

## **BAB V**

### **KESIMPULAN DAN SARAN**

#### **A. Kesimpulan**

Berdasarkan kesimpulan yang didapat dari penelitian ini adalah pertama, ekstrak daging lidah buaya menghasilkan daerah formula optimum krim sesuai dengan sifat yang dikehendaki yaitu asam stearat sebesar 1.545 % dan trietanolamin sebesar 2.455 %.

Kedua, harga  $IC_{50}$  dari krim ekstrak daging lidah buaya (*Aloe vera* Linn.) terbukti dengan komposisi optimum terhadap radikal bebas DPPH (1,1-difenil-2-pikrilhidrazil) dengan  $IC_{50}$  sebesar 203,80 ppm.

#### **B. Saran**

Pertama, perlu dilakukan pengujian aktivitas antioksidan ekstrak daging lidah buaya dengan bentuk sediaan yang berbeda.

Kedua, perlu dilakukan penelitian antioksidan krim ekstrak daging lidah buaya dengan menggunakan metode selain DPPH untuk mengetahui seberapa besar potensi antioksidan terhadap jenis radikal yang lain.

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## Lampiran 1. Determinasi



No : 133/DET/UPT-LAB/28/V/2014  
Hal : Surat Keterangan Determinasi Tumbuhan

Menerangkan bahwa :

Nama : Sulastris  
NIM : 16102980 A  
Fakultas : Farmasi Universitas Setia Budi

Telah mendeterminasikan tumbuhan : **Lidah buaya (*Aloe barbadensis* Mill.)**

Determinasi berdasarkan Steenis: Baker : Flora of Java

1b – 2b – 3b – 4b – 12b – 13b – 14b – 17b – 18b – 19b – 20b – 21b – 22b – 23b – 24b – 25b –  
26b – 27a – 28b – 29b – 30b – 31a – 32a – 33a – 34a – 35b – 37b – 38b – 39b – 41b – 42b – 44b  
– 45b – 46e – 50b – 54b – 56b – 57a – 58b – 59d – 72b – 73b – 74a – 75b – 76a – 77a – 78a –  
79b – 80a – 81b – 86a – 87a – 88b – 89b – 91a – 92b – 93b – 94a. familia Liliaceae. 1a – 2b.

*Aloe barbadensis* Mill. Sinonim: *Aloe vera* (L.) Webb.

Deskripsi :

Batang : tidak terlihat karena tertutup oleh daun.  
Daun : tersusun roset akar, bentuk menyerupai pedang, ujung meruncing, berdaging tebal,  
tidak bertulang, mengandung banyak air dan getah, permukaan dilapisi lilin, tepi  
bergerigi kasar seperti duri, permukaan bagian atas rata, permukaan bagian bawah  
cembung, warna hijau.  
Bunga : berukuran kecil, tersusun melingkar pada tangkai bunga majemuk menyerupai  
sumbu vertikal yang keluar dari ketiak daun, tersusun tandan, warna merah  
kecoklatan,  
Akar : akar serabut, seringkali tampak di permukaan tanah.

Pustaka : Backer c.A. & Brink R.C.B. (1965): *Flora of Java* (Spermatophytes only).  
N.V.P. Noordhoff – Groningen – The Netherlands



Surakarta, 28 Mei 2014  
Tim determinasi

Dra. Kartinah Wirjosandjojo, SU.

**Lampiran 2. Gambar tanaman lidah buaya**



**Gambar 19. Tanaman lidah buaya**

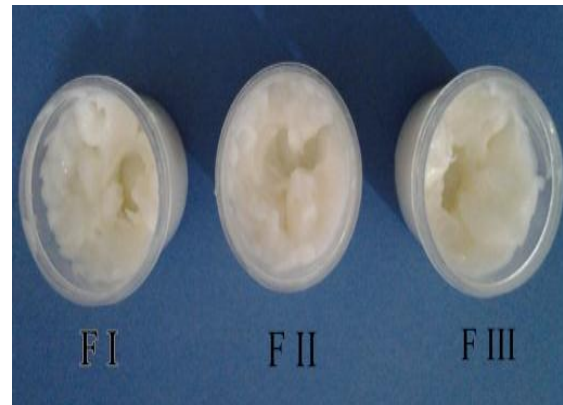


**Gambar 20. Ekstrak daging lidah buaya**

**Lampiran 3. Gambar alat uji dan hasil krim****Gambar 21. Alat uji viskositas****Gambar 22. Timbangan elektrik****Gambar 23. Alat uji daya sebar dan timbangan****Gambar 24. Alat uji pH**



**Gambar 25. Spektrofotometer**



**Gambar 26. Krim ekstrak daging lidah buaya**



**Flavonoid**



**Saponin**

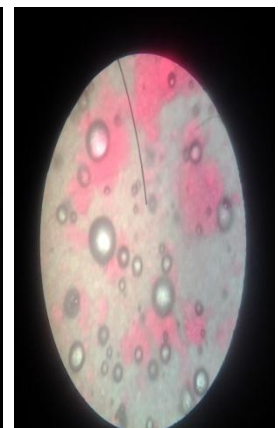


**Bebas etanol**

**Gambar 27. Hasil identifikasi senyawa ekstrak daging lidah buaya**



**+ metilen blue**



**+ sudan III**

**Gambar 28. Uji tipe krim**

#### Lampiran 4. Data uji viskositas krim ekstrak daging lidah buaya

| Waktupengamatan | Viskositas (dPas) |     |     |            |     |     |             |     |     |
|-----------------|-------------------|-----|-----|------------|-----|-----|-------------|-----|-----|
|                 | Formula I         |     |     | Formula II |     |     | Formula III |     |     |
|                 | 1                 | 2   | 3   | 1          | 2   | 3   | 1           | 2   | 3   |
| <b>Minggu 0</b> | 270               | 300 | 300 | 280        | 300 | 280 | 270         | 260 | 240 |
| <b>Minggu 1</b> | 260               | 300 | 300 | 270        | 300 | 270 | 260         | 255 | 220 |
| <b>Minggu 2</b> | 240               | 280 | 290 | 270        | 280 | 260 | 260         | 250 | 215 |
| <b>Minggu 3</b> | 240               | 260 | 270 | 250        | 260 | 250 | 250         | 240 | 210 |
| <b>Minggu 4</b> | 230               | 250 | 260 | 250        | 260 | 250 | 240         | 240 | 210 |

Rata-rata  $\pm$  SD dan uji viskositas

| Pemeriksaanwaktu | Viskositas (dPas $\pm$ SD) |                   |                    |
|------------------|----------------------------|-------------------|--------------------|
|                  | Formula I                  | Fomula II         | Formula III        |
| <b>Minggu 0</b>  | 290 $\pm$ 14.14            | 286.67 $\pm$ 9.43 | 256.67 $\pm$ 12.47 |
| <b>Minggu 1</b>  | 286.67 $\pm$ 18.85         | 280 $\pm$ 14.14   | 245 $\pm$ 17.79    |
| <b>Minggu 2</b>  | 270 $\pm$ 21.60            | 270 $\pm$ 8.16    | 241.67 $\pm$ 19.29 |
| <b>Minggu 3</b>  | 256.67 $\pm$ 12.47         | 253.33 $\pm$ 4.71 | 233.33 $\pm$ 16.99 |
| <b>Minggu 4</b>  | 246.67 $\pm$ 12.47         | 253.33 $\pm$ 4.71 | 230 $\pm$ 14.14    |

