



Utilization of a Combination of Papaya (*Carica papaya* L.) Seed Oil and Virgin Coconut Oil (VCO) in Pomade Formulation and Its Effectiveness Test

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ABSTRACT

Pomade is a hair oil made from oily or wax-based ingredients and is applied for hairstyling. The use of pomade is intended to make the hair appear smoother, shinier, and more moisturized. Pomade has been proven to provide longer-lasting hairstyling effects compared to most other hair care products. Papaya seeds (*Carica papaya* L.) are known to contain chemical compounds such as flavonoids, phenols, alkaloids, terpenoids, and saponins, which are beneficial for promoting hair growth. The enzyme carpain, found in the alkaloid group, is believed to help maintain hair pigment. Meanwhile, virgin coconut oil (VCO) has long been traditionally used to nourish hair. Virgin coconut oil (VCO) contains high amounts of vitamin E, vitamin K, lauric acid, and iron, which serve as essential nutrients and vitamins for moisturizing the hair. This study was conducted experimentally by formulating and testing the stability of pomade preparations using papaya seed oil and VCO at concentrations of 5%, 7.5%, and 10%, followed by evaluation. The evaluation of the formulation included organoleptic tests, homogeneity tests, irritation tests, hedonic (preference) tests, pH tests, spreadability tests, resistance tests, rinsing tests, and stability tests. The results showed that the pomade formulation met the quality and stability evaluation requirements. It had a semi-solid texture, a green tea scent, and different colors for each formulation: F0 was ivory white, F1 (5%) was cream-colored, F2 (7.5%) was cream-colored, and F3 (10%) was yellowish-white. The most preferred formulation was F2 with a 7.5% concentration. All formulations were homogeneous and did not cause skin irritation. They had a pH range of 5.3–6.5, a spreadability range of 4.3–6.5 cm, and demonstrated stable consistency without significant changes. In conclusion, the formulation of pomade using a combination of papaya seed oil (*Carica papaya* L.) and virgin coconut oil (VCO) can be developed as a pomade that provides a shiny and moisturized hair appearance while preserving hair pigment for long-term use. The concentrations of 5%, 7.5%, and 10% remained stable during the stability tests.

INTRODUCTION

The fashion and cosmetics market is growing rapidly due to the growing public view of current trends and lifestyles. Nowadays, women are no longer obliged to look fashionable, but men also feel the need to adopt the cool style of society. Changes in men's sensitivity to appearance and self-image also seem to be seen in the country's cosmetics and beauty industry. (Kurniadi AD, 2017).

Hair is one of the skin adnexa found on the whole body except the palms, soles of the feet, nails, the tip of the penis, the inner surface of the female genital lips, and the lips. Hair has a very important role because hair is not only a protection for the head from various things such as the danger of collisions or blows from hard objects, sunburn, and so on, it is also a valuable piece of jewelry. Hair that is thick, long, black or shiny in color is healthy and easy to manage gives its owner its own charm. Not a few women or men cause admiration just because of the beauty of their hair. (Angendari, M D, 2012).

Pomade has been proven to last longer when styled than most other hair care products. Pomade dates back to the 18th and 19th centuries and is made from bear and pig fat but today lanolin, beeswax, white petrolatum, and other organic raw materials are used as the basic material for pomade production. (Mujiono RA, Ismedsyah I, 2020)

The benefits of papaya seeds should not be underestimated, the part of papaya seeds that is usually thrown away turns out to be effective for several body health complaints. While most people throw it away, there are some people who use papaya seeds for consumption because they have unique benefits (Elmitra, 2016).





Previous research found that the IC50 value of Methanol extract of *C. Papaya* seeds was 53.41 b μ g (Amaliah, Nur R, Rahmawanty D and, Ratnapuri HP, 2018). Papaya seeds are known to contain chemical compounds such as phenols, alkaloids and saponins. Papaya seeds that are white contain triterpenoid aldehyde compounds with the characteristics of functional groups: $-CH_2$, $-CH_3$, and $C=O$ which have the potential to be antibacterial (Salim, Niam, Ahmad Sumardianto AU, 2018) From several studies that have been carried out, papaya seed extract has been researched as an antibacterial and antiseptic From the content of papaya fruit, it was found that there are carpine alkaloids, caricin and glycosides of carraffin and carpine which turned out to be efficacious as hair dyes (Sutriningsih, Sagala, Zuraida Zuraida M, 2017). Hair that adorns the human head is an aesthetic necessity, so people spend a lot of time caring for and repairing their hair. Scalp disorders such as sensitive, oily and dandruff, which interfere with normal hair growth often occur (Malonda, C T, Yamlean PVY CG, 2017).

