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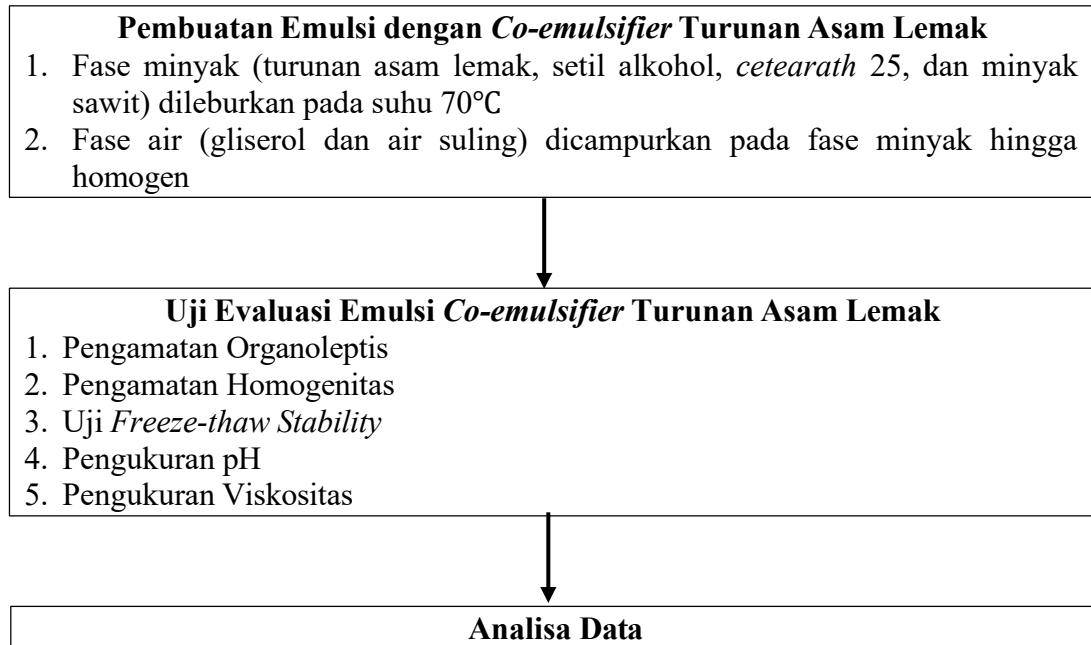
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LAMPIRAN

Lampiran 1. Skema Penelitian



Lampiran 2. Perhitungan Formulasi Emulsi

1. Formulasi 2,5% Asam Laurat

- Minyak kelapa sawit $= \left(\frac{10}{100} \times 100 \right) + 10\% = 11 \text{ ml}$
- Asam Laurat $= \left(\frac{2,5}{100} \times 100 \right) + 10\% = 2,5 \text{ g}$
- *Cetearath 25* $= \left(\frac{1}{100} \times 100 \right) + 10\% = 0,1 \text{ g}$
- Setil Alkohol $= \left(\frac{2}{100} \times 100 \right) + 10\% = 0,2 \text{ g}$
- Gliserol $= \left(\frac{5}{100} \times 100 \right) + 10\% = 5,5 \text{ ml}$
- Air Suling $= 100 \text{ ml} - (11 + 2,5 + 0,1 + 0,2 + 5,5)$
- Air Suling (Perlu) $= 79 \text{ ml}$

2. Formulasi 5% Asam Laurat

- Minyak kelapa sawit $= \left(\frac{10}{100} \times 100 \right) + 10\% = 11 \text{ ml}$
- Asam Laurat $= \left(\frac{5}{100} \times 100 \right) + 10\% = 5,5 \text{ g}$
- *Cetearath 25* $= \left(\frac{1}{100} \times 100 \right) + 10\% = 0,1 \text{ g}$
- Setil Alkohol $= \left(\frac{2}{100} \times 100 \right) + 10\% = 0,2 \text{ g}$
- Gliserol $= \left(\frac{5}{100} \times 100 \right) + 10\% = 5,5 \text{ ml}$
- Air Suling $= 100 \text{ ml} - (11 + 5,5 + 0,1 + 0,2 + 5,5)$
- Air Suling (Perlu) $= 77 \text{ ml}$

