# LAMPIRAN

**Lampiran 1.** Hasil Identifikasi Sampel

1. Bawang Merah

****

1. Bawang Putih

****

**Lampiran 2.** Bagan Alir Penelitian

Ekstrak Kulit Bawang Merah dan Putih

Simplisia Kulit Bawang Merah dan Putih

Karakteristik Simplisia

1. Penentuan kadar air
2. Penentuan kadar abu total
3. Penentuan kadar abu tidak larut asam
4. Penentuan kadar sari larut air
5. Penentuan kadar sari larut etanol

Skrining

1. Alkoloid
2. Flavonoid
3. Tanin
4. Saponin
5. GlikosidaAntrakuinon

IdentifikasiFlavonoid

Uji**S**pektrofotometerInframerah

Kemampuan SPF

Uji nilai SPF

**Lampiran 3.** Bagan Alir Uji Skrining Fitokimia

1. Uji Alkaloid

Sampel

**+** HCl 2N 1m

dipanaskan

disaring

Filtrat

+Dragendorff +Mayer + Bouchardat

+

+

+

1. Uji Flavonoid

Sampel

**+** etanol

dikocok

dipanaskan

dikocok lagi

disaring

Filtrat

+Serbuk Magnesium

+ HCl pekat

(+)

Sampel positif terjadi perubahan warna

**Lampiran 3.**(Lanjutan)

1. Uji Saponin

Sampel

dihaluskan

+air panas

didinginkan

dikocok kuat

Filtrat

**+** air

dikocok kuat

+ HCl 2N

+

Berbuih

1. Uji Tanin

Sampel

- dihaluskan

- disaring

Filtrat

* diencerkan sampai hampir tidak berwarna

Filtrat encer

+FeCl3 10%

+

Terjadi Perubahan Warna

**Lampiran 3.**(Lanjutan)

1. Uji Steroida/Triterpenoida

Sampel

Filtrat

+

+

+

Sampel

Filtrat

(+)

Sampel positif terjadi perubahan warna

Sampel

Filtrat

+

Berbuih

Sampel

Filtrat

Filtrat encer

+

Terjadi Perubahan Warna

Sampel

Filtrat

Sampel

+ Kloroform

dikocok

disaring

Filtrat

+ Asetat Anhidrat

+ Asam Sulfat Pekat

+

Terjadi Perubahan Warna

**Lampiran 4.** Bagan Alir Karakterisasi Simplisia

1. Penetapan Kadar Air (Metode Azeotrop)

Prosedur

Toluen : Air

(100 : 1)

Dimasukkan dalam labu alas bulat

Dipasang dan didestilasi selama 2 jam

Didinginkan selama 30 menit, sampai Toluen dan air memisah

Dihitung Volume air dalam tabung penerima

Toluen : Air

(100 : 1)

Dimasukkan 2,5 gram serbuk simplisia dalam labu alas bulat berisi toluen yang telah jenuh

Dipanaskan selama 15 menit sampai toluene mendidik diatur kecepatan tetesan 2 tetes perdetik

Dibiarkan sampai semua air terdestilasi

Dibiarkan tabung penerima dingin sampai air dan toluen memisah sempurna

Dihitung volume air dalam tabung penerima

Volume air akhir

**Lampiran 4.**(Lanjutan)

1. Penetapan Kadar Sari Larut Air

Serbuk Simplisia

Ditimbang 5 gram

Dimaserasi dengan 100 ml air dan 0,25 ml kloroform selama 14 jam sambil sesekali dikocok

Disaring

Filtrat

Diambil 20 ml diuapkan dalam cawan poselen yang telah ditara pada suhu 105oC sampai bobot tetap

Ditimbang

Berat Sari

**Lampiran 4.**(Lanjutan)

1. Penetapan Kadar Sari Larut Etanol

Prosedur

Serbuk Simplisia

Ditimbang 5 gram

Dimaserasi dengan 100 ml etanol selama 24 jam sambil sesekali dikocok

Disaring

Filtrat

Diambil 20 ml diuapkan dalam cawan poselen yang telah ditara pada suhu 105oC sampai bobot tetap

Ditimbang

Berat Sari

**Lampiran 4.**(Lanjutan)

1. Penetapan Kadar Abu Total

Prosedur

Serbuk Simplisia

Ditimbang 2 gram

Dimasukkan dalam kurs porselen dalam tanur dipijar dan ditara

Dimasukkan kurs porselen dalam tanur dipijar pada suhu 600oC selama 3 jam

Dikeluarkan didinginkan

Ditimbang

Berat Abu

1. Penetapan Kadar Abu Tidak Larut Asam

Prosedur

Abu

Dimasukkan dalam cawan

Ditambah 25 ml HCL encer

Didihkan selama 15 menit

Disaring dengan kertas saring bebas abu

Dipijar dalam tanur

Berat Abu Tidak Larut Asam

Didinginkan dan ditimbang

**Lampiran 5.** Bagan Alir Ekstraksi

Prosedur (Metode Maserasi)