. Based on previous research Virgin coconut oil (VCO) is formulated as a hair nourisher with a combination of rice bran oil. Therefore, in this study, a combination of papaya seed oil was used (*Carica papaya* L.) with coconut oil Virgin coconut oil (VCO) which contains substances and is believed to stimulate hair growth, one of the ingredients present in both active substances can help maintain hair color pigment black, shiny and stimulate hair growth.(Maya Khalimatu Saadah MK, 2020).

Antioxidants are substances that inhibit or prevent collapse, damage, or destruction due to oxidation. Antioxidants can potentially increase hair growth, head hair and eyelashes are one common type of hair, namely terminal hair.(Hanum SF, Siho mbing PN, Ginting EE, Shufyani F, Naldi J, 2023)

Papaya (*Carica papaya* L.) is one of the fruits that are popular all over the world because of its fresh taste, health benefits, beauty and ability to overcome various digestive problems. Papaya is a fruit plant from the family Caricaceae which comes from Central America and the West Indies and even the surrounding areas of Mexico and Costa Rica. Papaya plants are widely grown, both in tropical and subtropical areas, in wet and dry areas or in plains and mountains up to 1000 meters above sea level (masl). Papaya fruit is a high-quality and nutritious table fruit.(Kharisma Y, 2017)

Papaya (*Carica papaya* L.) contains alkaloids carpainin, carpain, pseudocarpain, vitamins C and E, choline, and carposide. Papaya leaves contain a glucosinolate called benzyl isothiocyanate. Papaya leaves also contain minerals such as potassium, calcium, magnesium, copper, iron, zinc, and manganese. In addition, papaya leaves contain the alkaloid compounds carpain, carikaksantine, violacsants, papain, saponins, flavonoids, and tannins (Dalimartha S, 2009).

It was found that there were alkaloids of carpain, caricin and glycosides of carine and carpain which turned out to be efficacious as hair dyes.(Sutriningsih, Sagala, Zuraida Zuraida M, 2017)

1. The papain enzyme helps accelerate the work of macrophages by increasing the production of interleukin which is very useful for the wound healing process and inhibiting the occurrence of widespread infections.(Prampasi, N, 2013)
2. Flavonoids are capable of treating wounds and acting as astringents and antimicrobials and can help accelerate collagen growth (synthesize collagen) through increased fibroblasts and tissue formation.
3. Saponins are one of the compounds that are able to spur collagen formation and function as a cleanser, making them effective for healing open wounds.(Maisarah M, Chatri M AL, 2023).

Papaya plants are traditional, the roots of which can be used as a remedy for bladder disorders. The leaves are a cure for malaria, stomach cramps and hot flashes. The stems of young fruits and their leaves contain white sap that contains protein-breaking enzymes called "papain" so that it can soften meat and leather in the textile industry, as well as for cosmetic materials in the pharmaceutical industry. One of the papaya plants that can be used as medicine is papaya seeds (*Carica Papaya* L.). (Nurlaili, 2016).

Plants contain secondary metabolite compounds that are synthesized by plant organs in both roots, stems, leaves, flowers, fruits, and seeds. Plants produce secondary metabolite compounds to defend themselves in their habitat. Metabolite compounds are active compounds in plants that generally contain alkaloids, flavonoids, terpenoids, steroids, saponins, tannins, and phenolics that have the potential to be medicinal. Active compounds found in plants have physiological and beneficial effects as medicines.(Septianingrum Y, Safrina U, Puspita N, Surahman S, 2023).

Alkaloids are a class of secondary metabolite compounds that are alkaline with one or more nitrogen atoms that are generally in a cyclic system. Alkaloids can be found in various parts of plants, such as flowers, seeds, leaves, twigs, roots and stem bark. Alkaloids are generally found in small amounts and must be separated from complex mixtures of compounds derived from plant tissues. Alkaloids are active substances from plants that function as drugs and strong activators for immune cells that can destroy bacteria, viruses, fungi, and cancer cells. Alkaloids have antimicrobial activity by inhibiting esterases, DNA, RNA polymerase, and cell respiration and play a role in DNA intercalation. As an antifungal, alkaloids cause damage to cell membranes. The alkaloids will bind strongly with ergosterol forming holes that cause cell membrane leakage. This results in permanent damage to cells and cell death in fungi (Zesch A, 1999).