### Lampiran 5. Data pengujian Daya sebar krim ekstrak daging lidah buaya

#### a. pengujian daya sebar minggu 0

| Formula            | Bobot   | Daya sebar (cm) |     |     |     |             |     |     |     |             |     |     |     |
|--------------------|---------|-----------------|-----|-----|-----|-------------|-----|-----|-----|-------------|-----|-----|-----|
|                    |         | Replikasi 1     |     |     |     | Replikasi 2 |     |     |     | Replikasi 3 |     |     |     |
|                    |         | 1               | 2   | 3   | 4   | 1           | 2   | 3   | 4   | 1           | 2   | 3   | 4   |
| <b>Formula I</b>   | 55.085  | 3.6             | 3.7 | 3.5 | 3.8 | 3.1         | 3.0 | 3.0 | 2.9 | 2.7         | 3.0 | 2.9 | 2.9 |
|                    | 105.085 | 3.8             | 3.9 | 3.8 | 3.9 | 3.3         | 3.2 | 3.2 | 3.0 | 2.9         | 3.2 | 3.1 | 3.0 |
|                    | 205.085 | 4.0             | 4.1 | 4.1 | 4.2 | 3.4         | 3.4 | 3.3 | 3.2 | 3.1         | 3.4 | 3.2 | 3.2 |
|                    | 355.085 | 4.2             | 4.3 | 4.4 | 4.4 | 3.5         | 3.6 | 3.4 | 3.5 | 3.3         | 3.6 | 3.4 | 3.5 |
|                    | 555.085 | 4.4             | 4.5 | 4.6 | 4.6 | 3.6         | 3.8 | 3.6 | 3.7 | 3.5         | 3.7 | 3.6 | 3.8 |
| <b>Formula II</b>  | 55.085  | 3.4             | 3.7 | 3.5 | 3.7 | 3.0         | 2.9 | 2.8 | 3.1 | 3.4         | 3.5 | 3.6 | 3.8 |
|                    | 105.085 | 3.5             | 3.7 | 3.6 | 3.8 | 3.2         | 3.3 | 3.4 | 3.2 | 3.6         | 3.7 | 3.9 | 3.8 |
|                    | 205.085 | 3.7             | 3.9 | 3.8 | 3.9 | 3.3         | 3.4 | 3.4 | 3.3 | 3.8         | 3.9 | 4.0 | 4.1 |
|                    | 355.085 | 3.8             | 4.0 | 4.0 | 4.1 | 3.5         | 3.4 | 3.5 | 3.5 | 4.0         | 4.0 | 4.2 | 4.2 |
|                    | 555.085 | 4.1             | 4.3 | 4.4 | 4.5 | 3.7         | 3.6 | 3.6 | 3.7 | 4.3         | 4.2 | 4.5 | 4.4 |
| <b>Formula III</b> | 55.085  | 3.5             | 3.7 | 3.6 | 3.8 | 3.6         | 3.8 | 3.7 | 3.8 | 3.7         | 3.8 | 3.9 | 3.6 |
|                    | 105.085 | 3.7             | 3.9 | 3.8 | 3.8 | 3.8         | 4.0 | 3.9 | 3.9 | 3.9         | 3.9 | 4.2 | 3.8 |
|                    | 205.085 | 3.9             | 4.2 | 4.0 | 4.1 | 4.0         | 4.2 | 4.3 | 4.2 | 4.2         | 4.1 | 4.3 | 4.1 |
|                    | 355.085 | 4.1             | 4.3 | 4.2 | 4.4 | 4.3         | 4.3 | 4.4 | 4.4 | 4.5         | 4.3 | 4.5 | 4.4 |
|                    | 555.085 | 4.4             | 4.5 | 4.5 | 4.6 | 4.5         | 4.5 | 4.6 | 4.6 | 4.7         | 4.6 | 4.7 | 4.7 |

#### b. Pengujian daya sebar minggu 1

| Formula            | Bobot   | Daya sebar (cm) |     |     |     |             |     |     |     |             |     |     |     |
|--------------------|---------|-----------------|-----|-----|-----|-------------|-----|-----|-----|-------------|-----|-----|-----|
|                    |         | Replikasi 1     |     |     |     | Replikasi 2 |     |     |     | Replikasi 3 |     |     |     |
|                    |         | 1               | 2   | 3   | 4   | 1           | 2   | 3   | 4   | 1           | 2   | 3   | 4   |
| <b>Formula I</b>   | 55.085  | 3.7             | 3.6 | 3.8 | 3.7 | 3.2         | 3.0 | 2.9 | 3.4 | 3.0         | 3.2 | 3.4 | 2.7 |
|                    | 105.085 | 3.9             | 3.8 | 3.9 | 3.9 | 3.3         | 3.2 | 3.1 | 3.5 | 3.2         | 3.3 | 3.5 | 2.9 |
|                    | 205.085 | 4.1             | 4.0 | 4.1 | 4.2 | 3.4         | 3.4 | 3.3 | 3.6 | 3.3         | 3.4 | 3.6 | 3.1 |
|                    | 355.085 | 4.3             | 4.2 | 4.2 | 4.4 | 3.5         | 3.6 | 3.4 | 3.7 | 3.4         | 3.5 | 3.7 | 3.2 |
|                    | 555.085 | 4.5             | 4.6 | 4.5 | 4.6 | 3.6         | 3.7 | 3.5 | 3.8 | 3.5         | 3.6 | 3.8 | 3.4 |
| <b>Formula II</b>  | 55.085  | 3.6             | 3.7 | 3.6 | 3.8 | 3.0         | 2.7 | 3.1 | 3.5 | 3.8         | 3.6 | 3.7 | 3.7 |
|                    | 105.085 | 3.8             | 3.9 | 3.8 | 4.0 | 3.2         | 2.9 | 3.3 | 3.0 | 3.9         | 3.9 | 3.8 | 4.0 |
|                    | 205.085 | 4.0             | 4.1 | 3.9 | 4.1 | 3.4         | 3.1 | 3.4 | 3.7 | 4.1         | 4.2 | 3.9 | 4.1 |
|                    | 355.085 | 4.2             | 4.2 | 4.1 | 4.3 | 3.5         | 3.2 | 3.5 | 3.8 | 4.2         | 4.3 | 4.1 | 4.3 |
|                    | 555.085 | 4.5             | 4.4 | 4.4 | 4.6 | 3.6         | 3.3 | 3.6 | 3.9 | 4.5         | 4.4 | 4.3 | 4.5 |
| <b>Formula III</b> | 55.085  | 3.6             | 3.8 | 3.7 | 3.7 | 3.7         | 3.7 | 3.7 | 3.6 | 3.9         | 3.8 | 3.9 | 4.0 |
|                    | 105.085 | 3.8             | 3.9 | 3.9 | 3.8 | 3.8         | 3.8 | 3.9 | 3.7 | 4.1         | 4.0 | 4.2 | 4.2 |
|                    | 205.085 | 4.0             | 4.3 | 4.4 | 4.1 | 3.9         | 4.0 | 4.1 | 3.9 | 4.3         | 4.3 | 4.5 | 4.5 |
|                    | 355.085 | 4.3             | 4.4 | 4.5 | 4.3 | 4.0         | 4.3 | 4.3 | 4.0 | 4.6         | 4.5 | 4.7 | 4.6 |
|                    | 555.085 | 4.5             | 4.5 | 4.6 | 4.4 | 4.5         | 4.4 | 4.5 | 4.3 | 4.8         | 4.8 | 4.9 | 4.9 |

## c. Pengujian daya sebar minggu 2

| Formula            | Bobot   | Daya sebar (cm) |     |     |     |             |     |     |     |             |     |     |     |
|--------------------|---------|-----------------|-----|-----|-----|-------------|-----|-----|-----|-------------|-----|-----|-----|
|                    |         | Replikasi 1     |     |     |     | Replikasi 2 |     |     |     | Replikasi 3 |     |     |     |
|                    |         | 1               | 2   | 3   | 4   | 1           | 2   | 3   | 4   | 1           | 2   | 3   | 4   |
| <b>Formula I</b>   | 55.085  | 3.8             | 3.7 | 3.8 | 3.9 | 3.3         | 3.2 | 3.1 | 3.3 | 3.2         | 3.0 | 3.1 | 2.9 |
|                    | 105.085 | 3.9             | 3.9 | 4.0 | 4.1 | 3.5         | 3.4 | 3.3 | 3.5 | 3.5         | 3.2 | 3.3 | 3.1 |
|                    | 205.085 | 4.1             | 4.2 | 4.3 | 4.4 | 3.5         | 3.6 | 3.6 | 3.8 | 3.5         | 3.4 | 3.5 | 3.4 |
|                    | 355.085 | 4.4             | 4.5 | 4.5 | 4.6 | 3.6         | 3.7 | 3.9 | 4.2 | 3.7         | 3.6 | 3.7 | 3.5 |
|                    | 555.085 | 4.6             | 4.8 | 4.7 | 4.8 | 3.9         | 4.1 | 4.3 | 4.4 | 3.9         | 3.8 | 3.9 | 3.7 |
| <b>Formula II</b>  | 55.085  | 3.6             | 3.8 | 3.7 | 3.8 | 3.1         | 3.0 | 2.9 | 3.3 | 3.7         | 3.6 | 3.8 | 3.7 |
|                    | 105.085 | 3.8             | .9  | 3.9 | 4.0 | 3.3         | 3.2 | 3.1 | 3.3 | 3.9         | 3.8 | 3.9 | 3.9 |
|                    | 205.085 | 4.0             | 4.1 | 4.0 | 4.2 | 3.4         | 3.3 | 3.3 | 3.5 | 4.1         | 3.9 | 4.0 | 4.1 |
|                    | 355.085 | 4.1             | 4.3 | 4.2 | 4.3 | 3.5         | 3.5 | 3.4 | 3.6 | 4.3         | 4.1 | 4.2 | 4.3 |
|                    | 555.085 | 4.4             | 4.6 | 4.5 | 4.5 | 3.7         | 3.8 | 3.7 | 3.9 | 4.4         | 4.5 | 4.6 | 4.7 |
| <b>Formula III</b> | 55.085  | 3.5             | 3.7 | 3.8 | 3.6 | 3.6         | 3.7 | 3.8 | 3.6 | 3.8         | 3.9 | 4.0 | 3.8 |
|                    | 105.085 | 3.7             | 3.9 | 3.9 | 3.8 | 3.8         | 3.9 | 3.9 | 3.8 | 3.9         | 4.1 | 4.2 | 4.0 |
|                    | 205.085 | 3.9             | 4.1 | 4.0 | 4.0 | 3.9         | 4.1 | 4.0 | 4.0 | 4.2         | 4.3 | 4.4 | 4.3 |
|                    | 355.085 | 4.2             | 4.3 | 4.3 | 4.2 | 4.1         | 4.3 | 4.2 | 4.3 | 4.5         | 4.5 | 4.6 | 4.6 |
|                    | 555.085 | 4.5             | 4.6 | 4.5 | 4.4 | 4.5         | 4.6 | 4.5 | 4.6 | 4.8         | 4.8 | 4.6 | 4.7 |

