

LAMPIRAN

Lampiran I. Perhitungan dan Penimbangan Bahan

Sediaan dibuat 100 ml :

FORMULA

- Ekstrak daun turi : $\frac{100}{500} \times 10 = 2$ gram
- SLS : $\frac{100}{500} \times 45 = 9$ gram
- Na₂SO₄ : $\frac{100}{500} \times 30 = 6$ gram
- STTP : $\frac{100}{500} \times 15 = 3$ gram
- Asam Sitrat : $\frac{100}{500} \times 7,5 = 0,15$ gram
- Essensial Oil : q.s secukupnya
- Foam Boster : $\frac{100}{500} \times 7 = 1,4$ gram

Aquadest : $100 - (2 + 9 + 6 + 3 + 0,15 + 1,4) = 78,45$ ml

Lampiran II. Perhitungan Nilai Viskositas

➤ Minggu I

Formula I

Replikasi I T.air = 1,35 detik , T.uji = 2,84 detik

Replikasi II T.air = 1,56 detik , T.uji = 3,10 detik

Replikasi III T.air= 1,44 detik, T.uji = 3,95 detik

Replikasi I

$$\frac{\eta_{uji}}{0,899} = \frac{1,075}{0,999} \times \frac{2,84}{1,34}$$

$$\frac{\eta_{uji}}{0,899} = \frac{3,05}{1,34}$$

$$= 2,044 \text{ cPs}$$

Replikasi II

$$\frac{\eta_{uji}}{0,899} = \frac{1,076}{1,001} \times \frac{3,10}{1,56}$$

$$\frac{\eta_{uji}}{0,899} = \frac{3,33}{1,56}$$

$$= 1,918 \text{ cPs}$$

Replikasi III

$$\frac{\eta_{uji}}{0,899} = \frac{1,077}{1,082} \times \frac{3,95}{1,44}$$

$$\frac{\eta_{uji}}{0,899} = \frac{4,254}{1,558}$$

$$= 2,454 \text{ cPs}$$

Formula II

Replikasi I T.air = 1,52 detik , T.uji = 4,69 detik

Replikasi II T.air = 1,68 detik , T.uji = 3,59 detik

Replikasi III T.air= 1,46 detik, T.uji = 3,88 detik

Replikasi I

$$\frac{\eta_{uji}}{0,899} = \frac{1,16}{1,02} \times \frac{4,69}{1,52}$$

$$\frac{\eta_{uji}}{0,899} = \frac{5,440}{1,557}$$

$$= 3,140 \text{ cPs}$$

Replikasi II

$$\frac{\eta_{uji}}{0,899} = \frac{1,158}{1,0236} \times \frac{3,59}{1,68}$$

$$\frac{\eta_{uji}}{0,899} = \frac{4,160}{1,719}$$

$$= 2,175 \text{ cPs}$$

Replikasi III

$$\frac{\eta_{uji}}{0,899} = \frac{1,159}{1,024} \times \frac{3,88}{1,46}$$

$$\frac{\eta_{uji}}{0,899} = \frac{4,496}{1,496}$$

$$= 2,701 \text{ cPs}$$

Formula III

Replikasi I T.air = 1,13 detik , T.uji = 5,10 detik

Replikasi II T.air = 1,33 detik , T.uji = 4,70 detik

Replikasi III T.air= 1,39 detik, T.uji = 4,65 detik

Replikasi I

$$\frac{\eta_{uji}}{0,899} = \frac{1,099}{0,999} \times \frac{5,10}{1,13}$$

$$\frac{\eta_{uji}}{0,899} = \frac{5,60}{1,128}$$

$$= 4,462 \text{ cPs}$$

Replikasi II

$$\frac{\eta_{uji}}{0,899} = \frac{1,1}{1,001} \times \frac{4,70}{1,33}$$

$$\frac{\eta_{uji}}{0,899} = \frac{5,17}{1,331}$$

$$= 3,491 \text{ cPs}$$

Replikasi III

$$\frac{\eta_{uji}}{0,899} = \frac{1,098}{1,002} \times \frac{4,65}{1,39}$$

$$\frac{\eta_{uji}}{0,899} = \frac{5,10}{1,39}$$

$$= 3,290 \text{ cPs}$$

➤ Minggu ke-2

Formula I

Replikasi I T.air = 2,54 detik , T.uji = 1,19 detik

Replikasi II T.air = 2,95 detik , T.uji = 1,20 detik

Replikasi III T.air= 3,10 detik, T.uji = 1,60 detik

Replikasi I

$$\frac{\eta_{uji}}{0,899} = \frac{1,098}{1,004} \times \frac{2,54}{1,19}$$

$$\frac{\eta_{uji}}{0,899} = \frac{2,78}{1,194}$$

$$= 2,085 \text{ cPs}$$

Replikasi II

$$\frac{\eta_{uji}}{0,899} = \frac{1,096}{1,003} \times \frac{2,95}{1,20}$$

$$\frac{\eta_{uji}}{0,899} = \frac{3,23}{1,203}$$

$$= 2,413 \text{ cPs}$$

Replikasi III

$$\frac{\eta_{uji}}{0,899} = \frac{1,099}{1,002} \times \frac{3,10}{1,60}$$