Basically, the human body is composed of various organs of the body, each organ of which is an arrangement of certain cells that have their own shape and function so that they form a network. Likewise with skin, anatomically and functionally it has its own characteristics that can be studied as supporting knowledge in every work related to skin beauty. (Rasyadi Y, Tri S, Fendri J, Wahyudi FT, 2020).



Cosmetics are products that are used on the outside of the body with the aim of cleaning, fragrance, changing appearance, and repairing or maintaining the body in good condition. In terms of legislation, cosmetics are different from drugs. In principle, cosmetics do not contain any components (ingredient) that treats or prevents diseases or interferes with the structure and function of the human body. The goal of cosmetics is limited to improving appearance. The components used in cosmetic preparations are largely the same as those used in medicinal preparations, with the exception of components intended to treat (cure), reduce/relieve (alleviate), or prevent (prevent) diseases, not present in cosmetic preparations (Ministry of Health of the Republic of Indonesia, 2017).

Cosmetics are ingredients or preparations that are intended to be used on the outside of the human body such as epidermis, hair, nails, lips and external genital organs, or teeth and oral mucous membranes mainly to clean, fragrance, change the appearance and improve body odor or protect or maintain the body in good condition. Cosmetics are not drugs and not to treat.

Pomade is a type of hair oil made from an oily substance or a type of material from wax (wax) used for styling hairstyles. Pomade is widely used to make hair look smoother, shiny, and more moisturized. Pomade hair oil has been proven to last longer than other products in styling hair.

According to the Indonesian Herbal Pharmacopoeia Edition II, Simplisia is a dried natural ingredient that is used for treatment and has not undergone processing. Drying can be done by drying in the sun, aerated, or using an oven, unless otherwise stated the drying temperature with the oven is no more than 60°C.

Extraction is a method of separating a substance based on the difference in solubility to two different insoluble liquids, usually water and the other in the form of organic solvents (Mukhrani, 2014).

Extraction is the process of separating the ingredients from the mixture using the appropriate solvents. To separate one or more components in a mixture, the mixture interacts with another phase (solvent). Two-phase pairs can be gas-liquid, liquid-vapor, liquid-liquid, or liquid-solid. While extracts are the result of extraction. The commonly used extraction method is maceration.

METHODS

This research is an experimental research. This study was conducted to find out whether the combination of papaya seed oil (*Carica papaya* L.) and Virgin coconut oil (VCO) can be used as a formulation for making pomade preparations using the soxhletation method.

The research will be conducted in November 2024 until Completion. It was carried out at the Research Laboratory of the Faculty of Pharmacy and Health, Helvetia Health Institute Medan.

The sample of this study is papaya seeds (*Carica papaya* L.) obtained from the Btn complex, Jln Link XI Blok Ag, Martubung and VCO which were purchased in Maju along with Medan Millenium. The samples used in this study are samples taken without considering the place of growth and geographical location (purposive sampling).

The tools used in this study were soxhlet tools, rotary evaporators, spatulas, stirring rods, parchment paper, filter paper, beaker glass, porcelain cups, lumpang and pestle, drip pipettes, analytical scales, measuring cups, watch glasses, pH meters, blenders, water baths, and pomade pots. The ingredients used in this study are papaya seeds, VCO, white Vaseline, Cera alba, Lanolin, Span 80, Nipagin, Vitamin E (antioxidant), Green tea (perfume), Glycerin. The samples needed are papaya seeds (*Carica papaya* L.) and virgin coconut oil (VCO).

RESULTS

Organoleptic Tests

Table 1 . Observation Data of Organoleptic Test Results of Pomade Preparations of Papaya Seed Oil and VCO

Formula	Organoleptis		
	Tekstur	Color	Construction
F0	Semi-Solid	Ivory White	Buble gum
F1	Semi-Solid	Cream	Green tea
F2	Semi-Solid	Cream	Green tea
F3	Semi-Solid	Brownish yellow	Green tea
K+	Semi-Solid	Brownish-white	Green tea

Based on table 1. It is known from the results of the organoleptic test that the preparation is semi-solid, F0 is scented with bubble gum, F1, F2, F3 is scented with green tea, F0 is ivory white, F1 is cream, F2 is cream and F3 is brownish-yellow while the positive control is brownish-white.