Serbuk Simplisia

Ditimbang 500 gram

Dimasukkan dalam bejana

Ditambahkan 75 bagian etanol 96% (3750 ml) diamkan selama 5 hari

Diaduk sesekali dan disaring

Ampas I

Maserat I

Ditambahkan 25 bagian etanol 96% (1250 ml) didiamkan selama 2 hari

Diaduk sesekali dan disaring

Maserat I

Ampas II

Dibuang

Maserat I dan II

dicampur

Dipekatkan dengan rotary evapator pada suhu 78oC

Ekstrak Kental

**Lampiran 6.** Bagan Alir Penentuan Nilai SPF

Diukur Serapan DenganSpektrofotometri

UV-Vis

1700 ppm

1250 ppm

750 ppm

250 ppm

0,0170 gram

0,0125 gram

0,0075 gram

0,0025 gram

Ditimbang

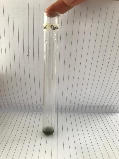
Eksrak Etanol

Kulit Bawang

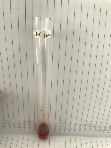
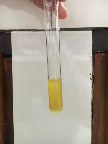
AquadestAquadestAquadest Aquadest

**Lampiran 7.** Hasil Uji Skrining Fitokimia

1. Serbuk kulit bawang merah

a b c

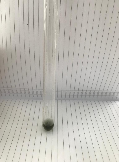
d e f

Keterangan :

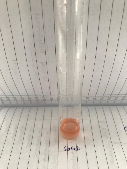
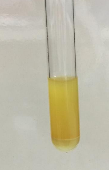
1. Tannin
2. Saponin
3. Alkaloid
4. Flavonoid
5. Steroid
6. Glikosida antrakuinon

**Lampiran 7.**(Lanjutan)

1. Ekstrak kulit bawang merah

a b c

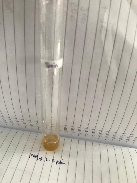
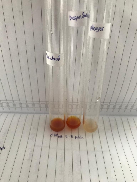
d e f

Keterangan :

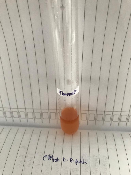
1. Tannin
2. Saponin
3. Alkaloid
4. Flavonoid
5. Steroid
6. Glikosida antrakuinon

**Lampiran 7.**(Lanjutan)

1. Serbuk kulit bawang putih

a b c

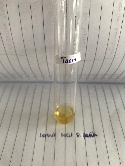
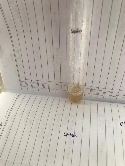
d e f

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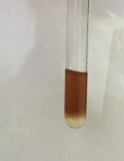
1. Tannin
2. Saponin
3. Alkaloid
4. Flavonoid
5. Steroid
6. Glikosida antrakuinon

**Lampiran 7.**(Lanjutan)

1. Ekstrak kulit bawang putih

a b c

d e f

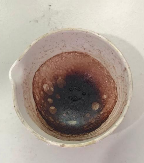
Keterangan :

1. Tannin
2. Saponin
3. Alkaloid
4. Flavonoid
5. Steroid
6. Glikosida antrakuinon

**Lampiran 8.** Hasil Karakterisasi Simplisia

a b c

d e f

g h i

Keterangan :

1. Penetapan kadar air
2. Kadar sari larut dalam air (kulit bawang merah)
3. Kadar sari larut dalam air (kulit bawang putih)
4. Kadar sari larut dalam etanol (kulit bawang merah)
5. Kadar sari larut dalam etanol (kulit bawang putih)
6. Kadar abu total (kulit bawang merah)
7. Kadar abu total (kulit bawang putih)
8. Kadar abu tidak larut dalam asam (kulit bawang merah)
9. Kadar abu tidak larut dalam asam (kulit bawang putih)

**Lampiran 9.** Proses Pembutan Simplisia Dan Ekstrak Kulit Bawang Merah



a b c



d e f

g h

Keterangan :

1. Pensortiran kulit bawang merah
2. Pencucian kulit bawang merah
3. Pengeringan simplisia dilemari pengering
4. Pengayakan
5. Maserasi selama 7 hari
6. Rotary
7. Penguapan
8. Ekstrak kental

**Lampiran 10.** Proses Pembutan Simplisia Dan Ekstrak Kulit Bawang Putih

a b c

d e f

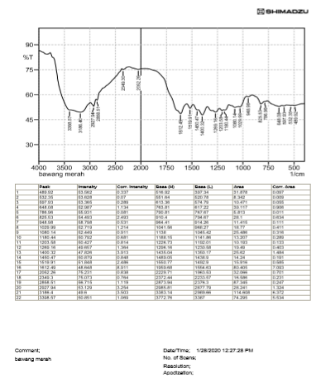
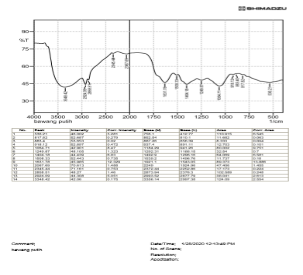
 

g h

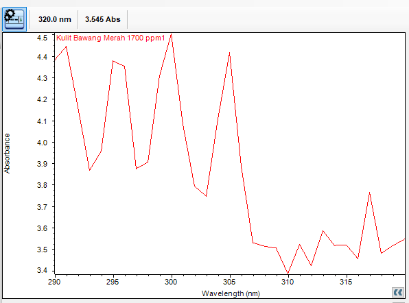
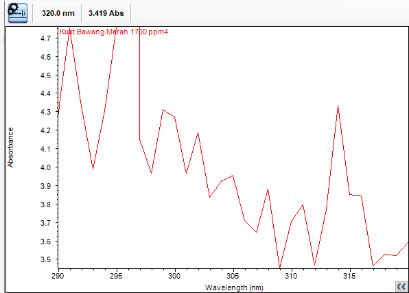
Keterangan :

1. Pensortiran kulit bawang putih
2. Pencucian kulit bawang putih
3. Pengeringan simplisia dilemari pengering
4. Pengayakan
5. Maserasi selama 7 hari
6. Rotary
7. Penguapan
8. Ekstrak kental