## d. Pengujian daya sebar minggu 3

| Formula            | Bobot   | Daya sebar (cm) |     |     |     |             |     |     |     |             |     |     |     |
|--------------------|---------|-----------------|-----|-----|-----|-------------|-----|-----|-----|-------------|-----|-----|-----|
|                    |         | Replikasi 1     |     |     |     | Replikasi 2 |     |     |     | Replikasi 3 |     |     |     |
|                    |         | 1               | 2   | 3   | 4   | 1           | 2   | 3   | 4   | 1           | 2   | 3   | 4   |
| <b>Formula I</b>   | 55.085  | 3.9             | 3.7 | 3.6 | 3.8 | 3.6         | 3.8 | 3.7 | 3.7 | 3.8         | 3.7 | 3.8 | 3.5 |
|                    | 105.085 | 4.0             | 3.9 | 3.8 | 4.0 | 3.9         | 3.9 | 4.0 | 4.0 | 4.0         | 3.9 | 3.9 | 3.8 |
|                    | 205.085 | 4.2             | 4.1 | 4.0 | 4.2 | 4.1         | 4.0 | 4.2 | 4.1 | 4.2         | 4.2 | 4.1 | 4.0 |
|                    | 355.085 | 4.4             | 4.3 | 4.2 | 4.3 | 4.3         | 4.2 | 4.4 | 4.4 | 4.4         | 4.5 | 4.3 | 4.2 |
|                    | 555.085 | 4.8             | 4.7 | 4.6 | 4.7 | 4.5         | 4.4 | 4.7 | 4.6 | 4.5         | 4.6 | 4.4 | 4.4 |
| <b>Formula II</b>  | 55.085  | 3.8             | 3.7 | 3.5 | 3.7 | 3.5         | 3.8 | 3.4 | 3.7 | 3.6         | 3.8 | 3.6 | 3.7 |
|                    | 105.085 | 3.9             | 3.9 | 3.8 | 4.0 | 3.7         | 3.9 | 3.6 | 3.8 | 3.9         | 3.9 | 3.8 | 3.8 |
|                    | 205.085 | 4.1             | 4.2 | 4.0 | 4.1 | 3.9         | 4.1 | 3.9 | 4.0 | 4.2         | 4.1 | 4.  | 4.1 |
|                    | 355.085 | 4.3             | 4.4 | 4.2 | 4.2 | 4.1         | 4.3 | 4.1 | 4.2 | 4.4         | 4.3 | 4.3 | 4.5 |
|                    | 555.085 | 4.6             | 4.7 | 4.5 | 4.6 | 4.3         | 4.4 | 4.2 | 4.5 | 4.6         | 4.6 | 4.6 | 4.7 |
| <b>Formula III</b> | 55.085  | 3.7             | 3.6 | 3.8 | 3.5 | 3.8         | 3.7 | 3.6 | 3.8 | 3.9         | 4.0 | 3.8 | 4.0 |
|                    | 105.085 | 3.9             | 3.8 | 3.9 | 3.7 | 4.0         | 4.0 | 3.9 | 4.1 | 4.2         | 4.3 | 4.1 | 4.3 |
|                    | 205.085 | 4.1             | 4.1 | 4.2 | 3.9 | 4.3         | 4.2 | 4.2 | 4.4 | 4.5         | 4.6 | 4.4 | 4.6 |
|                    | 355.085 | 4.3             | 4.4 | 4.5 | 4.2 | 4.5         | 4.4 | 4.3 | 4.6 | 4.7         | 4.8 | 4.6 | 4.8 |
|                    | 555.085 | 4.5             | 4.6 | 4.8 | 4.5 | 4.7         | 4.6 | 4.6 | 4.9 | 4.9         | 5.1 | 4.9 | 5.2 |

## e. Pengujian daya sebar minggu 4

| Formula            | Bobot   | Daya sebar (cm) |     |     |     |             |     |     |     |             |     |     |     |
|--------------------|---------|-----------------|-----|-----|-----|-------------|-----|-----|-----|-------------|-----|-----|-----|
|                    |         | Replikasi 1     |     |     |     | Replikasi 2 |     |     |     | Replikasi 3 |     |     |     |
|                    |         | 1               | 2   | 3   | 4   | 1           | 2   | 3   | 4   | 1           | 2   | 3   | 4   |
| <b>Formula I</b>   | 55.085  | 3.5             | 3.7 | 3.8 | 3.4 | 3.7         | 3.7 | 3.6 | 3.8 | 3.5         | 3.7 | 3.6 | 3.5 |
|                    | 105.085 | 3.8             | 3.9 | 4.1 | 3.6 | 3.9         | 3.8 | 3.9 | 4.0 | 3.7         | 3.8 | 3.7 | 3.6 |
|                    | 205.085 | 4.1             | 4.2 | 4.3 | 3.9 | 4.1         | 4.0 | 4.2 | 4.2 | 3.9         | 4.0 | 4.0 | 3.9 |
|                    | 355.085 | 4.4             | 4.5 | 4.6 | 4.2 | 4.3         | 4.3 | 4.4 | 4.5 | 4.3         | 4.4 | 4.3 | 4.2 |
|                    | 555.085 | 4.8             | 4.8 | 4.9 | 4.6 | 4.6         | 4.6 | 4.7 | 4.8 | 4.5         | 4.7 | 4.6 | 4.5 |
| <b>Formula II</b>  | 55.085  | 3.7             | 3.6 | 3.7 | 3.5 | 3.4         | 3.2 | 3.4 | 3.6 | 3.8         | 3.7 | 3.7 | 3.6 |
|                    | 105.085 | 3.9             | 3.8 | 3.8 | 3.7 | 3.6         | 3.5 | 3.5 | 3.7 | 3.9         | 3.8 | 3.9 | 3.9 |
|                    | 205.085 | 4.1             | 4.0 | 4.1 | 4.0 | 3.9         | 3.8 | 3.7 | 3.9 | 4.2         | 4.1 | 4.2 | 4.0 |
|                    | 355.085 | 4.4             | 4.3 | 4.4 | 4.3 | 4.1         | 4.0 | 4.0 | 4.2 | 4.5         | 4.4 | 4.4 | 4.3 |
|                    | 555.085 | 4.7             | 4.6 | 4.6 | 4.7 | 4.3         | 4.4 | 4.5 | 4.6 | 4.8         | 4.6 | 4.7 | 4.5 |
| <b>Formula III</b> | 55.085  | 3.5             | 3.8 | 3.9 | 3.7 | 3.7         | 3.8 | 3.8 | 3.7 | 3.9         | 3.9 | 4.0 | 3.8 |
|                    | 105.085 | 3.7             | 3.9 | 4.1 | 3.9 | 3.9         | 4.0 | 3.9 | 4.0 | 4.1         | 4.2 | 4.3 | 4.0 |
|                    | 205.085 | 3.9             | 4.2 | 4.3 | 4.1 | 4.1         | 4.2 | 4.2 | 4.3 | 4.3         | 4.5 | 4.5 | 4.4 |
|                    | 355.085 | 4.2             | 4.4 | 4.5 | 4.3 | 4.3         | 4.4 | 4.5 | 4.5 | 4.5         | 4.7 | 4.8 | 4.7 |
|                    | 555.085 | 4.4             | 4.6 | 4.8 | 4.6 | 4.5         | 4.7 | 4.7 | 4.8 | 4.8         | 4.9 | 5.2 | 5.3 |