3. Formulasi 10% Asam Laurat

- Minyak kelapa sawit $= \left(\frac{10}{100} \times 100 \right) + 10\% = 11 \text{ ml}$

- Asam Laurat $= \left(\frac{10}{100} \times 100 \right) + 10\% = 11 \text{ g}$
- *Cetearath 25* $= \left(\frac{1}{100} \times 100 \right) + 10\% = 0,1 \text{ g}$
- Setil Alkohol $= \left(\frac{2}{100} \times 100 \right) + 10\% = 0,2 \text{ g}$
- Gliserol $= \left(\frac{5}{100} \times 100 \right) + 10\% = 5,5 \text{ ml}$
- Air Suling $= 100 \text{ ml} - (11 + 11 + 0,1 + 0,2 + 5,5)$
- Air Suling (Perlu) $= 72 \text{ ml}$

4. Formulasi 2,5% Asam Miristat

- Minyak kelapa sawit $= \left(\frac{10}{100} \times 100 \right) + 10\% = 11 \text{ ml}$
- Asam Miristat $= \left(\frac{2,5}{100} \times 100 \right) + 10\% = 2,5 \text{ g}$
- *Cetearath 25* $= \left(\frac{1}{100} \times 100 \right) + 10\% = 0,1 \text{ g}$
- Setil Alkohol $= \left(\frac{2}{100} \times 100 \right) + 10\% = 0,2 \text{ g}$
- Gliserol $= \left(\frac{5}{100} \times 100 \right) + 10\% = 5,5 \text{ ml}$
- Air Suling $= 100 \text{ ml} - (11 + 2,5 + 0,1 + 0,2 + 5,5)$
- Air Suling (Perlu) $= 79 \text{ ml}$

5. Formulasi 5% Asam Miristat

- Minyak kelapa sawit $= \left(\frac{10}{100} \times 100 \right) + 10\% = 11 \text{ ml}$
- Asam Miristat $= \left(\frac{5}{100} \times 100 \right) + 10\% = 5,5 \text{ g}$
- *Cetearath 25* $= \left(\frac{1}{100} \times 100 \right) + 10\% = 0,1 \text{ g}$
- Setil Alkohol $= \left(\frac{2}{100} \times 100 \right) + 10\% = 0,2 \text{ g}$

- Gliserol $= \left(\frac{5}{100} \times 100 \right) + 10\% = 5,5 \text{ ml}$
- Air Suling $= 100 \text{ ml} - (11 + 5,5 + 0,1 + 0,2 + 5,5)$
- Air Suling (Perlu) $= 77 \text{ ml}$

6. Formulasi 10% Asam Miristat

- Minyak kelapa sawit $= \left(\frac{10}{100} \times 100 \right) + 10\% = 11 \text{ ml}$
- Asam Miristat $= \left(\frac{10}{100} \times 100 \right) + 10\% = 11 \text{ g}$
- *Cetearath 25* $= \left(\frac{1}{100} \times 100 \right) + 10\% = 0,1 \text{ g}$
- Setil Alkohol $= \left(\frac{2}{100} \times 100 \right) + 10\% = 0,2 \text{ g}$
- Gliserol $= \left(\frac{5}{100} \times 100 \right) + 10\% = 5,5 \text{ ml}$
- Air Suling $= 100 \text{ ml} - (11 + 11 + 0,1 + 0,2 + 5,5)$
- Air Suling (Perlu) $= 72 \text{ ml}$