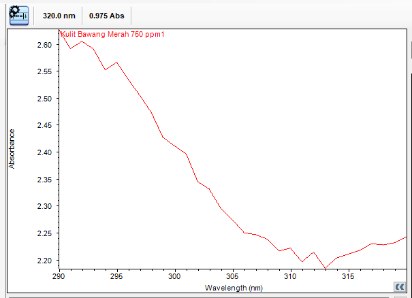
**Lampiran 11.** Hasil Spektrofotometri Inflamerah

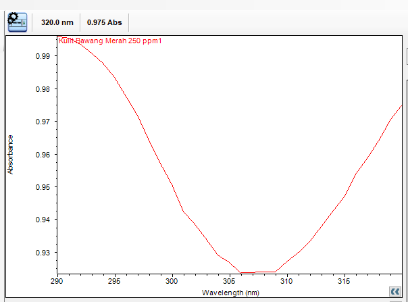
1. Kulit bawang merah
2. Kulit bawang putih

**Lampiran 12.** Hasil Spektrofotometri Uv-Vis Nilai SPF

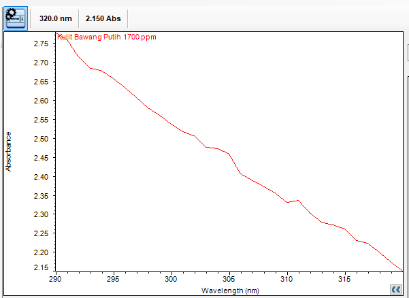
1. Ekstrak Kulit bawang merah konsentrasi 1700 ppm
2. Ekstrak kulit bawang merah konsentrasi 1250 ppm

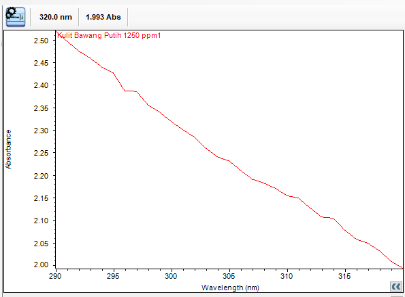
**Lampiran 12.** (Lanjutan)

1. Ekstrak kulit bawang merah konsentrasi 750 ppm
2. Ekstrak kulit bawang merah konsentrasi 250 ppm



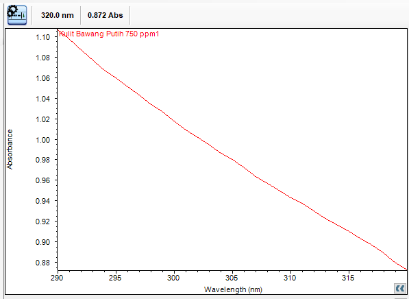
**Lampiran 12.** (Lanjutan)

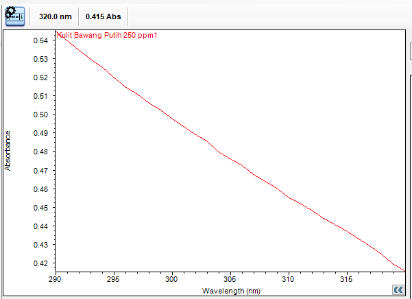
1. Ekstrak kulit bawang putih konsentrasi 1700 ppm
2. Ekstrak kulit bawang putih konsentrasi 1250 ppm



**Lampiran 12.** (Lanjutan)

1. Ekstrak kulit bawang putih konsentrasi 750 ppm



1. Ekstrak kulit bawang putih konsentrasi 250 ppm

**Lampiran 13.** Perhitungan Karakterisasi Simplisia

1. Perhitungan penetapan kadar air
2. **Kulit bawang merah**

Kadar air simplisia = x 100 %

**Pengulangan 1**

Berat sampel = 2,5 gram

Volume 1 = 0,1 ml

Volume 2 = 0,3 ml

Kadar air = x 100 %

= 8 %

**Pengulangan 2**

Berat sampel = 2,5 gram

Volume 1 = 0,4ml

Volume 2 = 0,6 ml

Kadar air = x 100 %

= 8 %

Rata-rata kadar = = 8 %

1. **Kulit bawang putih**

**Pengulangan** 1

Berat sampel = 2,5 gram

Volume 1 = 0,3 ml

**Lampiran 13.** (Lanjutan)

Volume 2 = 0,15 ml

Kadar air = x 100 %

**Pengulangan 2**

Berat sampel = 2,5 gram

Volume 1 = 0,15 ml

Volume 2 = 0,35 ml

Kadar air = x 100 %

= 8 %

Rata-rata kadar = = 7 %

1. Perhitungan penetapan kadar sari larut dalam air
2. **Kulit Bawang Merah**

Kadar Sari Larut air =

**Pengulangan I**

Berat cawan kosong = 32,3251 gram

Berat cawan + sari = 32,3735gram

Berat sari kering = (Berat cawan + sari) – ( Berat cawan kosong)

= 32,3735 gram - 32,3251 gram =0,0484gram

Kadar sari larut air = x 100 %

**Lampiran 13.** (Lanjutan)

= 4,84 %

**Pengulangan II**

Berat cawan kosong = 26,9688 gram

Berat cawan + sari = 27,0066gram

Berat sari kering = (Berat cawan + sari) – ( Berat cawan kosong)