Homogeneity Test Results

Table 2. Homogeneity test results of papaya seed oil pomade preparation and VCO

Formula	Repetition		
	Wed-1	Wed-2	Wed-3
F0	Homogeneous	Homogeneous	Homogeneous
F1	Homogeneous	Homogeneous	Homogeneous
F2	Homogeneous	Homogeneous	Homogeneous
F3	Homogeneous	Homogeneous	Homogeneous
K+	Homogeneous	Homogeneous	Homogeneous

Based on the table above, the homogeneity check results of pomade preparations of papaya seed oil extract and VCO with a concentration of 5%, 7.5%, 10% and positive controls showed that the prepared preparations were homogeneous.

pH Test Results

Table 3. The pH test results of pomade preparations use papaya seed oil extract and VCO.

Formula	pH Before Stability Test	pH After Stability Test
F0	5,8	5,75
F1	5,73	5,78
F2	5,66	5,68
F3	5,46	5,51
K+	5,28	5,5

Based on the results of the pH test in table 3. It can be seen that the pomade preparation of a combination of papaya seed oil and VCO ranges from 5.2-5.8 according to the standard pH value of a good pomade preparation between 4.5-6.5 or according to the pH of the human scalp.

Dispersion Test Results

Table 4. Dispersion test preparation results

Dispersability Formula	Load			
	0 g (cm)	50 g (cm)	100g (cm)	150 g (cm)
F0	5	5,	5,5	5,7
F1	5	5,2	5,6	5,9
F2	5,5	6	6,3	6,5
F3	4,3	4,8	5	5,6
K+	4,8	4,9	5	5,5

Irritant Test Results

Table 5. Results of irritation test preparations for papaya seed oil pomade preparations and VCO

Like Volunteers	Observation of Irritation Test											
	F0			F1			F2			F3		
	1	2	3	1	2	3	1	2	3	1	2	3
Itchy skin	-	-	-	-	-	-	-	-	-	-	-	-
Redness	-	-	-	-	-	-	-	-	-	-	-	-
Swelling	-	-	-	-	-	-	-	-	-	-	-	-

Durability Test Results

Table 6. Results of pomade resistance test preparations using wigs

Formula	1 jam	2 jam	3 jam	4 jam
F0	+	+	+	+
F1	+	+	+	+
F2	+	+	+	+
F3	+	+	+	+
K+	+	+	+	+



Rinse Test Results

Table 7. The results of the rinse test of pomade preparation using a wig.

Formula	Air	Shampoo
F0	Rinse	Not done
F1	Rinse	Not done
F2	Rinse	Not done
F3	Rinse	Not done
K+	Rinse	Not done

Hedonic Test Results

Table 8. Results of the hedonic test of pomade preparations with 12 panelists

Formula	Skala to Kesuka			
	F0	F1	F2	F3
Tekstur	3	3	3	3
Color	3	2	3	4
Aroma	3	3	5	1
Containers	3	3	3	3

Stability Test Results

Table 9. The results of the stability test of the pomade preparation were at temperature ($\pm 4^{\circ}\text{C}$) and 40°C for 12 days.

No	Formula	0	1	2	3	4	5	6
1	F0:							
	Color	Ivory White	√	√	√	√	√	√
	Construction	Buble gum	√	√	√	√	√	√
2	F1:							
	Color	Cream	√	√	√	√	√	√
	Construction	Green tea	√	√	√	√	√	√
3	F2:							
	Color	Cream	√	√	√	√	√	√
	Construction	Green tea	√	√	√	√	√	√
4	F3:							
	Color	Brownish	√	√	√	√	√	√
	Construction	yellow	√	√	√	√	√	√
	K+:							
	Color	Brownish-	√	√	√	√	√	√
	Construction	white	√	√	√	√	√	√
	Tekstur	Perfume	√	√	√	√	√	√
		Semi-solid						

Based on the results of the organoleptic stability test of pomades, which can be seen in table 9 shows a positive stability test result which means that there is no change until the 12th day in the preparation F0, F1, F2, and F3 all preparations can maintain their stability.