Rata-rata  $\pm$  SD data uji daya sebar krim ekstrak daging lidah buaya

| Formula    | Luas penyebaran (cm <sup>2</sup> $\pm$ SD) |                 |                 |                 |                 |                 |
|------------|--------------------------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|
|            | Beban                                      | Minggu 0        | Minggu 1        | Minggu 2        | Minggu 3        | Minggu 4        |
| <b>I</b>   | 55.085                                     | 3.17 $\pm$ 0.36 | 3.3 $\pm$ 0.35  | 3.36 $\pm$ 0.35 | 3.71 $\pm$ 0.11 | 3.62 $\pm$ 0.12 |
|            | 105.085                                    | 3.36 $\pm$ 0.38 | 3.46 $\pm$ 0.35 | 3.56 $\pm$ 0.33 | 3.92 $\pm$ 0.07 | 3.81 $\pm$ 0.15 |
|            | 205.085                                    | 3.55 $\pm$ 0.41 | 3.62 $\pm$ 0.37 | 3.77 $\pm$ 0.37 | 4.12 $\pm$ 0.08 | 4.06 $\pm$ 0.13 |
|            | 355.085                                    | 3.75 $\pm$ 0.43 | 3.76 $\pm$ 0.41 | 3.99 $\pm$ 0.42 | 4.32 $\pm$ 0.09 | 4.36 $\pm$ 0.12 |
|            | 555.085                                    | 3.95 $\pm$ 0.34 | 3.92 $\pm$ 0.47 | 4.24 $\pm$ 0.41 | 4.57 $\pm$ 0.13 | 4.67 $\pm$ 0.13 |
| <b>II</b>  | 55.085                                     | 3.37 $\pm$ 0.34 | 3.48 $\pm$ 0.35 | 3.5 $\pm$ 0.33  | 3.34 $\pm$ 0.13 | 3.57 $\pm$ 0.17 |
|            | 105.085                                    | 3.56 $\pm$ 0.24 | 3.62 $\pm$ 0.40 | 3.41 $\pm$ 0.85 | 3.83 $\pm$ 0.10 | 3.75 $\pm$ 0.15 |
|            | 205.085                                    | 3.71 $\pm$ 0.28 | 3.83 $\pm$ 0.35 | 3.82 $\pm$ 0.34 | 4.05 $\pm$ 0.09 | 4 $\pm$ 0.15    |
|            | 355.085                                    | 3.85 $\pm$ 0.30 | 3.97 $\pm$ 0.38 | 3.98 $\pm$ 0.36 | 4.27 $\pm$ 0.12 | 4.27 $\pm$ 0.16 |
|            | 555.085                                    | 4.11 $\pm$ 0.36 | 4.16 $\pm$ 0.44 | 4.27 $\pm$ 0.38 | 4.52 $\pm$ 0.15 | 4.58 $\pm$ 0.13 |
| <b>III</b> | 55.085                                     | 3.71 $\pm$ 0.11 | 3.76 $\pm$ 0.12 | 3.73 $\pm$ 0.14 | 3.76 $\pm$ 0.15 | 3.78 $\pm$ 0.12 |
|            | 105.085                                    | 3.88 $\pm$ 0.12 | 3.92 $\pm$ 0.16 | 3.91 $\pm$ 0.13 | 4.01 $\pm$ 0.18 | 4 $\pm$ 0.15    |
|            | 205.085                                    | 4.13 $\pm$ 0.12 | 4.19 $\pm$ 0.21 | 4.1 $\pm$ 0.16  | 4.29 $\pm$ 0.20 | 4.25 $\pm$ 0.16 |
|            | 355.085                                    | 4.34 $\pm$ 0.11 | 4.37 $\pm$ 0.21 | 4.34 $\pm$ 0.16 | 4.51 $\pm$ 0.19 | 4.48 $\pm$ 0.17 |
|            | 555.085                                    | 4.57 $\pm$ 0.09 | 4.59 $\pm$ 0.19 | 4.59 $\pm$ 0.12 | 4.77 $\pm$ 0.22 | 4.77 $\pm$ 0.25 |

### Lampiran 6. Data pengujian pergeseran viskositas krim ekstrak daging lidah buaya

Uji pergeseran viskositas

| Formula            | Pergeseran viskositas (%) |             |             |
|--------------------|---------------------------|-------------|-------------|
|                    | Replikasi 1               | Replikasi 2 | Replikasi 3 |
| <b>Formula I</b>   | 14.81                     | 16.67       | 13.33       |
| <b>Formula II</b>  | 10.71                     | 13.33       | 10.71       |
| <b>Formula III</b> | 11.11                     | 7.69        | 12.5        |

Rata-rata dan SD pergeseran viskositas

| Formula            | Pergeseran viskositas (% $\pm$ SD) |
|--------------------|------------------------------------|
| <b>Formula I</b>   | 14.94 $\pm$ 1.37                   |
| <b>Formula II</b>  | 11.58 $\pm$ 1.23                   |
| <b>Formula III</b> | 10.43 $\pm$ 2.02                   |

## Lampiran 7. Perhitungan pembuatan larutan DPPH dan pengukuran panjang gelombang maksimum larutan DPPH.

### 1. Penimbangan DPPH

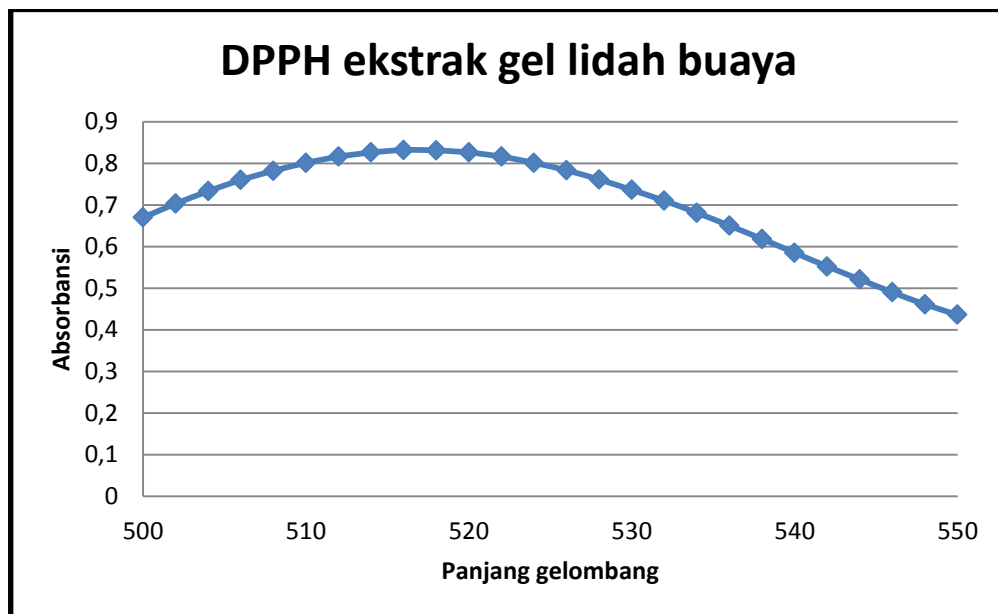
Serbuk DPPH untuk uji aktivitas antioksidan ditimbang sesuai hasil perhitungan berikut:

$$\begin{aligned}
 \text{Berat serbuk DPPH} &= \text{BM DPPH} \times \text{Volume larutan} \times \text{Molaritas DPPH} \\
 &= 394,32 \text{ gram} \times 0,05 \text{ liter} \times 0,00045\text{M} \\
 &= 0,0078869 \text{ gram} \\
 &= 7,9 \text{ mg}
 \end{aligned}$$

Selanjutnya dilarutkan dengan etanol p.a dalam labu takar 50 ml.

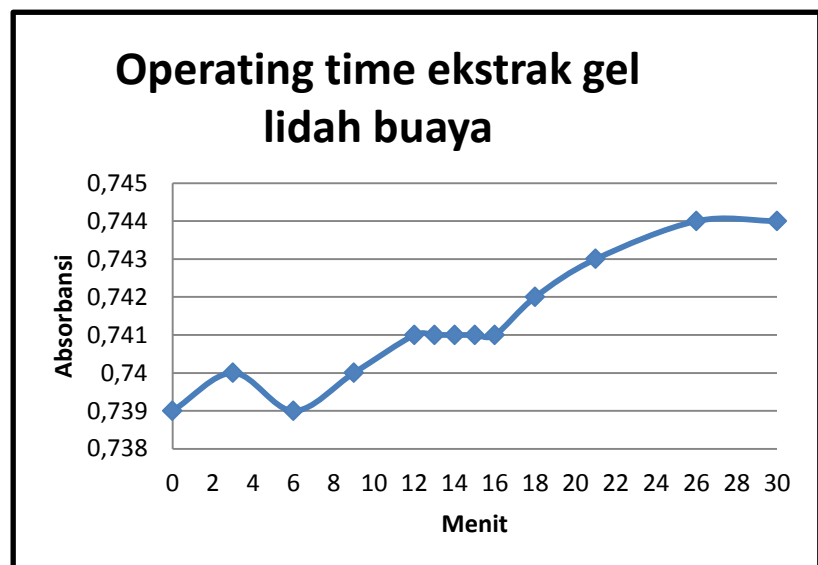
### 2. Penentuan panjang gelombang

| Panjang gelombang | Absorbansi   | Panjang gelombang | Absorbansi |
|-------------------|--------------|-------------------|------------|
| 500               | 0.670        | 526               | 0.783      |
| 502               | 0.703        | 528               | 0.761      |
| 504               | 0.733        | 530               | 0.736      |
| 506               | 0.760        | 532               | 0.710      |
| 508               | 0.782        | 534               | 0.681      |
| 510               | 0.801        | 536               | 0.650      |
| 512               | 0.816        | 538               | 0.618      |
| 514               | 0.826        | 540               | 0.585      |
| <b>516</b>        | <b>0.832</b> | 542               | 0.552      |
| 518               | 0.831        | 544               | 0.521      |
| 520               | 0.826        | 546               | 0.490      |
| 522               | 0.816        | 548               | 0.461      |
| 524               | 0.801        | 550               | 0.436      |