$$\frac{\eta_{uji}}{0,899} = \frac{3,40}{1,603}$$

$$= 1,906 \text{ cPs}$$

Formula II

Replikasi I T.air = 4,30 detik , T.uji = 1,26 detik

Replikasi II T.air = 3,15 detik , T.uji = 1,12 detik

Replikasi III T.air= 3,20 detik, T.uji = 1,13 detik

Replikasi I

$$\frac{\eta_{uji}}{0,899} = \frac{1,099}{1,019} \times \frac{4,30}{1,26}$$

$$\frac{\eta_{uji}}{0,899} = \frac{4,72}{1,283}$$

$$= 3,307 \text{ cPs}$$

Replikasi II

$$\frac{\eta_{uji}}{0,899} = \frac{1,101}{1,018} \times \frac{3,15}{1,12}$$

$$\frac{\eta_{uji}}{0,899} = \frac{3,46}{1,140}$$

$$= 2,728 \text{ cPs}$$

Replikasi III

$$\frac{\eta_{uji}}{0,899} = \frac{1,103}{1,017} \times \frac{3,20}{1,13}$$

$$\frac{\eta_{uji}}{0,899} = \frac{3,52}{1,149}$$

$$= 2,754 \text{ cPs}$$

Formula III

Replikasi I T.air = 2,01 detik , T.uji = 1,12 detik

Replikasi II T.air = 4,20 detik , T.uji = 1,06 detik

Replikasi III T.air= 3,90 detik, T.uji = 1,25 detik

Replikasi I

$$\frac{\eta_{uji}}{0,899} = \frac{1,100}{0,991} \times \frac{2,01}{1,12}$$

$$\frac{\eta_{uji}}{0,899} = \frac{2,21}{1,109}$$

$$= 1,791 \text{ cPs}$$

Replikasi II

$$\frac{\eta_{uji}}{0,899} = \frac{1,101}{0,990} \times \frac{4,20}{1,06}$$

$$\frac{\eta_{uji}}{0,899} = \frac{4,62}{1,049}$$

$$= 3,959 \text{ cPs}$$

Replikasi III

$$\frac{\eta_{uji}}{0,899} = \frac{1,1}{0,989} \times \frac{3,90}{1,25}$$

$$\frac{\eta_{uji}}{0,899} = \frac{4,29}{1,236}$$

$$= 3,120 \text{ cPs}$$

➤ Minggu ke-3

Formula I

Replikasi I T.air = 2,04 detik , T.uji = 1,19 detik

Replikasi II T.air = 2,84 detik , T.uji = 1,06 detik

Replikasi III T.air= 3,00 detik, T.uji = 1,00 detik

Replikasi I

$$\frac{\eta_{uji}}{0,899} = \frac{1,007}{0,954} \times \frac{2,04}{1,19}$$

$$\frac{\eta_{uji}}{0,899} = \frac{2,054}{1,135}$$

$$= 1,626 \text{ cPs}$$

Replikasi II

$$\frac{\eta_{uji}}{0,899} = \frac{1,088}{0,955} \times \frac{2,84}{1,06}$$

$$\frac{\eta_{uji}}{0,899} = \frac{3,089}{1,012}$$

$$= 2,744 \text{ cPs}$$

Replikasi III

$$\frac{\eta_{uji}}{0,899} = \frac{1,006}{0,954} \times \frac{3,00}{1,00}$$

$$\frac{\eta_{uji}}{0,899} = \frac{3,018}{0,954}$$

$$= 2,844 \text{ cPs}$$

Formula II

Replikasi I T.air = 4,88 detik , T.uji = 1,07 detik

Replikasi II T.air = 4,73 detik , T.uji = 1,07 detik

Replikasi III T.air= 4,47 detik, T.uji = 1,06 detik

Replikasi I

$$\frac{\eta_{uji}}{0,899} = \frac{1,035}{0,985} \times \frac{4,88}{1,07}$$

$$\frac{\eta_{uji}}{0,899} = \frac{5,050}{1,053}$$

$$= 4,311 \text{ cPs}$$

Replikasi II

$$\frac{\eta_{uji}}{0,899} = \frac{1,035}{0,985} \times \frac{4,73}{1,07}$$

$$\frac{\eta_{uji}}{0,899} = \frac{4,89}{1,053}$$

$$= 4,174 \text{ cPs}$$

Replikasi III

$$\frac{\eta_{uji}}{0,899} = \frac{1,035}{0,985} \times \frac{4,47}{1,06}$$

$$\frac{\eta_{uji}}{0,899} = \frac{4,62}{1,044}$$

$$= 3,978 \text{ cPs}$$

Formula III

Replikasi I T.air = 4,81 detik , T.uji = 1,06 detik

Replikasi II T.air = 4,10 detik , T.uji = 1,19 detik

Replikasi III T.air= 3,50 detik, T.uji = 1,06 detik

Replikasi I

$$\frac{\eta_{uji}}{0,899} = \frac{1,105}{0,996} \times \frac{4,81}{1,06}$$

$$\frac{\eta_{uji}}{0,899} = \frac{5,31}{1,055}$$

$$= 4,524 \text{ cPs}$$

Replikasi II

$$\frac{\eta_{uji}}{0,899} = \frac{1,104}{0,996} \times \frac{4,10}{1,19}$$