Table 10. Pomade Homogeneity Stability Test Results of Combination of Papaya Seed Oil and VCO

Formula	0	1	2	3	4	5	6
F0	+	+	+	+	+	+	+
F1	+	+	+	+	+	+	+
F2	+	+	+	+	+	+	+
F3	+	+	+	+	+	+	+
K+	+	+	+	+	+	+	+



Based on the results of the stability test of the homogeneity of the pomade, it can be seen in table 10 that the stability test results are positive which means that there is no change in homogeneity until the 12th day in the preparation F0, F1, F2, and F3 all preparations can maintain their stability.

Table 11. Results of the pH Stability Test of Pomade Papaya Seed Oil and VCO

Ph	0	1	2	3	4	5	6
F0	5,65	5,74	5,72	5,67	5,81	5,69	5,77
F1	5,76	5,74	5,78	5,75	5,77	5,81	5,76
F2	5,69	5,69	5,63	5,72	5,69	5,68	5,67
F3	5,59	5,56	5,46	5,44	5,49	5,54	5,52
K+	5,45	5,49	5,46	5,49	5,52	5,54	5,44

Based on the results of the pomade pH stability test, it can be seen in table 11 Three repetitions are carried out for each formula to see the pH stability. Observed on day 0, after day 1, day 2 to day 12. The change in the pH value in the preparation does not appear to be very significant every day.

DISCUSSION

Evaluation and stability of pomade preparations

This study aims to evaluate pomade preparations formulated from a combination of papaya seed oil (*Carica papaya* L.) and Virgin coconut oil (VCO) can be used as pomade preparations and meet the preparation quality evaluation. Papaya seed samples in this study were obtained from the BTN Martubung complex.

The solvent used is n-hexane solvent. N-hexane solvent is a non-polar solvent and is volatile. n-Hexan has various advantages including volatile, stable and selective. Hexane is non-polar because it is made of carbon-hydrogen bonds that are nonpolar. The extraction method uses the shoxletation method because it is faster and does not require a lot of solvents.

Organoleptic Tests

The organoleptic test is carried out visually by looking at the warnna, texture and smell of the preparation. Based on the results of the organoleptic test in table 4.3, it can be seen that the results of the organoleptic test of pomade using papaya seed oil and VCO are carried out after the preparation is formulated. F0 preparations or blank preparations produce an ivory-white color with a bubble gum aroma and a semi-solid texture, while F1, F2, produce the same preparation with cream color, green tea aroma and semi-solid texture, in F3, produce a brownish-yellow color that is more intense than F1 and F2, green tea aroma and semi-solid textured. The color change in each formula F1, F2 and F3 was due to the brownish-yellow papaya seed oil sample while the positive control was brownish-white because it did not contain a papaya seed oil sample.

Homogeneity Test

The homogeneity test method is carried out by weighing 0.1 g of pomade, then applying it to transparent glass thinly evenly. Based on the results of the homogeneity test in table 4.4, pomade preparations with three repetitions found that the entire pomade formula F0, F1, F2 and F3 was homogeneous without finding any rough details in the pomade formula. Pomade is said to be homogeneous if it shows a homogeneous arrangement in which there are no rough details when observed.

pH Test

The pH check uses a pH meter device calibrated using a solution with pH 7 and pH 4, until the pH price is indicated, then the electrodes are washed with distilled water and dried with a tissue. The sample is made in a concentration of 1%, that is, it is weighed 1 g of the preparation and dissolved in 100 ml of distilled water, then the electrodes are dipped in the solution, left to show the pH price until constant, the number indicated by the pH meter is the pH of the preparation. The results of the pH test on the F0 preparation showed the pH result before the stability test 5.8 and after the stability test 5.75 on the F1 preparation showed the results of the pH value before the stability test 5.73 and after the stability test 5.78 on the F2 formula preparation the results of the pH test before the stability test showed a result of 5.66 and after the stability test 5.68 the results of the F3 preparation showed the results of the pH value before the stability test 5.46 and after the stability test 5.51 and the control preparation showed positive pH value before the stability test is 5.28 and after the stability test is 5.5 which means that all pH test results meet the pH test requirements.



Dispersion Test

A total of 0.5 g of pomade is weighed and then placed in the middle of the glass tool (watch glass), and the glass cover that has been weighed before, is left for 1 minute. The diameter of the pomade spread is measured after one minute by taking the average length of the diameter from several sides, adding a weight of 50 g then measuring again after one minute. Additions are made as much as 50 g until the weight reaches 150 g, the diameter of the spread is recorded with each weight addition.