### 3. Penentuan operating time

| Menit ke | Absorbansi |
|----------|------------|
| 0        | 0.739      |
| 3        | 0.740      |
| 6        | 0.739      |
| 9        | 0.740      |
| 12       | 0.741      |
| 13       | 0.741      |
| 14       | 0.741      |
| 15       | 0.741      |
| 16       | 0.741      |
| 18       | 0.742      |
| 21       | 0.743      |
| 26       | 0.744      |
| 30       | 0.744      |



### **Lampiran 8. Pembuatan dan Perhitungan seri pengenceran ekstrak daging lidah buaya**

Pembuatan stok dilakukan dengan cara ditimbang ekstrak 50,0 mg dimasukkan labu takar 50 ml kemudian ditambahkan etanol p.a sampai tanda batas, sehingga diperoleh konsentrasi 500 ppm.

$$\begin{aligned}\text{Konsentrasi ekstrak} &= 50,0 \text{ mg}/50 \text{ ml} \\ &= 50,0 \text{ mg}/0,05 \text{ L} \\ &= 1000 \text{ ppm}\end{aligned}$$

Larutan konsentrasi 1000 ppm diencerkan menjadi 5 seri pengenceran konsentrasi, yaitu 20 ppm, 40 ppm, 60 ppm, 80 ppm, 100 ppm

#### **Konsentrasi 20 ppm :**

$$\begin{aligned}V_1 \times C_1 &= V_2 \times C_2 \\ V_1 \times 1000 &= 25 \times 20 \\ V_1 &= 0.5 \text{ ml}\end{aligned}$$

Dipipet larutan ekstrak sebanyak 0.5 ml dimasukkan dalam labut akar 25 ml kemudian ditambahkan etanol p.a sampai tanda batas.

#### **Konsentrasi 40 ppm**

$$\begin{aligned}V_1 \times C_1 &= V_2 \times C_2 \\ V_1 \times 1000 &= 25 \times 40 \\ V_1 &= 1 \text{ ml}\end{aligned}$$

Dipipet larutan ekstrak sebanyak 1 ml dimasukkan dalam labu takar 25 ml kemudian ditambahkan etanol p.a sampai tanda batas.

#### **Kosentrasi 60**

$$V_1 \times C_1 = V_2 \times C_2$$

$$V_1 \times 1000 = 25 \times 60$$

$$V_1 = 1.5 \text{ ml}$$

Dipipet larutan ekstrak sebanyak 1.5 ml dimasukkan dalam labu takar 25 ml kemudian ditambahkan etanol p.a sampai tanda batas.

### **Konsentrasi 80**

$$V_1 \times C_1 = V_2 \times C_2$$

$$V_1 \times 1000 = 25 \times 80$$

$$V_1 = 2 \text{ ml}$$

Dipipet larutan ekstrak sebanyak 2 ml dimasukkan dalam labu takar 25 ml kemudian ditambahkan etanol p.a sampai tanda batas.

### **Konsentrasi 100 ppm**

$$V_1 \times C_1 = V_2 \times C_2$$

$$V_1 \times 1000 = 25 \times 100$$

$$V_1 = 2.5 \text{ ml}$$

Dipipet larutan ekstrak sebanyak 2.5 ml dimasukkan dalam labu takar 25 ml kemudian ditambahkan etanol p.a sampai tanda batas.

### **Lampiran 9. Perhitungan seri pengenceran rutin**

Pembuatan stok dilakukan dengan cara ditimbang rutin 2 mg dimasukkan labu takar 100 ml kemudian ditambahkan etanol p.a sampai tanda batas, sehingga diperoleh konsentrasi 20 ppm.

$$\text{Konsentrasi rutin} = 2 \text{ mg}/100$$

$$= 2000 \text{ mikrogr}/100 \text{ ml}$$

$$= 20 \text{ ppm}$$

Larutan konsentrasi 20 ppm diencerkan menjadi 5 seri pengenceran konsentrasi, yaitu 1 ppm, 2 ppm, 4 ppm, 6 ppm, 8 ppm

#### **Konsentrasi 1 ppm**

$$V_1 \times C_1 = V_2 \times C_2$$

$$V_1 \times 20 = 100 \times 1$$

$$V_1 = 5 \text{ ml}$$

Dipipet larutan rutin sebanyak 5 ml dimasukkan dalam labu takar 100 ml kemudian ditambahkan etanol p.a sampai tanda batas.

#### **Konsentrasi 2 ppm**

$$V_1 \times C_1 = V_2 \times C_2$$

$$V_1 \times 20 = 50 \times 2$$

$$V_1 = 5 \text{ ml}$$

Dipipet larutan rutin sebanyak 5 ml dimasukkan dalam labu takar 50 ml kemudian ditambahkan etanol p.a sampai tanda batas.

**Konsentrasi 4 ppm**

$$V_1 \times C_1 = V_2 \times C_2$$

$$V_1 \times 20 = 25 \times 4$$

$$V_1 = 5 \text{ ml}$$

Dipipet larutan rutin sebanyak 5 ml dimasukkan dalam labu takar 25 ml kemudian ditambahkan etanol p.a sampai tanda batas.

**Konsentrasi 6 ppm**

$$V_1 \times C_1 = V_2 \times C_2$$

$$V_1 \times 20 = 50 \times 5$$

$$V_1 = 12.5 \text{ ml}$$

Dipipet larutan rutin sebanyak 12.5 ml dimasukkan dalam labu takar 100 ml kemudian ditambahkan etanol p.a sampai tanda batas.

**Konsentrasi 8 ppm**

$$V_1 \times C_1 = V_2 \times C_2$$

$$V_1 \times 20 = 25 \times 8$$

$$V_1 = 10 \text{ ml}$$

Dipipet larutan rutin sebanyak 10 ml dimasukkan dalam labu takar 25 ml kemudian ditambahkan etanol p.a sampai tanda batas.

### Lampiran 10. Perhitungan aktivitas antioksidan dan IC<sub>50</sub> ekstrak daging lidah buaya

Perhitungan prosentase peredaman menggunakan rumus :

$$\% \text{ Peredaman} = \frac{\text{Abs.kontrol} - \text{Abs.sampel}}{\text{Abs.kontrol}} \times 100 \%$$

a. Data hasil pengujian ekstrak gel lidah buaya

absorbansi kontrol

DPPH + EtOH = 0,832 ppm

| KONSENTRASI | R1    | R2    | R3    |
|-------------|-------|-------|-------|
| 20 ppm      | 0.599 | 0.603 | 0.594 |
| 40 ppm      | 0.477 | 0.472 | 0.461 |
| 60 ppm      | 0.429 | 0.435 | 0.427 |
| 80 ppm      | 0.378 | 0.350 | 0.352 |
| 100 ppm     | 0.297 | 0.273 | 0.261 |

% inhibisi (20 ppm)

$$1 = \frac{0,832 - 0,599}{0,832} \times 100\% = 28 \%$$

$$2 = \frac{0,832 - 0,603}{0,832} \times 100\% = 27.52 \%$$

$$3 = \frac{0,832 - 0,594}{0,832} \times 100\% = 28.60 \%$$

% inhibisi (40 ppm)

$$1 = \frac{0,832 - 0,477}{0,832} \times 100\% = 42.66 \%$$

$$2 = \frac{0,832 - 0,472}{0,832} \times 100\% = 43.26 \%$$

$$3 = \frac{0,832 - 0,461}{0,832} \times 100\% = 44.59 \%$$

% inhibisi (60 ppm)

$$1 = \frac{0,832 - 0,429}{0,832} \times 100\% = 48.43 \%$$

$$2 = \frac{0,832 - 0,435}{0,832} \times 100\% = 47.71 \%$$

$$3 = \frac{0,832 - 0,427}{0,832} \times 100\% = 48.67 \%$$

% inhibisi (80 ppm)

$$1 = \frac{0,832 - 0,378}{0,832} \times 100\% = 54.56 \%$$

$$2 = \frac{0,832 - 0,350}{0,832} \times 100\% = 57.93 \%$$

$$3 = \frac{0,832 - 0,352}{0,832} \times 100\% = 57.69 \%$$

% inhibisi (100 ppm)

$$1 = \frac{0,832 - 0,297}{0,832} \times 100\% = 64.30 \%$$

$$2 = \frac{0,832-0,273}{0,832} \times 100\% = 67.18 \%$$

$$3 = \frac{0,832-0,261}{0,832} \times 100\% = 68.62 \%$$

a. Pengujian Ekstrak daging lidah buaya

| Konsentrasi | Replikasi 1 | Replikasi 2 | Replikasi 3 | Total peredaman (%) |
|-------------|-------------|-------------|-------------|---------------------|
| 20          | 28          | 27.52       | 28.61       | 28.04               |
| 40          | 42.67       | 43.27       | 44.59       | 43.51               |
| 60          | 48.44       | 47.72       | 48.68       | 48.28               |
| 80          | 54.57       | 57.93       | 57.69       | 56.73               |
| 100         | 64.30       | 67.19       | 68.63       | 66.71               |