$$\frac{\eta_{uji}}{0,899} = \frac{4,526}{1,185}$$

$$= 3,433 \text{ cPs}$$

Replikasi III

$$\frac{\eta_{uji}}{0,899} = \frac{1,104}{0,996} \times \frac{3,50}{1,06}$$

$$\frac{\eta_{uji}}{0,899} = \frac{3,86}{1,055}$$

$$= 3,289 \text{ cPs}$$

➤ Minggu ke-4

Formula I

Replikasi I T.air = 2,07 detik , T.uji = 1,09 detik

Replikasi II T.air = 2,95 detik , T.uji = 1,01 detik

Replikasi III T.air= 3,01 detik, T.uji = 1,02 detik

Replikasi I

$$\frac{\eta_{uji}}{0,899} = \frac{1,003}{0,948} \times \frac{2,07}{1,09}$$

$$\frac{\eta_{uji}}{0,899} = \frac{2,07}{1,033}$$

$$= 1,801 \text{ cPs}$$

Replikasi II

$$\frac{\eta_{uji}}{0,899} = \frac{1,002}{0,946} \times \frac{2,95}{1,01}$$

$$\frac{\eta_{uji}}{0,899} = \frac{2,95}{0,955}$$

$$= 2,777 \text{ cPs}$$

Replikasi III

$$\frac{\eta_{uji}}{0,899} = \frac{1,005}{0,949} \times \frac{3,01}{1,02}$$

$$\frac{\eta_{uji}}{0,899} = \frac{3,02}{0,967}$$

$$= 2,806 \text{ Cps}$$

Formula II

Replikasi I T.air = 4,05 detik , T.uji = 1,05 detik

Replikasi II T.air = 3,01 detik , T.uji = 1,04 detik

Replikasi III T.air= 2,05 detik, T.uji = 1,03 detik

Replikasi I

$$\frac{\eta_{uji}}{0,899} = \frac{1,035}{0,985} \times \frac{4,05}{1,05}$$

$$\frac{\eta_{uji}}{0,899} = \frac{4,19}{1,034}$$

$$= 3,642 \text{ cPs}$$

Replikasi II

$$\frac{\eta_{uji}}{0,899} = \frac{1,034}{0,984} \times \frac{3,01}{1,04}$$

$$\frac{\eta_{uji}}{0,899} = \frac{3,11}{1,023}$$

$$= 2,733 \text{ cPs}$$

Replikasi III

$$\frac{\eta_{uji}}{0,899} = \frac{1,036}{0,985} \times \frac{2,05}{1,03}$$

$$\frac{\eta_{uji}}{0,899} = \frac{2,12}{1,014}$$

$$= 1,879 \text{ cPs}$$

Formula III

Replikasi I T.air = 4,45 detik , T.uji = 1,03 detik

Replikasi II T.air = 4,50 detik , T.uji = 1,07 detik

Replikasi III T.air= 3,95 detik, T.uji = 1,06 detik

Replikasi I

$$\frac{\eta_{uji}}{0,899} = \frac{1,098}{0,999} \times \frac{4,45}{1,03}$$

$$\frac{\eta_{uji}}{0,899} = \frac{4,88}{1,028}$$

$$= 4,267 \text{ cPs}$$

Replikasi II

$$\frac{\eta_{uji}}{0,899} = \frac{1,097}{0,999} \times \frac{4,50}{1,07}$$

$$\frac{\eta_{uji}}{0,899} = \frac{4,93}{1,068}$$

$$= 4,149 \text{ cPs}$$

Replikasi III

$$\frac{\eta_{uji}}{0,899} = \frac{1,090}{0,99} \times \frac{3,95}{1,06}$$

$$\frac{\eta_{uji}}{0,899} = \frac{4,30}{1,049}$$

$$= 3,685 \text{ cPs}$$

Lampiran III. Proses Tahapan Infusa

No	Gambar	Keterangan
1		[Memisahkan daun turi dari tangkainnya
2		Menimbang daun turi sebanyak 10 gram
3		• Masukkan daun turi kedalam beaker glass 250 ml dan tambahkan air aquadest sebanyak 100 ml, • kemudian dilakukan pemanasan didalam panci yang sudah berisi dengan air selama 30 menit pada suhu 80°C dan sesekali sambil dilakukan pengadukann • tunggu hingga suhu turun lalu saring menggunakan kertas saring.

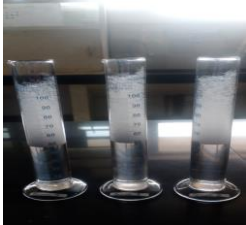
Lampiran IV. Proses Pembuatan Sediaan Sabun

No	Gambar	Keterangan
1		Menimbang ekstrak daun turi sebanyak 2 gram
2		Menimbang SLS sebanyak 9 gram
3		Menimbang Foam booster sebanyak 1,4 gram
4		Menimbang Na_2SO_4 sebanyak 6 gram
5		Menimbang STTP sebanyak 3 gram
6		Menimbang asam sitrat 0,15 gram

No	Gambar	Keterangan
1	 	SLS + Foam boster aduk ad larut
2		Masukkan Na_2SO_4