7. Formulasi 2,5% Asam Oleat

- Minyak kelapa sawit $= \left(\frac{10}{100} \times 100 \right) + 10\% = 11 \text{ ml}$
- Asam Oleat $= \left(\frac{2,5}{100} \times 100 \right) + 10\% = 2,5 \text{ g}$
- *Cetearath 25* $= \left(\frac{1}{100} \times 100 \right) + 10\% = 0,1 \text{ g}$
- Setil Alkohol $= \left(\frac{2}{100} \times 100 \right) + 10\% = 0,2 \text{ g}$
- Gliserol $= \left(\frac{5}{100} \times 100 \right) + 10\% = 5,5 \text{ ml}$
- Air Suling $= 100 \text{ ml} - (11 + 2,5 + 0,1 + 0,2 + 5,5)$
- Air Suling (Perlu) $= 79 \text{ ml}$

8. Formulasi 5% Asam Oleat

- Minyak kelapa sawit $= \left(\frac{10}{100} \times 100\right) + 10\% = 11 \text{ ml}$
- Asam Oleat $= \left(\frac{5}{100} \times 100\right) + 10\% = 5,5 \text{ g}$
- *Cetearath 25* $= \left(\frac{1}{100} \times 100\right) + 10\% = 0,1 \text{ g}$
- Setil Alkohol $= \left(\frac{2}{100} \times 100\right) + 10\% = 0,2 \text{ g}$
- Gliserol $= \left(\frac{5}{100} \times 100\right) + 10\% = 5,5 \text{ ml}$
- Air Suling $= 100 \text{ ml} - (11 + 5,5 + 0,1 + 0,2 + 5,5)$
- Air Suling (Perlu) $= 77 \text{ ml}$

9. Formulasi 10% Asam Oleat

- Minyak kelapa sawit $= \left(\frac{10}{100} \times 100\right) + 10\% = 11 \text{ ml}$
- Asam Oleat $= \left(\frac{10}{100} \times 100\right) + 10\% = 11 \text{ g}$
- *Cetearath 25* $= \left(\frac{1}{100} \times 100\right) + 10\% = 0,1 \text{ g}$
- Setil Alkohol $= \left(\frac{2}{100} \times 100\right) + 10\% = 0,2 \text{ g}$
- Gliserol $= \left(\frac{5}{100} \times 100\right) + 10\% = 5,5 \text{ ml}$
- Air Suling $= 100 \text{ ml} - (11 + 11 + 0,1 + 0,2 + 5,5)$
- Air Suling (Perlu) $= 72 \text{ ml}$

10. Formulasi 2,5% Asam Palmitat

- Minyak kelapa sawit $= \left(\frac{10}{100} \times 100\right) + 10\% = 11 \text{ ml}$
- Asam Palmitat $= \left(\frac{2,5}{100} \times 100\right) + 10\% = 2,5 \text{ g}$

- *Cetearath 25* $= \left(\frac{1}{100} \times 100 \right) + 10\% = 0,1 \text{ g}$
- Setil Alkohol $= \left(\frac{2}{100} \times 100 \right) + 10\% = 0,2 \text{ g}$
- Gliserol $= \left(\frac{5}{100} \times 100 \right) + 10\% = 5,5 \text{ ml}$
- Air Suling $= 100 \text{ ml} - (11 + 2,5 + 0,1 + 0,2 + 5,5)$
- Air Suling (Perlu) $= 79 \text{ ml}$

11. Formulasi 5% Asam Palmitat

- Minyak kelapa sawit $= \left(\frac{10}{100} \times 100 \right) + 10\% = 11 \text{ ml}$
- Asam Palmitat $= \left(\frac{5}{100} \times 100 \right) + 10\% = 5,5 \text{ g}$
- *Cetearath 25* $= \left(\frac{1}{100} \times 100 \right) + 10\% = 0,1 \text{ g}$
- Setil Alkohol $= \left(\frac{2}{100} \times 100 \right) + 10\% = 0,2 \text{ g}$
- Gliserol $= \left(\frac{5}{100} \times 100 \right) + 10\% = 5,5 \text{ ml}$
- Air Suling $= 100 \text{ ml} - (11 + 5,5 + 0,1 + 0,2 + 5,5)$
- Air Suling (Perlu) $= 77 \text{ ml}$