= 27,0066 gram - 26,9688 gram = 0,0378 gram

Kadar sari larut air = x 100 %

= 3,78%

Rata-rata kadar = = 4,31%

1. **Kulit Bawang Putih**

**Pengulangan I**

Berat cawan kosong = 58,8530 gram

Berat cawan + sari = 58,9439gram

Berat sari kering = (Berat cawan + sari) – ( Berat cawan kosong)

= 58,9439 gram - 58,8530 gram = 0,0909 gram

Kadar sari larut air = x 100 %

= 9,09 %

**Lampiran 13.** (Lanjutan)

**Pengulangan II**

Berat cawan kosong = 55,7421 gram

Berat cawan + sari = 55,8402 gram

Berat sari kering = (Berat cawan + sari) – ( Berat cawan kosong)

= 55,8402 gram - 55,7421 gram = 0,0981 gram

Kadar sari larut air = x 100 %

= 9,8 %

Rata-rata kadar = = 9,45%

1. Perhitungan penetapan kadar sari larut dalam etanol
   1. **Kulit bawang merah**

**Pengulangan I**

Berat cawan kosong = 32,3251 gram

Berat cawan + sari = 32,3682 gram

Berat sari kering = (Berat cawan + sari) – ( Berat cawan kosong)

= 32,3682 gram - 32,3251 gram = 0,0431 gram

Kadar sari larut etanol = x 100 %

= 4,31 %

**Lampiran 13.** (Lanjutan)

**Pengulangan II**

Berat cawan kosong = 26,9688 gram

Berat cawan + sari = 27,0261 gram

Berat sari kering = (Berat cawan + sari) – ( Berat cawan kosong)

= 27,0261 gram - 26,9688 gram = 0,0573 gram

Kadar sari larut etanol = x 100 %

= 5,73%

Rata-rata kadar = = 5.02%

* 1. **Kulit bawang putih**

**Pengulangan I**

Berat cawan kosong = 58,8530 gram

Berat cawan + sari = 58,901 gram

Berat sari kering = (Berat cawan + sari) – ( Berat cawan kosong)

= 58,901 gram - 58,8530 gram = 0.048 gram

Kadar sari larut etanol = x 100 %

= 4,8 %

**Pengulangan II**

Berat cawan kosong = 26,9688 gram

**Lampiran 13.** (Lanjutan)

Berat cawan + sari = 27,061 gram

Berat sari kering = (Berat cawan + sari) – ( Berat cawan kosong)

= 27,061 gram - 26,9688 gram = 0,0472 gram

Kadar sari larut etanol = x 100 %

= 4,72 %

Rata-rata kadar = = 4,76%

1. Perhitungan kadar abu total
   1. **Kulit bawang merah**

Kadar Abu Total =

**Pengulangan I**

Berat Krus Kosong = 59,53gram

Berat Krus + Abu = 59,69 gram

Berat Abu = (Berat krus + abu) – ( Berat krus kosong)

= 59,69 gram - 59,53 gram = 0,161 gram

Kadar Abu Total = x 100 %

= 5,3 %

**Pengulangan II**

Berat Krus Kosong = 63,13 gram

Berat Krus + Abu = 63,26 gram

**Lampiran 13.** (Lanjutan)

Berat Abu = (Berat krus + abu) – ( Berat krus kosong)

= 63,26 gram - 63,13 gram = 0,15 gram

Kadar Abu Total = x 100 %

= 5 %

Rata-rata kadar = = 5.15%

* 1. **Kulit bawang putih**

**Pengulangan I**

Berat Krus Kosong = 52,82gram

Berat Krus + Abu = 52,95 gram

Berat Abu = (Berat krus + abu) – ( Berat krus kosong)

= 52,95 gram - 52,82 gram = 0,13 gram

Kadar Abu Total = x 100 %

= 4,3 %

**Pengulangan II**

Berat Krus Kosong = 52,79.gram

Berat Krus + Abu = 52,91 gram

Berat Abu = (Berat krus + abu) – ( Berat krus kosong)

= 52,91 gram - 52,79 gram = 0,12 gram

Kadar Abu Total = x 100 %

= 4 %

Rata-rata kadar = = 4,15%

**Lampiran 13.** (Lanjutan)

1. Perhitungan kadar abu tidak larut asam
   1. **Kulit bawang merah**

Kadar abu tidak larut asam = x 100%

**Pengulangan I**

Berat abu mula-mula = 0,16 gram

Berat Krus kosong = 59,5350 gram

Berat krus + abu tidak larut asam = 59,5361 gram

Berat abu tidak larut asam = (Berat krus + abu tidak larut asam) – (Berat krus kosong)

= 59,5361 gram – 59,5350 gram

= 0,0011 gram

Kadar Abu tidak larut asam = x 100 %

= 0,6875 %

**Pengulangan II**

Berat abu mula-mula = 0,15 gram

Berat Krus kosong = 63,1445 gram

Berat krus + abu tidak larut asam = 63,1459gram

Berat abu tidak larut asam = (Berat krus + abu tidak larut asam) – (Berat krus kosong)

= 63,1459 gram – 63,1445 gram

= 0,008 gram

Kadar Abu tidak larut asam = x 100 %

**Lampiran 13.** (Lanjutan)

= 0,5333 %

Rata-rata kadar = = 0,6104%

* 1. **Kulit bawang putih**

**Pengulangan I**

Berat abu mula-mula = 0,163gram

Berat Krus kosong = 52,8203gram

Berat krus + abu tidak larut asam = 52,8211 gram

Berat abu tidak larut asam = (Berat krus + abu tidak larut asam) – (Berat krus kosong)

