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Herbal Medicine in Pharmaceutical and Clinical Sciences

Optimization of SRC (Semi Refined Carrageenan) and Glucomannan Concentration as Gelling Agent to the Physical Stability Sunscreen Gel of Dry Corncob Extract (*Zea mays* L.)

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Keywords: Corncob; Sunscreen; Gel; Physical Stability; SRC (Semi Refined Carragenan); Glucomannan

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Abstract

BACKGROUND: Corncob is one of crude drug which containing phenolic compounds that can be used as an active ingredient for sunscreen preparations. In this study, extracts of dried corn cob made into a gel formulation using SRC (Semi Refined Carrageenan) and glucomannan as a gelling agent.

AIM: This study aims to determine the optimal concentration of SRC (Semi Refined Carrageenan) and glucomannan to the physical stability of the gel.

METHODS: Gel made into four formulas with a ratio of 1: 4 and the concentration of each formula was 1%, 1.5%, 2%, 2.5%. Each formula was evaluated for 6 weeks of storage that includes organoleptic test, homogeneity, pH, viscosity, dispersive power, freeze-thaw test and centrifugation.

RESULTS: The results showed the fourth formula did not change the organoleptic test and homogeneity test. In the test separation of the freeze-thaw method, the fourth formula was stable, while in the centrifugation test formula 1 and 2 was been separation. pH and viscosity results obtained from statistics with a two-way ANOVA showed significant differences in each formula.

CONCLUSION: From the results of this study concluded that the formula 3 with a concentration of 2% was the optimal concentration as a gelling agent.

Introduction

Corncob is the biggest part of corn wasteso this is need an attention and handling for the utilization of corncob waste. During this time corncob waste is just thrown away, or just used as a kitchen fuel, cattle feed additives and fumigation to repel mosquitoes [1]. Traditionally corn cobs have never been utilized as active ingredients of a cosmetic preparation. Therefore, it is necessary to make a preparation that can utilize the corn cob as an active sunscreen ingredient. In this study corncob extract will be made in gel preparation form. The gel preparation is chosen because it is comfortable at the time of use, the release of good medicine and its spreading ability is good on the skin.

In the previous study used a combination of SRC (Semi Refined Carrageenan) and glucomannan as a gelling agent [2]. From this combination was obtained a gel with good strength, elastic texture and low sineresis at a ratio of 1: 1 with a concentration of 7%. The combination of these two gelling agents produces a synergic effect in forming a good gel. Whereas when used karagenan pure kappa type will produce a kind of gel that is not good gel that is rigid and brittle.

Based on the research, this research was made gel preparation by using combination of SRC (Semi Refined Carrageenan) and glucomannan as gelling agent in comparison (1:1) with various concentration to see optimum concentration. SRC or half-finished carrageenan kappa types are chosen because when combined with glucomannan it will form a better gel than just using pure carrageenan.

Material and Methods

Materials

Dry corncob extract *(Zea mays* L.), Semi Refined Carrageenan (Ocean Fresh), Glukomanan (Hubei Yizhi Konjac Biotechnology), Propylenglycol (Brataco), Metyl paraben, Propyl paraben, Aqua destilata, Etanol 80%, Metanol, $FeCl_3$ solution, Mg metal.

Preparation of Dry Corn Cob Extract

The extraction is performed by reflux. 950 grams of dried corncob powder was put into a round bottom flask, added 9.5 L ethanol 80%, then heated for 2 hours at a temperature of 78-90°C. The extract was filtered, then the filtrate was evaporated to remove the solvent by using rotary evaporator at 60°C, then dried in an oven at 45-50°C until dry to obtain dried corncob extract [3].

Corncob Extract Gel Formula

Table 1: Corncob Extract Gel Formula

Component	Concentration				Function
	F1 (%)	F2 (%)	F3 (%)	F4 (%)	
Dry Corncob Extract	0.021	0.021	0.021	0.021	Active Ingredient
SRC (Semi Refined Carrageenan) & Glucomannan (1: 4)	1	1.5	2	2.5	Gelling agent
Propylene glycol	10	10	10	10	Humectan
Methyl paraben	0.18	0.18	0.18	0.18	Preservative
Propyl paraben	0.02	0.02	0.02	0.02	Preservative
Aquadest ad	100	100	100	100	Solvent

Preparation of Gel Corncob Extract

A. SRC and glucomannan are crushed to homogeneous and then added hot water, rapidly crushed until gel is formed (gel base).