Perhitungan IC<sub>50</sub>:

$$a = 21.486$$

$$b = 0.4528$$

$$r = 0.98646$$

didapatkan persamaan :

$$Y = a + bx$$

$$Y = 21.486 + 0.4528x$$

$$50 = 21.486 + 0.4528x$$

$$x = 62.97 \text{ ppm}$$

$$IC_{50} = 62.97 \text{ ppm}$$

### Lampiran 11. Perhitungan pembanding rutin dan IC<sub>50</sub> rutin

Perhitungan prosentase peredaman menggunakan rumus :

$$\% \text{ Peredaman} = \frac{\text{Abs.kontrol} - \text{Abs.sampel}}{\text{Abs.kontrol}} \times 100 \%$$

a. Data hasil pengujian

Absorbansi kontrol

DPPH + EtOH = 0,832

| KONSENTRASI | R1    | R2    | R3    |
|-------------|-------|-------|-------|
| 1 ppm       | 0.724 | 0.721 | 0.715 |
| 2 ppm       | 0.682 | 0.664 | 0.639 |
| 4 ppm       | 0.589 | 0.571 | 0.562 |
| 6 ppm       | 0.443 | 0.427 | 0.403 |
| 8 ppm       | 0.367 | 0.344 | 0.319 |

% inhibisi (1 ppm)

$$1 = \frac{0,832 - 0,724}{0,832} \times 100\% = 12.98 \%$$

$$2 = \frac{0,832 - 0,721}{0,832} \times 100\% = 13.34 \%$$

$$3 = \frac{0,832 - 0,715}{0,832} \times 100\% = 14.06 \%$$

% inhibisi (2 ppm)

$$1 = \frac{0,832 - 0,682}{0,832} \times 100\% = 18.02 \%$$

$$2 = \frac{0,832 - 0,664}{0,832} \times 100\% = 20.19 \%$$

$$3 = \frac{0,832 - 0,639}{0,832} \times 100\% = 23.19 \%$$

% inhibisi ( 4 ppm)

$$1 = \frac{0,832 - 0,589}{0,832} \times 100\% = 29.20 \%$$

$$2 = \frac{0,832 - 0,571}{0,832} \times 100\% = 31.37 \%$$

$$3 = \frac{0,832 - 0,562}{0,832} \times 100\% = 32.45 \%$$

% inhibisi ( 6 ppm)

$$1 = \frac{0,832 - 0,443}{0,832} \times 100\% = 46.75 \%$$

$$2 = \frac{0,832 - 0,427}{0,832} \times 100\% = 48.67 \%$$

$$3 = \frac{0,832 - 0,403}{0,832} \times 100\% = 51.56 \%$$

% inhibisi ( 8 ppm)

$$1 = \frac{0,832-0,367}{0,832} \times 100\% = 55.88 \%$$

$$2 = \frac{0,832-0,344}{0,832} \times 100\% = 58.65 \%$$

$$3 = \frac{0,832-0,319}{0,832} \times 100\% = 61.65 \%$$

| Konsentrasi | Replikasi 1 | Replikasi 2 | Replikasi 3 | Total Peredaman % |
|-------------|-------------|-------------|-------------|-------------------|
| 1 ppm       | 12.98       | 13.34       | 14.06       | 13.46             |
| 2 ppm       | 18.02       | 20.19       | 23.19       | 20.47             |
| 4 ppm       | 29.20       | 31.37       | 32.45       | 31.009            |
| 6 ppm       | 46.75       | 48.67       | 51.56       | 48.99             |
| 8 ppm       | 55.88       | 58.65       | 61.65       | 58.73             |

Perhitungan  $IC_{50}$  :

$$a = 6.7390$$

$$b = 6.6173$$

$$r = 0,9957$$

didapatkan persamaan :

$$Y = a + bx$$

$$Y = 6.7390 + 6.6173x$$

$$50 = 6.7390 + 6.6173x$$

$$x = 6.54 \text{ ppm}$$

$$IC_{50} = 6.54 \text{ ppm}$$

### **Lampiran 12. Perhitungan seri pengenceran krim optimum**

Pembuatan stok dilakukan dengan cara ditimbang krim optimum 50 mg dimasukkan labu takar 50 ml kemudian ditambahkan etanol p.a sampai tanda batas, sehingga diperoleh konsentrasi 1000 ppm.

$$\begin{aligned}\text{Konsentrasi krim optimum} &= 50 \text{ mg} / 50 \text{ ml} \\ &= 50 \text{ mg} / 0.05 \text{ L} \\ &= 1000 \text{ ppm}\end{aligned}$$

Larutan konsentrasi 1000 ppm diencerkan menjadi 5 seri pengenceran konsentrasi, yaitu 100 ppm, 200 ppm, 300 ppm, 400 ppm, 500 ppm

#### **Konsentrasi 100 ppm**

$$V_1 \times C_1 = V_2 \times C_2$$

$$V_1 \times 1000 = 25 \times 100$$

$$V_1 = 2.5 \text{ ml}$$

Dipipet larutan krim optimum sebanyak 2.5 ml dimasukkan dalam labu takar 25 ml kemudian ditambahkan etanol p.a sampai tanda batas.

#### **Konsentrasi 200 ppm**

$$V_1 \times C_1 = V_2 \times C_2$$

$$V_1 \times 1000 = 25 \times 200$$

$$V_1 = 5 \text{ ml}$$

Dipipet larutan krim optimum sebanyak 5 ml dimasukkan dalam labu takar 25 ml kemudian ditambahkan etanol p.a sampai tanda batas.

**Konsentrasi 300 ppm**

$$V_1 \times C_1 = V_2 \times C_2$$

$$V_1 \times 1000 = 25 \times 300$$

$$V_1 = 7.5 \text{ ml}$$

Dipipet larutan krim optimum sebanyak 7.5 ml dimasukkan dalam labu takar 25 ml kemudian ditambahkan etanol p.a sampai tanda batas.

**Konsentrasi 400 ppm**

$$V_1 \times C_1 = V_2 \times C_2$$

$$V_1 \times 1000 = 25 \times 400$$

$$V_1 = 10 \text{ ml}$$

Dipipet larutan krim optimum sebanyak 10 ml dimasukkan dalam labu takar 25 ml kemudian ditambahkan etanol p.a sampai tanda batas.

**Konsentrasi 500 ppm**

$$V_1 \times C_1 = V_2 \times C_2$$

$$V_1 \times 1000 = 25 \times 500$$

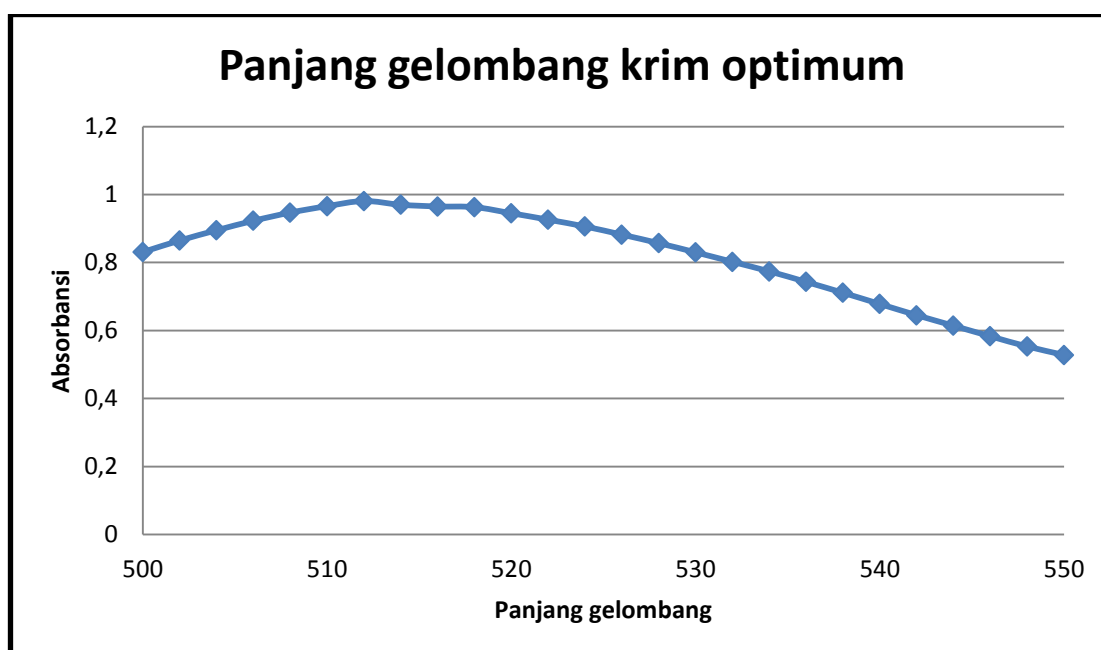
$$V_1 = 12.5 \text{ ml}$$

Dipipet larutan krim optimum sebanyak 12.5 ml dimasukkan dalam labu takar 50 ml kemudian ditambahkan etanol p.a sampai tanda batas.