= 52,8211 gram – 52,8203 gram

= 0,0008 gram

Kadar Abu tidak larut asam = x 100 %

= 0,6153 %

**Pengulangan II**

Berat abu mula-mula = 0,12 gram

Berat Krus kosong = 52,7911 gram

Berat krus + abu tidak larut asam = 52,7920gram

Berat abu tidak larut asam = (Berat krus + abu tidak larut asam) – (Berat krus kosong)

= 52,7920 gram – 52,7911 gram

= 0,0009 gram

**Lampiran 13.** (Lanjutan)

Kadar Abu tidak larut asam = x 100 % = 0,75 %Rata-rata kadar = = 0,6826%

**Lampiran 14.** Perhitungan Rendemen Ekstrak Kulit Bawang Merah (*Allium cepa*L.) dan kulit bawang putih (*Allium sativum* L.)

**1. Rendemen Ekstrak Kulit Kulit Bawang Merah (*Allium cepa* L.)**

Berat simplisia kulit Bawang Merah = 1000 gram

Berat ekstrak kental kulit Bawang Merah = 84,62 gram

% Rendemen = x 100 %

= x 100%

= 8,462 %

**2. Rendemen Ekstrak Kulit Bawang Putih (*Allium sativum* L.)**

Berat simplisia kulit Bawang Putih = 1000 gram

Berat ekstrak kental kulit Bawang putih = 52,33 gram

% Rendemen = x 100 %

= x 100%

= 5,233 %

**Lampiran 15.** Contoh Perhitungan Nilai SPF

Estrak Kulit bawang merah konsentrasi 1700 ppm dengan pengulang 1

SPF

Dimana:

EE (λ) – spectrum efek eritema;

I (λ) – spectrum intensitas solar;

Abs (λ) – absrobansi produk tabir surya;

CF – factor koreksi (=10)

SPF = 10 x [ (3.832 x 0.0150) +b(4.100x 0.0817) + (3.854 x 0.2874) + (3.413 x 0.3278) + (3.349 x 0.1864) + (3.267 x 0.0839) + (0.975 x 0.0180)]

= 35.394

**Contoh Perehitungan Ketahanan SPF**

1 spf tahan selama 10 menit

41,513 x = 6,9 jam

**Lampiran 16.** Spektrumserapan UV Dari Sampel Ekstrak Kulit Bawang Merah   
Dan Ekstrak Kulit Bawang Putih

Ekstrak bawang merah

Kulit bawang merah konsentrasi 1700 ppm

|  |  |  |
| --- | --- | --- |
| Data: Pengulangan 1 | | |
| No | Wavelenght | Absorbance |
| 1 | 290 | 4.486 |
| 2 | 295 | 4.375 |
| 3 | 300 | 4.490 |
| 4 | 305 | 4.410 |
| 5 | 310 | 3.394 |
| 6 | 315 | 3.509 |
| 7 | 320 | 3.545 |

|  |  |  |
| --- | --- | --- |
| Data: Pengulangan 2 | | |
| No | Wavelenght | Absorbance |
| 1 | 290 | 3.852 |
| 2 | 295 | 4.298 |
| 3 | 300 | 3.772 |
| 4 | 305 | 3.578 |
| 5 | 310 | 3.587 |
| 6 | 315 | 3.418 |
| 7 | 320 | 3.419 |

|  |  |  |
| --- | --- | --- |
| Data: Pengulangan 3 | | |
| No | Wavelenght | Absorbance |
| 1 | 290 | 4.708 |
| 2 | 295 | 4.749 |
| 3 | 300 | 4.266 |
| 4 | 305 | 3.935 |
| 5 | 310 | 3.682 |
| 6 | 315 | 3.857 |
| 7 | 320 | 3.419 |

**Lampiran 16.** (Lanjutan)

Kulit bawang merah konsentrasi 1250 ppm

|  |  |  |
| --- | --- | --- |
| Data: Pengulangan 1 | | |
| No | Wavelenght | Absorbance |
| 1 | 290 | 3.832 |
| 2 | 295 | 4.100 |
| 3 | 300 | 3.854 |
| 4 | 305 | 3.413 |
| 5 | 310 | 3.349 |
| 6 | 315 | 3.267 |
| 7 | 320 | 0.975 |

|  |  |  |
| --- | --- | --- |
| Data: Pengulangan 2 | | |
| No | Wavelenght | Absorbance |
| 1 | 290 | 4.035 |
| 2 | 295 | 3.950 |
| 3 | 300 | 4.009 |
| 4 | 305 | 3.502 |
| 5 | 310 | 3.405 |
| 6 | 315 | 3.349 |
| 7 | 320 | 0.975 |

|  |  |  |
| --- | --- | --- |
| Data: Pengulangan 3 | | |
| No | Wavelenght | Absorbance |
| 1 | 290 | 5.089 |
| 2 | 295 | 3.826 |
| 3 | 300 | 3.895 |
| 4 | 305 | 3.444 |
| 5 | 310 | 3.444 |
| 6 | 315 | 3.329 |
| 7 | 320 | 0.975 |