3		Melarutkan STTP dengan aquadest secukupnya aduk ad homogen
4		Melarutkan asam sitrat dengan aquadest secukupnya aduk ad homogen
5		Masukkan STTP yang sudah dilarutkan kedalam campuran sedikit demi sedikit
6		Masukkan asam sitrat yang sudah dilarutkan kedalam campuran sedikit demi seedikit
7	 	Masukkan larutan nanopartikel perak sesuai dengan konsentrasi pada masing masing formula + oleum rosae sebagai pewangi

No	gambar	Keterangan
8		Tambahkan sisa aquadest aduk ad homogen dan Diamkan sediaan sabun selam ± 24 jam

Lampiran V. Uji Sifat Fisik Sabun Nanopartikel Perak

No	Gambar	Keterangan
1		Uji pH
2		Uji Homogenitas
3		Uji Tinggi Busa
4		Uji Viskositas

Lampiran VI. Tampilan Publikasi Jurnal

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FORMULATION DAN PHYSICAL STABILITY TEST OF TURI LEAF EXTRACT (SESBANIA GRANDIFLORA L.) SILVER NANOPARTICLE SOAP
Astri Aulia Savitri, Wilda Amananti, Joko Santoso

ABSTRACT

One metal that is widely researched is silver (Ag) which can be used as an antibacterial and antifungal. The method that is widely developed is the biological method, also called biosynthesis. Biosynthesis is a synthesis method using media from plant extracts. This research was conducted to determine the best formulation of Ag nanoparticle soap from turi (sesbania grandiflora) leaf extract based on its stability test. To obtain turi leaf extraction using the infusion method, a flavonoid compound test was carried out to determine the flavonoid compound content. After knowing the existence of flavonoid compounds, the wavelength was determined using UV-Vis Spectrophotometry. In the nanoparticle soap formula, a nanoparticle soap preparation was made which was then tested for the physical quality of Ag nanoparticle soap from turi leaf extract (Sesbania Grandiflora L.). The gel-shaped preparation has a characteristic oleum rosae odor and a yellow to blackish soap color. Test the homogeneity to see if there are coarse grains on the surface of the soap. The specific gravity test results of all soap formulations meet the criteria for good soap. The high foam value in soap preparations is between 6.1 – 12.5 mM. The results of measuring the absorption values for concentrations of 1 mM, 2 mM, and 3 mM show that the optimum absorption results in liquid soap preparations are a concentration of 3 mM with a wavelength of 300 nm with an absorbance value of 1.105. The research results showed that turi leaf extract (sesbania grandiflora L.) had an effect on the physical stability of Ag nanoparticle soap and met the standards set by SNI. Among formulation I with a concentration of 0.03, formulation II with a concentration of 0.06 and formulation III with a concentration of 0.09, the turi leaf extract soap preparation showed the best physical properties in formulation I with a concentration of 0.03 in the pH stability test.

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(*Sesbania grandiflora* L.)

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 Pekerjaan Ayah : Pelaut
 Pekerjaan Ibu : Ibu Rumah Tangga
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 Nanopartikel Perak Ekstrak Daun Turi
 (*sesbania grandiflora L.*)