**Lampiran 13. Perhitungan pembuatan larutan DPPH dan pengukuran panjang gelombang maksimum larutan DPPH pengujian krim optimum**

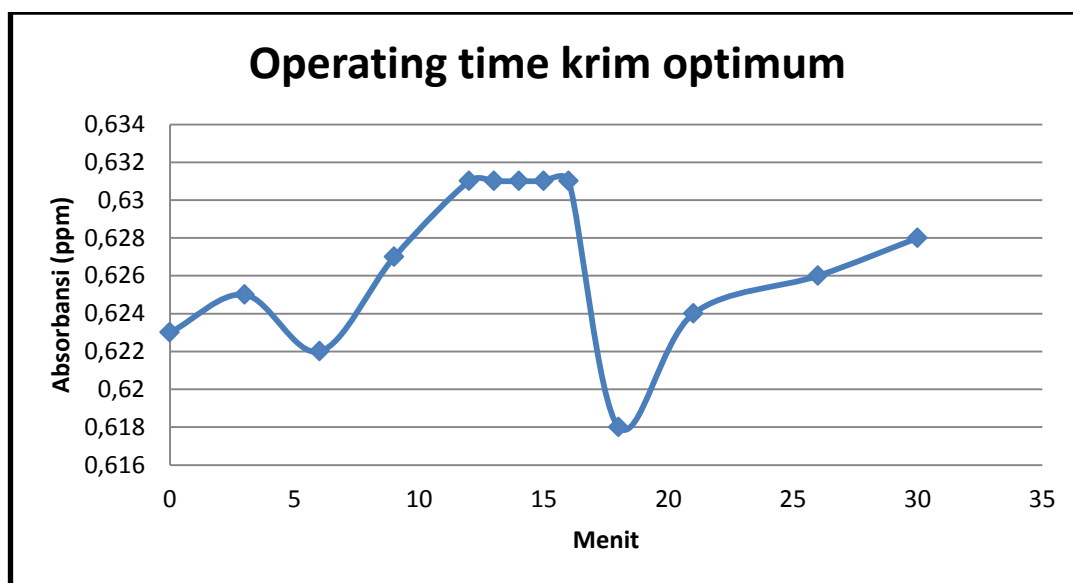
**1. Penentuan panjang gelombang**

| Panjang gelombang | Absorbansi   | Panjang gelombang | Absorbansi |
|-------------------|--------------|-------------------|------------|
| 500               | 0.831        | 526               | 0.882      |
| 502               | 0.865        | 528               | 0.857      |
| 504               | 0.895        | 530               | 0.830      |
| 506               | 0.923        | 532               | 0.802      |
| 508               | 0.947        | 534               | 0.774      |
| 510               | 0.966        | 536               | 0.743      |
| 512               | 0.981        | 538               | 0.711      |
| 514               | 0.970        | 540               | 0.678      |
| <b>516</b>        | <b>0.965</b> | 542               | 0.645      |
| 518               | 0.963        | 544               | 0.614      |
| 520               | 0.945        | 546               | 0.583      |
| 522               | 0.926        | 548               | 0.553      |
| 524               | 0.906        | 550               | 0.528      |



## 2. Penentuan operating time

| Menitke   | Absorbansi   |
|-----------|--------------|
| 0         | 0.623        |
| 3         | 0.625        |
| 6         | 0.622        |
| 9         | 0.627        |
| 12        | 0.631        |
| <b>13</b> | <b>0.631</b> |
| <b>14</b> | <b>0.631</b> |
| <b>15</b> | <b>0.631</b> |
| <b>16</b> | <b>0.631</b> |
| 18        | 0.618        |
| 21        | 0.624        |
| 26        | 0.626        |
| 30        | 0.628        |



#### Lampiran 14. Perhitungan aktivitas antioksidan dan IC<sub>50</sub> krim optimum minggu ke 0.

Perhitungan prosentase peredaman menggunakan rumus :

$$\% \text{ Peredaman} = \frac{\text{Abs.kontrol} - \text{Abs.sampel}}{\text{Abs.kontrol}} \times 100 \%$$

a. Data pengujian

Absorbansi kontrol

DPPH + EtOH = 0,965

| KONSENTRASI | R1    | R2    | R3    |
|-------------|-------|-------|-------|
| 100 ppm     | 0.574 | 0.531 | 0.542 |
| 200 ppm     | 0.488 | 0.477 | 0.479 |
| 300 ppm     | 0.433 | 0.401 | 0.420 |
| 400 ppm     | 0.380 | 0.374 | 0.356 |
| 500 ppm     | 0.289 | 0.273 | 0.250 |

% inhibisi (100 ppm)

$$1 = \frac{0.965 - 0.574}{0.965} \times 100\% = 40.51 \%$$

$$2 = \frac{0.965 - 0.531}{0.965} \times 100\% = 44.97 \%$$

$$3 = \frac{0.965 - 0.542}{0.965} \times 100\% = 43.83 \%$$

% inhibisi ( 200 ppm)

$$1 = \frac{0.965 - 0.488}{0.965} \times 100\% = 49.43 \%$$

$$2 = \frac{0.965 - 0.477}{0.965} \times 100\% = 50.56 \%$$

$$3 = \frac{0.965 - 0.479}{0.965} \times 100\% = 50.36 \%$$

% inhibisi (300 ppm)

$$1 = \frac{0.965 - 0.433}{0.965} \times 100\% = 55.12 \%$$

$$2 = \frac{0.965 - 0.401}{0.965} \times 100\% = 58.44 \%$$

$$3 = \frac{0.965 - 0.420}{0.965} \times 100\% = 56.47 \%$$

% inhibisi (400 ppm)

$$1 = \frac{0.965 - 0.380}{0.965} \times 100\% = 60.62 \%$$

$$2 = \frac{0.965 - 0.374}{0.965} \times 100\% = 61.24 \%$$

$$3 = \frac{0.965 - 0.356}{0.965} \times 100\% = 63.10 \%$$

% inhibisi (500 ppm)

$$1 = \frac{0.965-0.289}{0.965} \times 100\% = 70.05 \%$$

$$2 = \frac{0.965-0.273}{0.965} \times 100\% = 71.70 \%$$

$$3 = \frac{0.965-0.250}{0.965} \times 100\% = 74.09 \%$$

b. Data pengujian krim optimum

| Konsentrasi | Replikasi 1 | Replikasi 2 | Replikasi 3 | Total Perendemen % |
|-------------|-------------|-------------|-------------|--------------------|
| 100 ppm     | 40.52       | 44.97       | 43.83       | 43.11              |
| 200 ppm     | 49.43       | 50.57       | 50.36       | 50.12              |
| 300 ppm     | 55.13       | 58.45       | 56.48       | 56.68              |
| 400 ppm     | 60.62       | 61.24       | 63.11       | 61.66              |
| 500 ppm     | 70.05       | 71.71       | 74.09       | 71.95              |

Perhitungan  $IC_{50}$ :

$$a = 35.938$$

$$b = 0.069$$

$$r = 0.9938$$

didapatkan persamaan :

$$Y = a + bx$$

$$Y = 35.938 + 0.069x$$

$$50 = 35.938 + 0.069x$$

$$x = 203.80 \text{ ppm}$$

$$IC_{50} = 203.80 \text{ ppm}$$

### Lampiran 15. Data hasil daging lidah buaya

| Daun lidah buaya | Daging lidah buaya | Rendemen |
|------------------|--------------------|----------|
| 2.500 gram       | 1.450 gram         | 58%      |

Perhitungan

$$\begin{aligned}
 &= \frac{\text{berat daun lidah buaya}}{\text{berat daging lidah buaya}} \times 100 \% \\
 &= \frac{1.450}{2.500} \times 100 \% \\
 &= 58 \%
 \end{aligned}$$

Data daging lidah buaya diperoleh yaitu 1.450 gram dan berat daun lidah buaya 2.500 gram, sehingga didapatkan rendemen bobot daun lidah buaya terhadap rendemen daging lidah buaya sebesar 58%.