12. Formulasi 10% Asam Palmitat

- Minyak kelapa sawit $= \left(\frac{10}{100} \times 100 \right) + 10\% = 11 \text{ ml}$
- Asam Palmitat $= \left(\frac{10}{100} \times 100 \right) + 10\% = 11 \text{ g}$
- *Cetearath 25* $= \left(\frac{1}{100} \times 100 \right) + 10\% = 0,1 \text{ g}$
- Setil Alkohol $= \left(\frac{2}{100} \times 100 \right) + 10\% = 0,2 \text{ g}$
- Gliserol $= \left(\frac{5}{100} \times 100 \right) + 10\% = 5,5 \text{ ml}$

- Air Suling $= 100 \text{ ml} - (11 + 11 + 0,1 + 0,2 + 5,5)$
- Air Suling (Perlu) $= 72 \text{ ml}$

13. Formulasi 2,5% Asam Stearat

- Minyak kelapa sawit $= \left(\frac{10}{100} \times 100\right) + 10\% = 11 \text{ ml}$
- Asam Stearat $= \left(\frac{2,5}{100} \times 100\right) + 10\% = 2,5 \text{ g}$
- *Cetearath 25* $= \left(\frac{1}{100} \times 100\right) + 10\% = 0,1 \text{ g}$
- Setil Alkohol $= \left(\frac{2}{100} \times 100\right) + 10\% = 0,2 \text{ g}$
- Gliserol $= \left(\frac{5}{100} \times 100\right) + 10\% = 5,5 \text{ ml}$
- Air Suling $= 100 \text{ ml} - (11 + 2,5 + 0,1 + 0,2 + 5,5)$
- Air Suling (Perlu) $= 79 \text{ ml}$

14. Formulasi 5% Asam Stearat

- Minyak kelapa sawit $= \left(\frac{10}{100} \times 100\right) + 10\% = 11 \text{ ml}$
- Asam Stearat $= \left(\frac{5}{100} \times 100\right) + 10\% = 5,5 \text{ g}$
- *Cetearath 25* $= \left(\frac{1}{100} \times 100\right) + 10\% = 0,1 \text{ g}$
- Setil Alkohol $= \left(\frac{2}{100} \times 100\right) + 10\% = 0,2 \text{ g}$
- Gliserol $= \left(\frac{5}{100} \times 100\right) + 10\% = 5,5 \text{ ml}$
- Air Suling $= 100 \text{ ml} - (11 + 5,5 + 0,1 + 0,2 + 5,5)$
- Air Suling (Perlu) $= 77 \text{ ml}$