**Lampiran 16.** (Lanjutan)

Kulit bawang merah konsentrasi 750 ppm

|  |  |  |
| --- | --- | --- |
| Data: Pengulangan 1 | | |
| No | Wavelenght | Absorbance |
| 1 | 290 | 2.625 |
| 2 | 295 | 2.577 |
| 3 | 300 | 2.403 |
| 4 | 305 | 2.271 |
| 5 | 310 | 2.225 |
| 6 | 315 | 2.213 |
| 7 | 320 | 0.975 |

|  |  |  |
| --- | --- | --- |
| Data: Pengulangan 2 | | |
| No | Wavelenght | Absorbance |
| 1 | 290 | 2.615 |
| 2 | 295 | 2.576 |
| 3 | 300 | 2.403 |
| 4 | 305 | 2.285 |
| 5 | 310 | 2.217 |
| 6 | 315 | 2.205 |
| 7 | 320 | 0.975 |

|  |  |  |
| --- | --- | --- |
| Data: Pengulangan 3 | | |
| No | Wavelenght | Absorbance |
| 1 | 290 | 2.612 |
| 2 | 295 | 2.550 |
| 3 | 300 | 2.419 |
| 4 | 305 | 2.273 |
| 5 | 310 | 2.216 |
| 6 | 315 | 2.214 |
| 7 | 320 | 0.975 |

**Lampiran 16.** (Lanjutan)

Kulit bawang merah konsentrasi 250 ppm

|  |  |  |
| --- | --- | --- |
| Data: Pengulangan 1 | | |
| No | Wavelenght | Absorbance |
| 1 | 290 | 0.979 |
| 2 | 295 | 0.983 |
| 3 | 300 | 0.951 |
| 4 | 305 | 0.926 |
| 5 | 310 | 0.927 |
| 6 | 315 | 0.948 |
| 7 | 320 | 0.975 |

|  |  |  |
| --- | --- | --- |
| Data: Pengulangan 2 | | |
| No | Wavelenght | Absorbance |
| 1 | 290 | 0.996 |
| 2 | 295 | 0.985 |
| 3 | 300 | 0.950 |
| 4 | 305 | 0.927 |
| 5 | 310 | 0.927 |
| 6 | 315 | 0.944 |
| 7 | 320 | 0.975 |

|  |  |  |
| --- | --- | --- |
| Data: Pengulangan 3 | | |
| No | Wavelenght | Absorbance |
| 1 | 290 | 0.999 |
| 2 | 295 | 0.985 |
| 3 | 300 | 0.951 |
| 4 | 305 | 0.929 |
| 5 | 310 | 0.929 |
| 6 | 315 | 0.946 |
| 7 | 320 | 0.975 |

**Lampiran 16.** (Lanjutan)

Ekstrak bawang putih

Kulit bawang putih konsentrasi 1700 ppm

|  |  |  |
| --- | --- | --- |
| Data: Pengulangan 1 | | |
| No | Wavelenght | Absorbance |
| 1 | 290 | 2.775 |
| 2 | 295 | 2.654 |
| 3 | 300 | 2.536 |
| 4 | 305 | 2.457 |
| 5 | 310 | 2.330 |
| 6 | 315 | 2.257 |
| 7 | 320 | 2.150 |

|  |  |  |
| --- | --- | --- |
| Data: Pengulangan 2 | | |
| No | Wavelenght | Absorbance |
| 1 | 290 | 2.784 |
| 2 | 295 | 2.640 |
| 3 | 300 | 2.560 |
| 4 | 305 | 2.444 |
| 5 | 310 | 2.353 |
| 6 | 315 | 2.255 |
| 7 | 320 | 2.151 |

|  |  |  |
| --- | --- | --- |
| Data: Pengulangan 3 | | |
| No | Wavelenght | Absorbance |
| 1 | 290 | 2.759 |
| 2 | 295 | 2.672 |
| 3 | 300 | 2.558 |
| 4 | 305 | 2.435 |
| 5 | 310 | 2.331 |
| 6 | 315 | 2.258 |
| 7 | 320 | 2.168 |

**Lampiran 16.** (Lanjutan)

Kulit bawang putih konsentrasi 1250 ppm

|  |  |  |
| --- | --- | --- |
| Data: Pengulangan 1 | | |
| No | Wavelenght | Absorbance |
| 1 | 290 | 2.517 |
| 2 | 295 | 2.421 |
| 3 | 300 | 2.308 |
| 4 | 305 | 2.214 |
| 5 | 310 | 2.157 |
| 6 | 315 | 2.076 |
| 7 | 320 | 1.993 |

|  |  |  |
| --- | --- | --- |
| Data: Pengulangan 2 | | |
| No | Wavelenght | Absorbance |
| 1 | 290 | 2.527 |
| 2 | 295 | 2.417 |
| 3 | 300 | 2.324 |
| 4 | 305 | 2.230 |
| 5 | 310 | 2.146 |
| 6 | 315 | 2.082 |
| 7 | 320 | 1.979 |

|  |  |  |
| --- | --- | --- |
| Data: Pengulangan 3 | | |
| No | Wavelenght | Absorbance |
| 1 | 290 | 2.513 |
| 2 | 295 | 2.398 |
| 3 | 300 | 2.311 |
| 4 | 305 | 2.212 |
| 5 | 310 | 2.129 |
| 6 | 315 | 2.055 |
| 7 | 320 | 1.993 |