B. Methyl paraben and propyl paraben are dissolved in propylenglycol, added gel base, then crushed to homogeneity (mass 1).

C. The dried corncob extract was crushed, then added mass 1 bit by bit, crushed until homogeneous.

D. Gel is inserted into the container and evaluated.

Data analysis

The result of the observed test of viscosity and pH obtained on each formula was analyzed by using two-way variance analysis (ANAVA) with 95% confidence level (α = 0,05) and if there is difference then continued with Tuckey-HSD test.

Results

Characteristic Test of Dry Corncob Extract

The dried corncob extract obtained has the characteristics according to Table 2.

Table 2: Characteristic of Dry Corncob Extract

Evaluation	Result
Form	Dry Powder
Colour	Chocolate
Smell	SPecific
Yield	1.83%
Water Content	3.98%

Identification of Flavonoid Compounds

The result of identification test of compound on dry extract of corncob contains positive flavonoids with 2 test methods used. Flavonoid compounds are the main compounds of phenolic compounds in corn cobs [3].

Gel Extract Gelkol Corn Formulation

Dry corn extract gel was made with SRC (Semi Refined Carrageenan) and glucomannan as gelling agent at a ratio of 1: 4 with concentrations of 1%, 1.5%, 2%, and 2.5%. Characteristics of each formula are obtained as in Table 3.

Table 3: Characteristics of Gel Extract Gelkol Corn Formulation

Formulas	Shape	Color	Smell	Homogeneity
F1	Semiliquid	Light Yellow	Typically	Homogeneous
F2	Semiliquid	Light Yellow	Typically	Homogeneous
F3	Semiliquid	Light Yellow	Typically	Homogeneous
F4	Semiliquid	Light Yellow	Typically	Homogeneous

Evaluation of Dried Corn Extract Gel preparation

Observations of organoleptic and homogeinity of gel preparation were carried out for 6 weeks at room temperature. The observations can be seen in Table 4.

Table 4: Result of Organoleptic and Homogeneity

Formulas	Organoleptic	Time (week)						
		0	1	2	3	4	5	6
1	Shape	-	-	-	-	-	-	-
	Color	-	-	-	-	-	-	-
	Smell	-	-	-	-	-	-	-
	Homogenity	-	-	-	-	-	-	-
2	Shape	-	-	-	-	-	-	-
	Color	-	-	-	-	-	-	-
	Smell	-	-	-	-	-	-	-
	Homogenity	-	-	-	-	-	-	-
3	Shape	-	-	-	-	-	-	-
	Color	-	-	-	-	-	-	-
	Smell	-	-	-	-	-	-	-
	Homogenity	-	-	-	-	-	-	-
4	Shape	-	-	-	-	-	-	-
	Color	-	-	-	-	-	-	-
	Smell	-	-	-	-	-	-	-
	Homogenity	-	-	-	-	-	-	-

Description: (-) = No change occurred; (+) = Changes occurred.

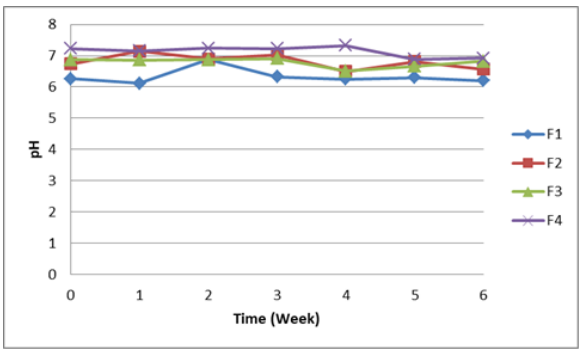

Figure 1: Results of pH Measurement Graph

Measurement of Viscosity

The result of viscosity measurement of gel preparation by using Brookfield type DV-E viscometer at speed of 10 rpm for 6 weeks at room temperature can be seen in the following graph

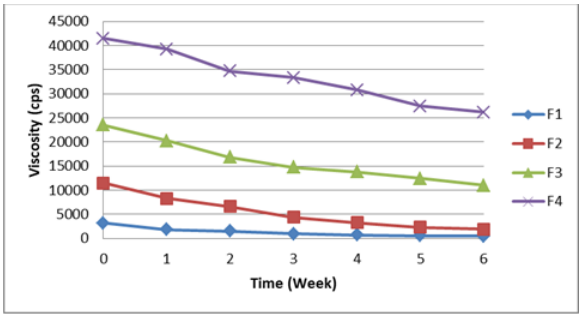

Figure 2: Result of viscosity Measurement Graph

Phase Separation Test

The results of the observations obtained are shown in Table 5.

