,6 \text{ ml}$
5.	Metil Paraben	0,2	$\frac{0,3}{100} \times 30 \text{ gram} = 0,09 \text{ gr}$
6.	Propilen Glikol	5	$\frac{5}{100} \times 30 \text{ gram} = 1,5 \text{ gr}$
7.	Gliserin	4,8	$\frac{4,8}{100} \times 30 \text{ gram} = 1,44 \text{ gr}$
8.	Asam Stearat	4	$\frac{4}{100} \times 30 \text{ gram} = 0,12 \text{ gr}$
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10.	Emulgide	1	$\frac{1}{100} \times 30 \text{ gram} = 0,3 \text{ gr}$
11.	Aquadest	Ad 100	Ad 100



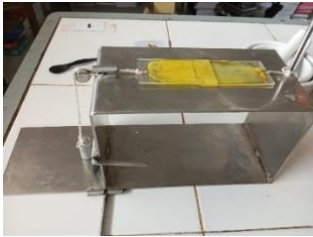

Lampiran 3. Bahan-Bahan Krim Tabir Surya

No	Gambar	Keterangan
1.		Ekstrak Rumput Laut
2.		Ekstrak Kencur
3.		TEA, Gliserin, dan Propilen Glikol
4.		Metil Paraben

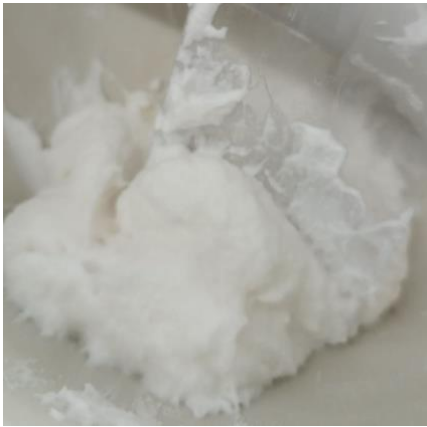


5.		Asam Stearat
6.		Setil Alkohol
7.		Aquadest



Lampiran 4. Proses Pembuatan Krim Tabir Surya

No	Gambar	Keterangan
1.		Penguapan Ekstrak Rumput laut & kancur
2.		Persiapan Alat dan Bahan
3.		Penimbangan Bahan
4.		Pencampuran Bahan Fase Air dan Minyak

5.		Penambahan Bahan Aktif
6.		Terbentuk Krim Tabir Surya
7.		Evaluasi Uji Fisik
8.		<i>Labelling</i> dan Pengemasan

Lampiran 5. Hasil Uji Evaluasi Sifat Fisik

No	Gambar	Keterangan
1.		<p>Uji Organoleptik (Penamakan, Warna, Aroma, Tekstur, rasa dikulit)</p>
2.		<p>Uji pH</p>
3.		<p>Uji Homogenitas</p>

4.		Uji Daya Lekat Krim
5.		Uji Daya Sebar Krim

Lampiran 6. Draft Publikasi Jurnal

Parapemikir : Jurnal Ilmiah Farmasi Vol 13 No.1 Tahun 2024

Formulasi Dan Uji Sifat Fisik Krim Tabir Surya Kombinasi Ekstrak Kencur Dan Rumput Laut *Glacilaria sp.*

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Abstrak

Penelitian ini bertujuan untuk mengeksplorasi sifat fisik dari formulasi krim tabir surya yang dikembangkan, dengan mengandung ekstrak rumput laut *Glacilaria sp.* dan *Kaempferia galanga* (kencur), menggunakan berbagai parameter pengujian. Metode pengujian melibatkan uji organoleptis untuk mengevaluasi karakteristik sensorik, pengukuran pH untuk menilai tingkat keasaman atau kebasaaan, dan pengukuran viskositas untuk memahami kemampuan aliran. Selain itu, penelitian ini mencakup penentuan *Sun Protection Factor* (SPF) untuk mengevaluasi efektivitas tabir surya. Uji daya lekat dan daya sebar juga dilakukan untuk mengukur kemampuan krim tabir surya dalam menempel dan menyebarkan dengan baik pada permukaan kulit. Dengan memanfaatkan berbagai parameter ini, penelitian bertujuan memberikan gambaran komprehensif tentang sifat fisik produk, membantu mengidentifikasi kekuatan dan kelemahan formulasi [1]. Ini menjadi dasar pengembangan lebih lanjut guna meningkatkan kualitas krim tabir surya, dengan tambahan nilai dari ekstrak alami rumput laut *Glacilaria sp.* dan *Kaempferia galanga*.

Kata kunci— Rumput Laut *Glacilaria sp.*, Tabir Surya, Uji Fisik

Ucapan terima kasih:

Abstract

*This research aims to explore the physical properties of the developed sunscreen cream formulation, containing extracts of *Glacilaria sp.* seaweed and *Kaempferia galanga* (kencur), using various testing parameters. Testing methods involve sensory evaluation to assess sensory characteristics, pH measurement to evaluate acidity or alkalinity, and viscosity measurement to understand flowability. Additionally, the study includes determining Sun Protection Factor (SPF) to evaluate sunscreen effectiveness. Adhesive and spreading tests are also conducted to measure the sunscreen cream's ability to adhere to and spread well on the skin. By utilizing various parameters, the research aims to provide a comprehensive overview of the physical properties of the product, aiding in identifying strengths and weaknesses of the formulation [1]. This serves as a foundation for further development to enhance the quality of the sunscreen cream, with the added value of natural extracts from *Glacilaria sp.* seaweed and *Kaempferia galanga*.*

Keyword— Seaweed *Glacilaria sp.*, Sunscreen, Physical Properties.