**Lampiran 16.** (Lanjutan)

Kulit bawang putih konsentrasi 750 ppm

|  |  |  |
| --- | --- | --- |
| Data: Pengulangan 1 | | |
| No | Wavelenght | Absorbance |
| 1 | 290 | 1.107 |
| 2 | 295 | 1.054 |
| 3 | 300 | 1.015 |
| 4 | 305 | 0.978 |
| 5 | 310 | 0.943 |
| 6 | 315 | 0.911 |
| 7 | 320 | 0.872 |

|  |  |  |
| --- | --- | --- |
| Data: Pengulangan 2 | | |
| No | Wavelenght | Absorbance |
| 1 | 290 | 1.101 |
| 2 | 295 | 1.059 |
| 3 | 300 | 1.017 |
| 4 | 305 | 0.972 |
| 5 | 310 | 0.940 |
| 6 | 315 | 0.909 |
| 7 | 320 | 0.869 |

|  |  |  |
| --- | --- | --- |
| Data: Pengulangan 3 | | |
| No | Wavelenght | Absorbance |
| 1 | 290 | 1.104 |
| 2 | 295 | 1.050 |
| 3 | 300 | 1.005 |
| 4 | 305 | 0.979 |
| 5 | 310 | 0.941 |
| 6 | 315 | 0.906 |
| 7 | 320 | 0.869 |

**Lampiran 16.** (Lanjutan)

Kulit bawang konsetrasi 250 ppm

|  |  |  |
| --- | --- | --- |
| Data: Pengulangan 1 | | |
| No | Wavelenght | Absorbance |
| 1 | 290 | 0.544 |
| 2 | 295 | 0.519 |
| 3 | 300 | 0.497 |
| 4 | 305 | 0.475 |
| 5 | 310 | 0.456 |
| 6 | 315 | 0.438 |
| 7 | 320 | 0.145 |

|  |  |  |
| --- | --- | --- |
| Data: Pengulangan 2 | | |
| No | Wavelenght | Absorbance |
| 1 | 290 | 0.543 |
| 2 | 295 | 0.516 |
| 3 | 300 | 0.494 |
| 4 | 305 | 0.475 |
| 5 | 310 | 0.455 |
| 6 | 315 | 0.434 |
| 7 | 320 | 0.413 |

|  |  |  |
| --- | --- | --- |
| Data: Pengulangan 3 | | |
| No | Wavelenght | Absorbance |
| 1 | 290 | 0.542 |
| 2 | 295 | 0.517 |
| 3 | 300 | 0.494 |
| 4 | 305 | 0.472 |
| 5 | 310 | 0.453 |
| 6 | 315 | 0.432 |
| 7 | 320 | 0.413 |

**Lampiran 17.** Tabel Data Serapan UV Dan Perhitungan Nilai SPF

Ekstrak kulit bawang merah

Kulit bawang merah kosentrasi 1700 ppm

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Sampel | λ(nm) | Abs | EE\*I | EE\*I\*Abs | CF | SPF |
| Pengulangan 1 | 290 | 3.832 | 0,0150 | 0.0574 | 10 | 35.344 |
| 295 | 4.100 | 0,0817 | 0.3349 |
| 300 | 3.854 | 0,2874 | 1.1076 |
| 305 | 3.413 | 0,3278 | 1.1187 |
| 310 | 3,349 | 0,1864 | 0.6242 |
| 315 | 3.267 | 0,0839 | 0.2741 |
| 320 | 0.975 | 0,0180 | 0.0175 |
| Total EE\*I\*Abs | | | | 3.5344 |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Sampel | λ(nm) | Abs | EE\*I | EE\*I\*Abs | CF | SPF |
| Pengulangan 2 | 290 | 4.035 | 0,0150 | 0.0605 | 10 | 36.162 |
| 295 | 3.950 | 0,0817 | 0.3227 |
| 300 | 4.009 | 0,2874 | 1.1521 |
| 305 | 3.502 | 0,3278 | 1.1479 |
| 310 | 3,405 | 0,1864 | 0.6346 |
| 315 | 3.349 | 0,0839 | 0.2809 |
| 320 | 0.975 | 0,0180 | 0.0175 |
| Total EE\*I\*Abs | | | | 3.6162 |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Sampel | λ(nm) | Abs | EE\*I | EE\*I\*Abs | CF | SPF |
| Pengulangan 3 | 290 | 5.089 | 0,0150 | 0.0763 | 10 | 35.758 |
| 295 | 3.826 | 0,0817 | 0.3125 |
| 300 | 3.896 | 0,2874 | 1.1194 |
| 305 | 3.444 | 0,3278 | 1.1289 |
| 310 | 3.444 | 0,1864 | 0.6419 |
| 315 | 3.329 | 0,0839 | 0.2793 |
| 320 | 0.975 | 0,0180 | 0.0175 |
| Total EE\*I\*Abs | | | | 3.5758 |

**Lampiran 17.** (Lanjutan)

Kulit bawang merah kosnsentrasi 1250 ppm

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Sampel | λ(nm) | Abs | EE\*I | EE\*I\*Abs | CF | SPF |
| Pengulangan 1 | 290 | 3.832 | 0,0150 | 0.0574 | 10 | 35.344 |
| 295 | 4.100 | 0,0817 | 0.3344 |
| 300 | 3.854 | 0,2874 | 1.1076 |
| 305 | 3.413 | 0,3278 | 1.1187 |
| 310 | 3,349 | 0,1864 | 0.6264 |
| 315 | 3.267 | 0,0839 | 0.2741 |
| 320 | 0.975 | 0,0180 | 0.0175 |
| Total EE\*I\*Abs | | | | 3.5344 |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Sampel | λ(nm) | Abs | EE\*I | EE\*I\*Abs | CF | SPF |
| Pengulangan 2 | 290 | 4.035 | 0,0150 | 0.0605 | 10 | 36.162 |
| 295 | 3.950 | 0,0817 | 0.3227 |
| 300 | 4.009 | 0,2874 | 1.1521 |
| 305 | 3.502 | 0,3278 | 1.1479 |
| 310 | 3,405 | 0,1864 | 0.6346 |
| 315 | 3.349 | 0,0839 | 0.2809 |
| 320 | 0.975 | 0,0180 | 0.0175 |
| Total EE\*I\*Abs | | | | 3.6162 |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Sampel | λ(nm) | Abs | EE\*I | EE\*I\*Abs | CF | SPF |
| Pengulangan 3 | 290 | 5.089 | 0,0150 | 0.0763 | 10 | 35.758 |
| 295 | 3.829 | 0,0817 | 0.3125 |
| 300 | 3.895 | 0,2874 | 1.1194 |
| 305 | 3.444 | 0,3278 | 1.1289 |
| 310 | 3,444 | 0,1864 | 0.6419 |
| 315 | 3.329 | 0,0839 | 0.2793 |
| 320 | 0.975 | 0,0180 | 0.0175 |
| Total EE\*I\*Abs | | | | 3.5758 |