Table 5: The Result of Freeze-thaw Test

Cycle		F1			F2			F3			F4		
		1	2	3	1	2	3	1	2	3	1	2	3
1	4°C	-	-	-	-	-	-	-	-	-	-	-	-
	45°C	-	-	-	-	-	-	-	-	-	-	-	-
2	4°C	-	-	-	-	-	-	-	-	-	-	-	-
	45°C	-	-	-	-	-	-	-	-	-	-	-	-
3	4°C	-	-	-	-	-	-	-	-	-	-	-	-
	45°C	-	-	-	-	-	-	-	-	-	-	-	-
4	4°C	-	-	-	-	-	-	-	-	-	-	-	-
	45°C	-	-	-	-	-	-	-	-	-	-	-	-
5	4°C	-	-	-	-	-	-	-	-	-	-	-	-
	45°C	-	-	-	-	-	-	-	-	-	-	-	-
6	4°C	-	-	-	-	-	-	-	-	-	-	-	-
	45°C	-	-	-	-	-	-	-	-	-	-	-	-

Description: (-) = no separation occurs; (+) = separation occurs.

Centrifugation test

The results of the centrifugation of each formula can be seen in Table 6.

Table 6: Results of the Centrifugation

Formula	Speed (3750 rpm)
F1	+
F2	+
F3	-
F4	-

Description: (-) = no separation occurs; (+) = separation occurs.

Discussion

Characteristic Test of Dry Corncob Extract

The dried corncob extract in this study was obtained from reflux extraction. The extraction results are then dried with oven. Then, the characteristic and flavonoid content of dry extract was evaluated. The result of identification test of compound on dry extract of corncob contains positive flavonoids with 2 test methods used. Flavonoid compounds are the main compounds of phenolic compounds in corncobs [3].

Gel Extract Gelkol Corn Formulation

Dry corn extract gel was made with SRC (Semi Refined Carrageenan) and glucomannan as gelling agent at a ratio of 1: 4 with concentrations of 1%, 1.5%, 2%, and 2.5%. All formulas have same characteristic.

Evaluation of Dried Corn Extract Gel preparation

Observations of organoleptic and homogeinity of gel preparation were carried out for 6 weeks at room temperature. From the gel observation for 6 weeks, the gel did not undergo any change, the result showed that the 4 formulas were physically stable.

Measurement of pH

The degree of acidity (pH) is one aspect in evaluating stability. The gel should have a pH corresponding to a skin pH of 4.5-6.5 because if the gel has too alkaline pH it can cause the skin to be scaly, whereas if the pH is too acidic it can cause skin irritation. Based on the graph it can be seen that the increase in pH value of the preparation is accompanied by increasing the concentration of SRC (Semi Refined Carrageenan) and glucomannan. This is because one of the ingredients, namely SRC (Semi Refined Carrageenan) is alkaline, so the more concentration increases, the higher the pH of the preparation. The result of pH of gel preparation of dry extract of corncobs ranged from 6.20 to 7.32. From the results of pH measurements for 6 weeks showed the four gel preparation formulas increased and decreased, this is because the container is open at the time of evaluation, so it can affect the pH value.

Measurement of Viscosity

Viscosity is a measure of the resistance of a liquid to flow. One form of instability of the dispersion system is the occurrence of phase separation. According to Stokes' law that with increased viscosity will be able to decrease sedimentation rate on dosage

[4], then should the higher the viscosity the lower the instability of the preparation.

Based on the graph it can be seen that the increase in viscosity of the preparation is accompanied by increasing the concentration of SRC (Semi Refined Carrageenan) and glucomannan. This is because carrageenan has a sulfate group that makes it hydrophilic. Due to its hydrophilic nature, the polymer is surrounded by water-immobilized molecules that cause the carrageenan solution to become viscous [5]. The higher the concentration of SRC (Semi Refined Carrageenan) and glucomannan, the viscosity increases.

The result of viscosity measurement for 6 weeks showed decrease every week on all formulas. This is due to a decrease in the force of repulsion between the sulfate groups so that the hydrophilic nature of the polymer is getting weaker [6]. In addition, SRC (Semi Refined Carrageenan) and glucomannan are natural polymers that are generally susceptible to degradation.