### Lampiran 16. Data susut pengeringan ekstrak kental daging lidah buaya

Rumus susut pengeringan :

$$= \frac{\text{berat sebelum susut pengeringan n} - \text{berat sesudah susut pengeringan n}}{\text{berat sebelum susut pengeringan}} \times 100 \%$$

| Bobot wadah+ tutup+ ekstrak |                     | Susut pengeringan |
|-----------------------------|---------------------|-------------------|
| Sebelum pengeringan         | Sesudah pengeringan |                   |
| 21.207                      | 21.021              | 0.877             |
| 21.312                      | 21.039              | 1.281             |
| 21.411                      | 21.196              | 1.004             |
| Rata-rata±SD                |                     | 1.054±0.169       |

Rata-rata ± SD 1,034 ± 1,276

Jadi susut pengeringan ekstrak daging lidah buaya adalah 1.054±0.169.

### Lampiran 17. Perhitungan prosentase rendemen ekstrak daging lidah buaya

| Berat daging | Berat ekstrak | Rendemen |
|--------------|---------------|----------|
| 500 gram     | 54,314 gram   | 10,86 %  |

Perhitungan rendemen

$$\% \text{ rendemen} = \frac{\text{Berat ekstrak}}{\text{Berat daging}} \times 100 \%$$

$$= \frac{54,314}{500} \times 100 \%$$

$$= 10,86\%$$

**Lampiran 18. Perhitungan penimbangan bahan untuk krim 30 gram.**

| Bahan                      | Konsentrasi bahan (%)                               |                                                     |                                                     |
|----------------------------|-----------------------------------------------------|-----------------------------------------------------|-----------------------------------------------------|
|                            | F1 (100%-0%)                                        | F2 (50%-50%)                                        | F3 (0%-100%)                                        |
| Ekstrak daging lidah buaya | $10\% = \frac{10}{100} \times 30 = 3 \text{ g}$     | $10\% = \frac{10}{100} \times 30 = 3 \text{ g}$     | $10\% = \frac{10}{100} \times 30 = 3 \text{ g}$     |
| Setil alkohol              | $5\% = \frac{5}{100} \times 30 = 1,5 \text{ g}$     | $5\% = \frac{5}{100} \times 30 = 1,5 \text{ g}$     | $5\% = \frac{5}{100} \times 30 = 1,5 \text{ g}$     |
| Parafin cair               | $20\% = \frac{20}{100} \times 30 = 6 \text{ g}$     | $20\% = \frac{20}{100} \times 30 = 6 \text{ g}$     | $20\% = \frac{20}{100} \times 30 = 6 \text{ g}$     |
| Asam stearat               | $3\% = \frac{3}{100} \times 30 = 0,9 \text{ g}$     | $2\% = \frac{2}{100} \times 30 = 0,6 \text{ g}$     | $1\% = \frac{1}{100} \times 30 = 0,3 \text{ g}$     |
| Trietanolamin              | $1\% = \frac{1}{100} \times 30 = 0,3 \text{ g}$     | $2\% = \frac{2}{100} \times 30 = 0,6 \text{ g}$     | $3\% = \frac{3}{100} \times 30 = 0,9 \text{ g}$     |
| Lanolin anhidrat           | $3\% = \frac{3}{100} \times 30 = 0,9 \text{ g}$     | $3\% = \frac{3}{100} \times 30 = 0,9 \text{ g}$     | $3\% = \frac{3}{100} \times 30 = 0,9 \text{ g}$     |
| Gliserin                   | $20\% = \frac{20}{100} \times 30 = 6 \text{ g}$     | $20\% = \frac{20}{100} \times 30 = 6 \text{ g}$     | $20\% = \frac{20}{100} \times 30 = 6 \text{ g}$     |
| Nipagin                    | $0,1\% = \frac{0,1}{100} \times 3 = 0,03 \text{ g}$ | $0,1\% = \frac{0,1}{100} \times 3 = 0,03 \text{ g}$ | $0,1\% = \frac{0,1}{100} \times 3 = 0,03 \text{ g}$ |
| Nipasol                    | $0,1\% = \frac{0,1}{100} \times 3 = 0,03 \text{ g}$ | $0,1\% = \frac{0,1}{100} \times 3 = 0,03 \text{ g}$ | $0,1\% = \frac{0,1}{100} \times 3 = 0,03 \text{ g}$ |
| Aquadest                   | Sampai 30                                           | Sampai 30                                           | Sampai 30                                           |

## Lampiran 19. Hasil Uji Statistik Formula Krim Prediksi Dengan Percobaan

### A. Viskositas

#### NPar Tests

##### Descriptive Statistics

|            | N | Mean     | Std. Deviation | Minimum | Maximum |
|------------|---|----------|----------------|---------|---------|
| viskositas | 3 | 250.0000 | 10.00000       | 240.00  | 260.00  |

##### One-Sample Kolmogorov-Smirnov Test

|                                  |                | viskositas |
|----------------------------------|----------------|------------|
| N                                |                | 3          |
| Normal Parameters <sup>a,b</sup> | Mean           | 250.0000   |
|                                  | Std. Deviation | 10.00000   |
| Most Extreme Differences         | Absolute       | .175       |
|                                  | Positive       | .175       |
|                                  | Negative       | -.175      |
| Kolmogorov-Smirnov Z             |                | .303       |
| Asymp. Sig. (2-tailed)           |                | 1.00       |

a. Test distribution is Normal.

b. Calculated from data.

#### T-Test

##### One-Sample Statistics

|            | N | Mean     | Std. Deviation | Std. Error Mean |
|------------|---|----------|----------------|-----------------|
| viskositas | 3 | 250.0000 | 10.00000       | 5.77350         |

##### One-Sample Test

|            | Test Value = 263.731 |    |                 |                 |                                           |         |
|------------|----------------------|----|-----------------|-----------------|-------------------------------------------|---------|
|            | t                    | df | Sig. (2-tailed) | Mean Difference | 95% Confidence Interval of the Difference |         |
|            |                      |    |                 |                 | Lower                                     | Upper   |
| viskositas | -2.378               | 2  | .140            | -13.73100       | -38.5724                                  | 11.1104 |

Daya Sebar  
NPar Tests

Descriptive Statistics

|           | N | Mean   | Std. Deviation | Minimum | Maximum |
|-----------|---|--------|----------------|---------|---------|
| dayasebar | 3 | 3.9000 | .10000         | 3.80    | 4.00    |

One-Sample Kolmogorov-Smirnov Test

|                                  |                | dayasebar |
|----------------------------------|----------------|-----------|
| N                                |                | 3         |
| Normal Parameters <sup>a,b</sup> | Mean           | 3.9000    |
|                                  | Std. Deviation | .10000    |
| Most Extreme Differences         | Absolute       | .175      |
|                                  | Positive       | .175      |
|                                  | Negative       | -.175     |
| Kolmogorov-Smirnov Z             |                | .303      |
| Asymp. Sig. (2-tailed)           |                | 1.000     |

a. Test distribution is Normal.

b. Calculated from data.

T-Test

One-Sample Statistics

|           | N | Mean   | Std. Deviation | Std. Error Mean |
|-----------|---|--------|----------------|-----------------|
| dayasebar | 3 | 3.9000 | .10000         | .05774          |

One-Sample Test

|           | Test Value = 3.82 |    |                 |                 |                                           |       |
|-----------|-------------------|----|-----------------|-----------------|-------------------------------------------|-------|
|           | t                 | df | Sig. (2-tailed) | Mean Difference | 95% Confidence Interval of the Difference |       |
|           |                   |    |                 |                 | Lower                                     | Upper |
| dayasebar | 1.386             | 2  | .300            | .08000          | -.1684                                    | .3284 |

Pergesarn Viskositas  
NPar Tests

Descriptive Statistics

|                      | N | Mean    | Std. Deviation | Minimum | Maximum |
|----------------------|---|---------|----------------|---------|---------|
| pergeseranviskositas | 3 | 11.3467 | 1.26116        | 10.00   | 12.50   |

## One-Sample Kolmogorov-Smirnov Test

|                                  |                | pergeseranviskositas |
|----------------------------------|----------------|----------------------|
| N                                |                | 3                    |
| Normal Parameters <sup>a,b</sup> | Mean           | 11.3467              |
|                                  | Std. Deviation | 1.26116              |
| Most Extreme Differences         | Absolute       | .228                 |
|                                  | Positive       | .191                 |
|                                  | Negative       | -.228                |
| Kolmogorov-Smirnov Z             |                | .394                 |
| Asymp. Sig. (2-tailed)           |                | .998                 |

a. Test distribution is Normal.

b. Calculated from data.

## T-Test

## One-Sample Statistics

|                      | N | Mean    | Std. Deviation | Std. Error Mean |
|----------------------|---|---------|----------------|-----------------|
| pergeseranviskositas | 3 | 11.3467 | 1.26116        | .72813          |

## One-Sample Test

|                      | Test Value = 10.42 |    |                 |                 |                                           |        |
|----------------------|--------------------|----|-----------------|-----------------|-------------------------------------------|--------|
|                      | t                  | df | Sig. (2-tailed) | Mean Difference | 95% Confidence Interval of the Difference |        |
|                      |                    |    |                 |                 | Lower                                     | Upper  |
| pergeseranviskositas | 1.273              | 2  | .331            | .92667          | -2.2062                                   | 4.0596 |