DOI

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Lampiran 7. Sertifikat Jurnal Penerbit

The image shows a screenshot of a SINTA (Sistem Informasi Naskah dan Artikel) journal certification page. At the top left is the SINTA logo, and at the top right is a hamburger menu icon. The main content area features a blue background with a central image of the journal cover for 'Para Pemikir'. Below the cover, the journal's name 'PARAPEMIKIR : JURNAL ILMIAH FARMASI' is displayed in white. Underneath, the publisher information is listed: 'PUSAT PENELITIAN DAN PENGABDIAN MASYARAKAT POLITEKNIK HARAPAN BERSAMA'. ISSN information is provided: 'P-ISSN : 20895313 <> E-ISSN : 25495062'. The subject area is listed as 'Subject Area : Humanities, Education'. Below this information are three white rounded rectangular boxes with colored backgrounds, each containing an icon and a metric: 1. A people icon, '0 Impact Factor'. 2. A building icon, '95 Google Citations'. 3. A star icon, 'Sinta 5 Current Accreditation'.

Lampiran 8. Data Analisa Uji Daya Sebar Krim (*One Way ANOVA*)

ANOVA

Replikasi

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	,722	3	,241	,424	,741
Within Groups	4,547	8	,568		
Total	5,269	11			

Nilai Sig > 0,05 yaitu sebesar 0,741 sehingga data tidak signifikan

Multiple Comparisons

	(I)	(J)	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Tukey HSD	Formula1	Formula2	-,4000	,6155	,913	-2,371	1,571
		Formula3	-,4667	,6155	,871	-2,438	1,505
		Formula4	,1000	,6155	,998	-1,871	2,071
	Formula2	Formula1	,4000	,6155	,913	-1,571	2,371
		Formula3	-,0667	,6155	1,000	-2,038	1,905
		Formula4	,5000	,6155	,847	-1,471	2,471
	Formula3	Formula1	,4667	,6155	,871	-1,505	2,438
		Formula2	,0667	,6155	1,000	-1,905	2,038
		Formula4	,5667	,6155	,795	-1,405	2,538
	Formula4	Formula1	-,1000	,6155	,998	-2,071	1,871
		Formula2	-,5000	,6155	,847	-2,471	1,471
		Formula3	-,5667	,6155	,795	-2,538	1,405

Replikasi

			Subset for alpha = 0.05
	Formula	N	1
Tukey	Formula4	3	4,500
HSD ^a	Formula1	3	4,600
	Formula2	3	5,000
	Formula3	3	5,067
	Sig.		,795
Tukey B ^a	Formula4	3	4,500
	Formula1	3	4,600
	Formula2	3	5,000
	Formula3	3	5,067

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3,000.

Lampiran 9. Data Analisa Uji Daya Lekat Krim (*One way ANOVA*)

ANOVA

Replikasi

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	,552	3	,184	,798	,529
Within Groups	1,844	8	,231		
Total	2,396	11			

Nilai sig>0,05 yaitu sebesar 0,529 sehingga tidak signifikan

Multiple Comparisons

Dependent Variable: Replikasi

	(I)	(J)	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Tukey HSD	Formula1	Formula2	,23667	,39202	,928	-1,0187	1,4920
		Formula3	,59000	,39202	,477	-,6654	1,8454
		Formula4	,37667	,39202	,774	-,8787	1,6320
	Formula2	Formula1	-,23667	,39202	,928	-1,4920	1,0187
		Formula3	,35333	,39202	,805	-,9020	1,6087
		Formula4	,14000	,39202	,983	-1,1154	1,3954
	Formula3	Formula1	-,59000	,39202	,477	-1,8454	,6654
		Formula2	-,35333	,39202	,805	-1,6087	,9020
		Formula4	-,21333	,39202	,946	-1,4687	1,0420
	Formula4	Formula1	-,37667	,39202	,774	-1,6320	,8787
		Formula2	-,14000	,39202	,983	-1,3954	1,1154
		Formula3	,21333	,39202	,946	-1,0420	1,4687

Replikasi

			Subset for alpha = 0.05
	Formula	N	1
Tukey HSD ^a	Formula3	3	1,1800
	Formula4	3	1,3933
	Formula2	3	1,5333
	Formula1	3	1,7700
	Sig.		,477
Tukey B ^a	Formula3	3	1,1800
	Formula4	3	1,3933
	Formula2	3	1,5333
	Formula1	3	1,7700

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3,000.

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SMP : SMP N 1 Tegal
SMA : SMA Al - Irsyad Tegal
DIII : Diploma III Farmasi Politeknik Harapan Bersama
Judul Penelitian : Formulasi Dan Uji Sifat Fisik Krim Tabir Surya Kombinasi Ekstrak Kencur (*Kaempferia galanga*) Dan Rumput Laut (*Glacilaria sp.*)

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