Phase Separation Test

The phase freeze test with freeze-thaw method is carried out for 6 cycles. Tests were performed with storage at two different temperatures ie 4°C and 45°C for 48 hours each. The results obtained from the test show that all formulas do not undergo separation so that it can be said that the gel is stable at cold temperature and hot temperature at the time of storage.

Centrifugation test

The phase separation test by centrifugation method, carried out at 3750 rpm for 5 hours. This is done because the treatment is equal to the magnitude of the influence of gravity on gel storage for a year [7]. However, in this study the measurements were performed at a speed of 3750 rpm for 5x60 minutes and rested for 15 minutes due to device limitations. Thus, due to the limitations of the apparatus, the results of the centrifugation tests performed cannot show the effect of gravity force during storage a year but can only show stability comparison between formulas. From the test results showed the separation of formula 1 and 2, while in the formula 3 and 4 did not experience separation. So, it can be said that formulas 3 and 4 are more stable than formula 1 and 2.

References

1. Wungkana I, Suryanto E, Momuat L. Antioxidant Activity and Sunscreen Phenolic Fraction from Corncob (Zea mays L.) Waste. Jurnal Ilmiah Farmasi. 2013:150.

2. Kaya Adrianus, Suryani A, Santoso J, Rusli M.S. The Effect of Gelling Agent Consentration on the Characteristic of Gel Produced from the Mixture of Semi Refined Carrageenan and Glukomanan. International Journal Science, Basic and Apllied Research. 2015:313-324.

3. Lomempuow LI, Suryanto E, Paendong J. Antioxidant Activity and Sunscreen Phenolic Extract from Corncob (Zea mays L.) Waste. Jurnal Ilmiah Farmasi. 2012:1-2. https://doi.org/10.35799/jm.1.1.2012.422

4. Agoes G. Sediaan Farmasi Likuida-Semisolida. Bandung: ITB; 2012:25; 27; 124; 266.

5. Desvitari Anissa. The Effect of Iota Carrageenan Concentration as a Gelling Agent on the Physical Stability of Black Cumin Seed (Nigella sativa L.) Oil Emulgel [skripsi]. Jakarta: Fakultas Farmasi dan Sains Uhamka, 2014.

6. Silvyana A.E. The Effect of Increased Concentration of Iota Carrageenan as a Gelling Agent on the Physical Stability of Gels from Starfruit (Averrhoa blimbi L.) Juice Waste [skripsi]. Jakarta: Fakultas Farmasi dan Sains Uhamka, 2015.

7. Lachman L. Lieberman, H.A, Kanig J.L. Teori dan Praktek Farmasi Industri II edisi III, Terjemahan: Siti Suyatmi. Jakarta: UI Press, 1994:1078; 1080-1081; 1578-1587.

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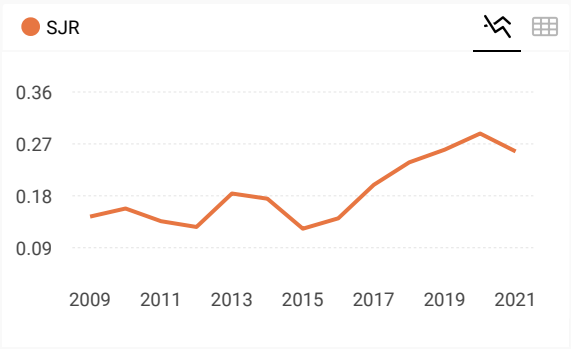