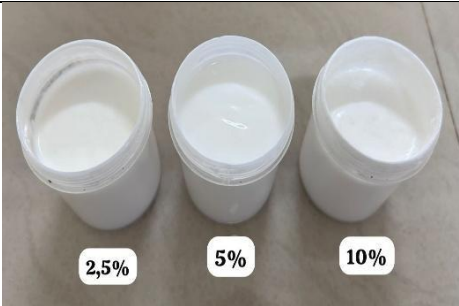
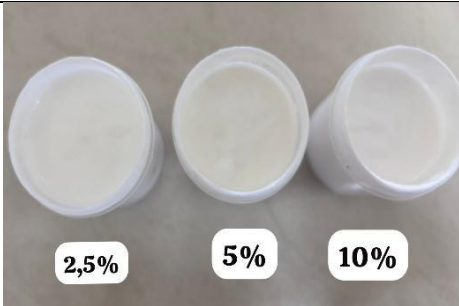
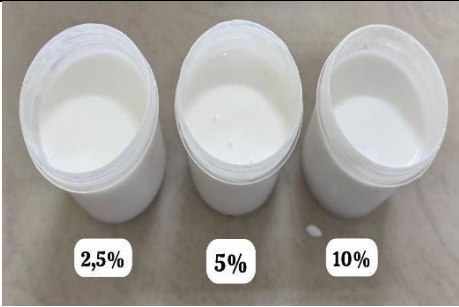
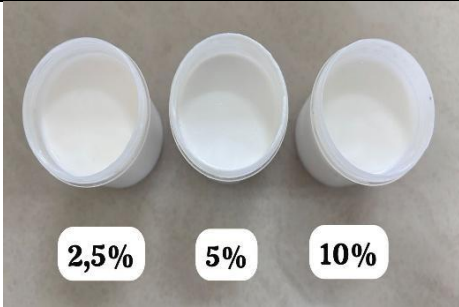
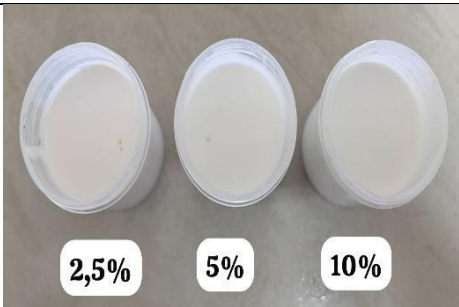
15. Formulasi 10% Asam Stearat

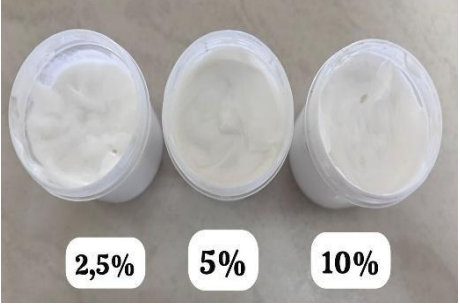
- Minyak kelapa sawit $= \left(\frac{10}{100} \times 100\right) + 10\% = 11 \text{ ml}$

- Asam Stearat $\quad \quad \quad = \left(\frac{10}{100} \times 100 \right) + 10\% = 11 \text{ g}$
- *Cetearath 25* $\quad \quad \quad = \left(\frac{1}{100} \times 100 \right) + 10\% = 0,1 \text{ g}$
- Setil Alkohol $\quad \quad \quad = \left(\frac{2}{100} \times 100 \right) + 10\% = 0,2 \text{ g}$
- Gliserol $\quad \quad \quad = \left(\frac{5}{100} \times 100 \right) + 10\% = 5,5 \text{ ml}$
- Air Suling $\quad \quad \quad = 100 \text{ ml} - (11 + 11 + 0,1 + 0,2 + 5,5)$
- Air Suling (Perlu) $\quad \quad \quad = 72 \text{ ml}$

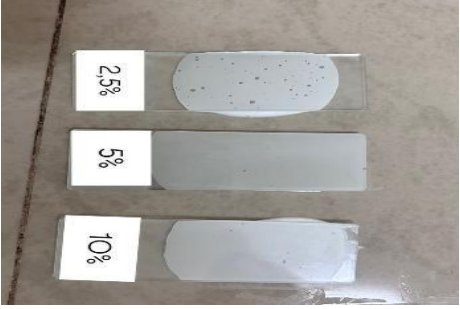
Lampiran 3. Hasil Uji Evaluasi

1. Uji Organoleptik

Sebelum	Sesudah
 2,5% 5% 10% Asam Stearat	 2,5% 5% 10% Asam Stearat
 2,5% 5% 10% Asam Laurat	 2,5% 5% 10% Asam Laurat
 2,5% 5% 10% Asam Oleat	 2,5% 5% 10% Asam Oleat

 2,5% 5% 10% Asam Miristat	 2,5% 5% 10% Asam Miristat
 2,5% 5% 10% Asam Palmitat	 2,5% 5% 10% Asam Palmitat