Irritation Test

The skin irritation test examination is carried out on the back ear area for 24 hours. This test was carried out by 3 volunteers on each formula. The results of the examination are expected to show that F0, F1, F2, F3 do not cause irritation to the volunteers' skin.

Resistance Test on Hair

This test uses a wig, the test is carried out to find out the resistance of the pomade in maintaining the neatness of the hair, it is done by taking 1.5 grams of the preparation then flattening it on both palms and applying it to the wig. Carried out for 4 hours, changes in hair were observed at 1, 2, 3 and 4 hours and then the results were recorded. To compare the results of resistance in hair using positive control of Gatsby soften quiff pomade preparation. From the results of the observation of the resistance test on the hair, all the formulas of pomade preparations combined with papaya seed oil and VCO with Gatsby soften quiff pomade as a positive control can maintain the resistance of the hair or neatness of the hair.

Flush Test

This test is carried out after the pomade resistance test on the wig is carried out, by washing the hair using ordinary water, then if it does not give results, wash the hair using soap or shampoo, then the results are recorded. From the results of the rinse test observations, it was found that all formulas of F0, F1, F2, F3 pomade can be washed with water.

Hedonic Test

The preference test was carried out to find out the level of preference of the researcher for the pomade preparations made. The preference test was carried out visually on 12 panelists. Based on the results of the hedonic pomade test obtained from 12 volunteers, the assessment of the texture of the most preferred preparation was equal to a percentage of up to 50%, the assessment of the color of the most preferred preparation was F3 with a percentage of 45%, the assessment of the aroma of the most preferred preparation was F2 with a percentage of up to 55%, and the assessment of the most preferred preparation container was all the same (equivalent) with a percentage of up to 55%, and the assessment of the most preferred preparation container was all the same (equivalent) with a percentage of up to 50%.

Stability Test

This test was carried out to see the stability of the pomade with the cycling test method of each formula at a temperature of 4° and 40°C every day starting from day 0, day 1 to day 12 including organoleptic test, homogeneity test and pH test.

Organoleptic Stability Test

Based on the results of the organoleptic stability test of pomade, the results of the stability test showed a positive stability test which means that there was no change until the 12th day in the preparation of F0, F1, F2, and F3 all preparations were able to maintain their stability. F0 preparation or blank preparation produces an ivory-white color with a bubble gum aroma and a semi-solid texture, while F1, F2, produce the same preparation with cream color, green tea aroma and semi-solid texture, in the F3 formula, produce a brownish-yellow color, with a green tea aroma and a brownish-white K+ semi-solid texture, with a soft perfume aroma soft and semi-dense textured.

Homogeneity Stability Test

Homogeneity testing is carried out to ensure that the preparation does not contain particles Foreigners or insoluble particles between the base and other components in the composition that can degrade the quality of a pomade product (Salim, Niam, Ahmad Sumardianto AU, 2018).

Based on the results of the stability test of the homogeneity of the pomade, the results of the stability test showed a positive stability test result, which means that there was no change in homogeneity until the 12th day in the preparation F0, F1, F2, and F3, all preparations were able to maintain their stability.





pH Stability Test

From the observation results of the pH test, it was found that there was a change in the lowest pH value, which was 5.44 in the K⁺ formula. Meanwhile, the highest change in pH value reached 5.81 in the F1 and F2 formulas. The change in the pH value in the preparation does not appear to be very significant every day. A good pH value of pomade is 4.5-6.5 or according to the pH of human skin pH values that exceed 7 are feared to cause skin irritation. Although some pH values were found to exceed the pH of the pomade, if calculated on average, the average result of the pH of pomade F0 until the 12th day was 5.7, then the average pH of pomade F1 until the 12th day was 5.7, then the average pH of pomade F2 until the 12th day was 5.6, then the average pH of pomade F3 until the 12th day was 5.4 and the average pH of pomade K⁺ until the 12th day was 5.4. It can be concluded from the observation of the pH test of pomade preparations for 12 days that the preparation is stable and meets the pH requirements.

CONCLUSION

The results of this research can be concluded including:

1. Papaya seed oil (*Carica papaya* L.) and Virgin coconut oil (VCO) can be formulated into pomade preparations with concentrations of 5%, 7.5% and 10% stable in stability assurance.
2. Papaya seed oil (*Carica papaya* L.) and Virgin coconut oil (VCO) meet the evaluation of preparations with a concentration of F2 (7.5%) being the most preferred.

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