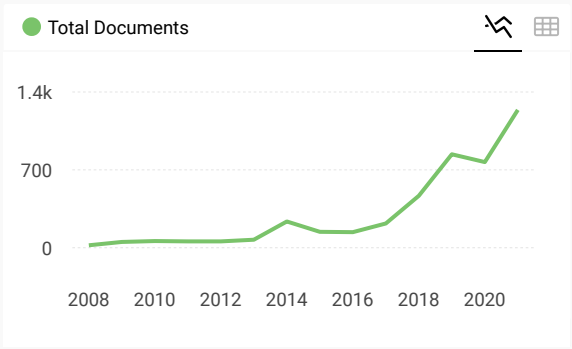

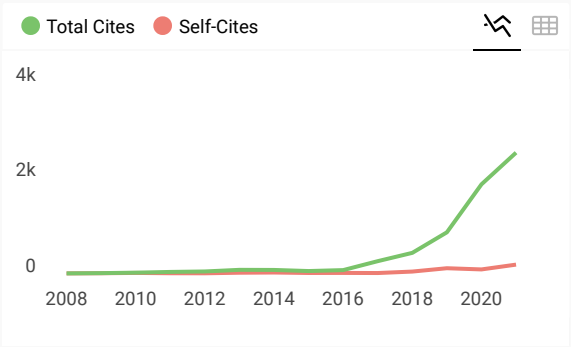

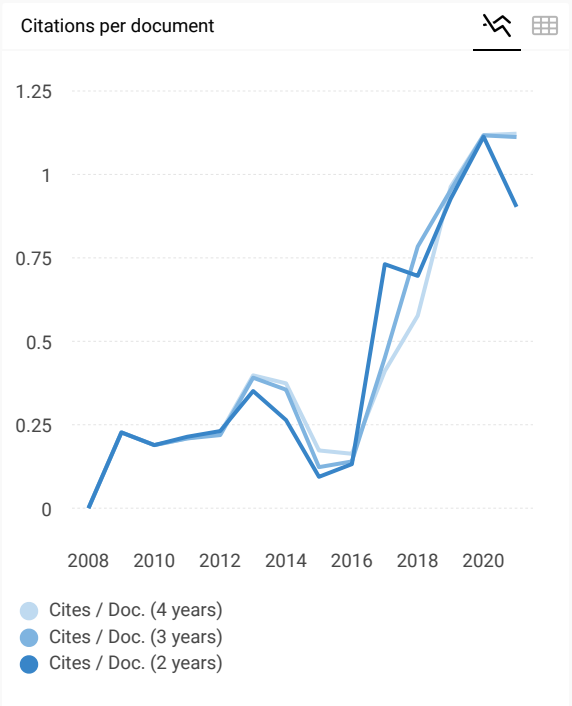

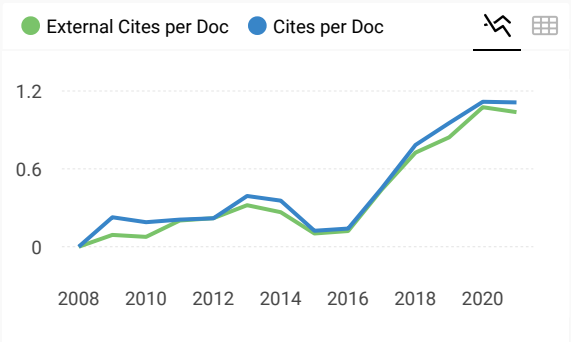

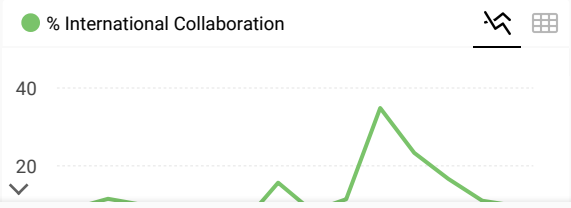

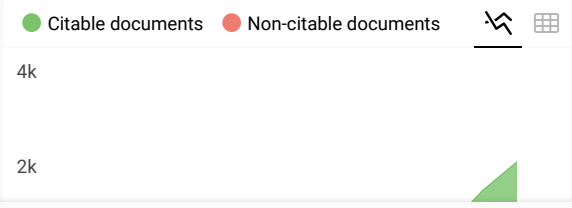

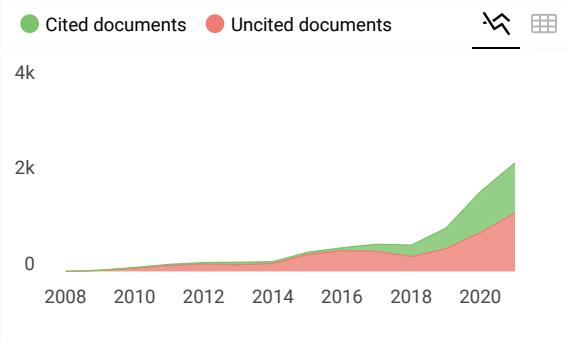

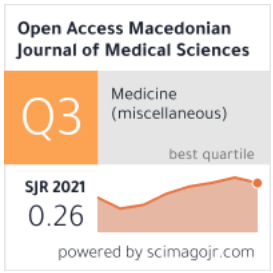

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