2. Uji Homogenitas

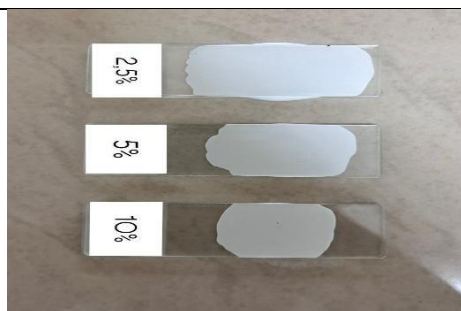
Sebelum	Sesudah
 2,5% 5% 10% Asam Stearat	 2,5% 5% 10% Asam Stearat



Asam Laurat



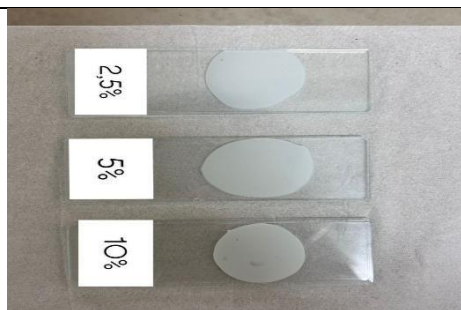
Asam Laurat



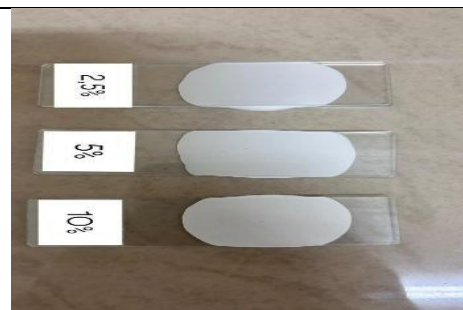
Asam Oleat



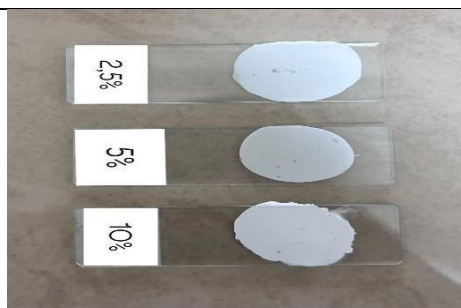
Asam Oleat



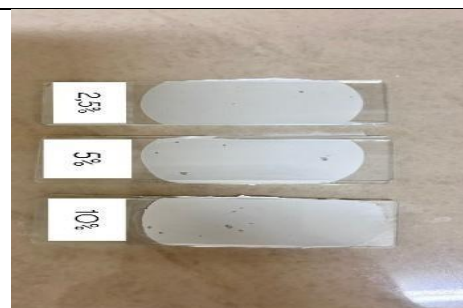
Asam Miristat



Asam Miristat

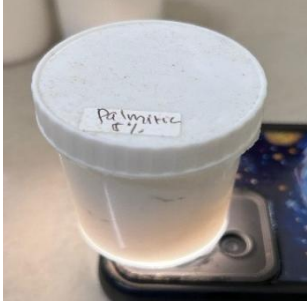
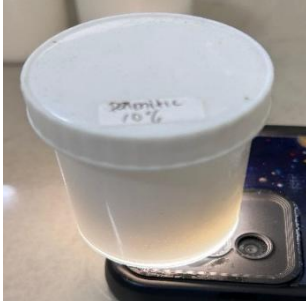
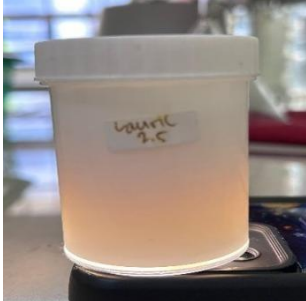
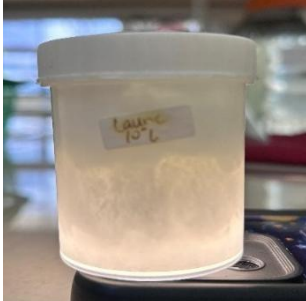
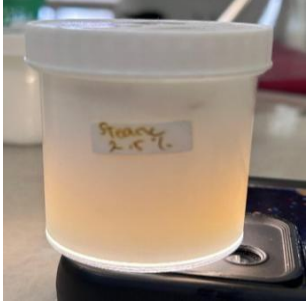
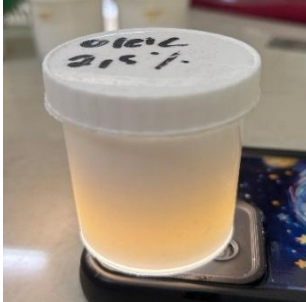
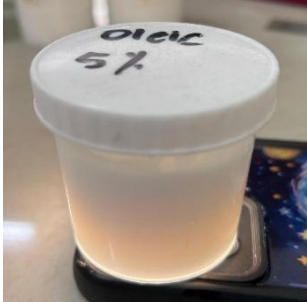
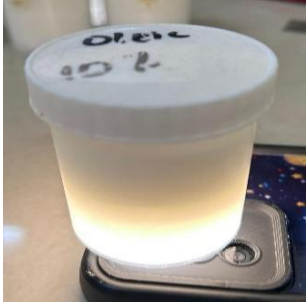


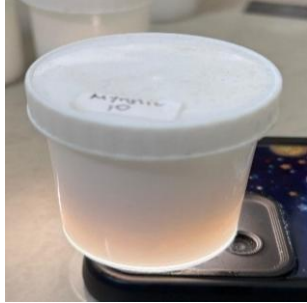
Asam Palmitat



Asam Palmitat

3. *Freeze-thaw Stability*

		
2,5% Asam Palmitat	5% Asam Palmitat	10% Asam Palmitat
		
2,5% Asam Laurat	5% Asam Laurat 5%	10% Asam Laurat
		
2,5% Asam Stearat	5% Asam Stearat	10% Asam Stearat
		

2,5% Asam Oleat	5% Asam Oleat	10% Asam Oleat
		
2,5% Asam Miristat	5% Asam Miristat	10% Asam Miristat

4. Pengukuran Viskositas

		
2,5% Asam Miristat	5% Asam Miristat	10% Asam Miristat
		
2,5% Asam Laurat	5% Asam Laurat	10% Asam Laurat



5. Pengukuran pH

		
2,5% Asam Oleat	5% Asam Oleat	10% Asam Oleat
		
2,5% Asam Miristat	5% Asam Miristat	10% Asam Miristat
		
2,5% Asam Laurat	5% Asam Laurat	10% Asam Laurat
		

2,5% Asam Palmitat	5% Asam Palmitat	10% Asam Palmitat
 A digital pH meter with a black casing and a green LCD screen. The screen displays '4.77' in large digits and '26.0' in smaller digits to the right. Below the screen are four orange rotary buttons labeled 'HOLD', 'RANGE', 'MEM', and 'MR'. The brand name 'HANNA Instruments' is visible on the right side of the device.	 A digital pH meter with a black casing and a green LCD screen. The screen displays '5.12' in large digits and '26.0' in smaller digits to the right. Below the screen are four orange rotary buttons labeled 'HOLD', 'RANGE', 'MEM', and 'MR'. The brand name 'HANNA Instruments' is visible on the right side of the device.	 A digital pH meter with a black casing and a green LCD screen. The screen displays '4.97' in large digits and '26.0' in smaller digits to the right. Below the screen are four orange rotary buttons labeled 'HOLD', 'RANGE', 'MEM', and 'MR'. The brand name 'HANNA Instruments' is visible on the right side of the device.
2,5% Asam Stearat	5% Asam Stearat	10% Asam Stearat