**Lampiran 17.**(Lanjutan)

Kulit bawang merah konsentrasi 750 ppm

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Sampel | λ(nm) | Abs | EE\*I | EE\*I\*Abs | CF | SPF |
| Pengulangan 1 | 290 | 2.625 | 0,0150 | 0.0393 | 10 | 23.026 |
| 295 | 2.577 | 0,0817 | 0.2105 |
| 300 | 2.403 | 0,2874 | 0.6906 |
| 305 | 2.271 | 0,3278 | 0.7444 |
| 310 | 2.225 | 0,1864 | 0.4147 |
| 315 | 2.213 | 0,0839 | 0.1856 |
| 320 | 0.975 | 0,0180 | 0.0175 |
| Total EE\*I\*Abs | | | | 2.3026 |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Sampel | λ(nm) | Abs | EE\*I | EE\*I\*Abs | CF | SPF |
| Pengulangan 2 | 290 | 2.615 | 0,0150 | 0.0392 | 10 | 23.048 |
| 295 | 2.576 | 0,0817 | 0.2104 |
| 300 | 2.403 | 0,2874 | 0.6906 |
| 305 | 2.285 | 0,3278 | 0.7490 |
| 310 | 2.217 | 0,1864 | 0.4132 |
| 315 | 2.205 | 0,0839 | 0.1819 |
| 320 | 0.975 | 0,0180 | 0.0175 |
| Total EE\*I\*Abs | | | | 2.3048 |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Sampel | λ(nm) | Abs | EE\*I | EE\*I\*Abs | CF | SPF |
| Pengulangan 3 | 290 | 2.612 | 0,0150 | 0.0391 | 10 | 23.038 |
| 295 | 2.550 | 0,0817 | 0.2083 |
| 300 | 2.419 | 0,2874 | 0.6950 |
| 305 | 2.273 | 0,3278 | 0.7450 |
| 310 | 2.216 | 0,1864 | 0.4130 |
| 315 | 2.214 | 0,0839 | 0.1817 |
| 320 | 0.975 | 0,0180 | 0.0175 |
| Total EE\*I\*Abs | | | | 2.3038 |

**Lampiran 17.**(Lanjutan)

Kulit bawang merah konsentrasi 250 ppm

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Sampel | λ(nm) | Abs | EE\*I | EE\*I\*Abs | CF | SPF |
| Pengulangan 1 | 290 | 0.979 | 0,0150 | 0.0146 | 10 | 9.378 |
| 295 | 0.983 | 0,0817 | 0.0803 |
| 300 | 0.951 | 0,2874 | 0.2733 |
| 305 | 0.926 | 0,3278 | 0.3035 |
| 310 | 0.927 | 0,1864 | 0.1727 |
| 315 | 0.948 | 0,0839 | 0.0759 |
| 320 | 0.975 | 0,0180 | 0.0175 |
| Total EE\*I\*Abs | | | | 0.9378 |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Sampel | λ(nm) | Abs | EE\*I | EE\*I\*Abs | CF | SPF |
| Pengulangan 2 | 290 | 0.996 | 0,0150 | 0.0149 | 10 | 9.415 |
| 295 | 0.985 | 0,0817 | 0.0804 |
| 300 | 0.950 | 0,2874 | 0.2730 |
| 305 | 0.927 | 0,3278 | 0.3038 |
| 310 | 0.927 | 0,1864 | 0.1727 |
| 315 | 0.944 | 0,0839 | 0.0792 |
| 320 | 0.975 | 0,0180 | 0.0175 |
| Total EE\*I\*Abs | | | | 0.9415 |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Sampel | λ(nm) | Abs | EE\*I | EE\*I\*Abs | CF | SPF |
| Pengulangan 3 | 290 | 0.999 | 0,0150 | 0.0149 | 10 | 9.43 |
| 295 | 0.985 | 0,0817 | 0.0804 |
| 300 | 0.951 | 0,2874 | 0.2733 |
| 305 | 0.929 | 0,3278 | 0.3045 |
| 310 | 0.929 | 0,1864 | 0.1731 |
| 315 | 0.946 | 0,0839 | 0.0793 |
| 320 | 0.975 | 0,0180 | 0.0175 |
| Total EE\*I\*Abs | | | | 0.943 |

**Lampiran 17.**(Lanjutan)

Ekstrak kulit bawang putih

Kulit bawang putih konsentrasi 1700 ppm

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Sampel | λ(nm) | Abs | EE\*I | EE\*I\*Abs | CF | SPF |
| Pengulangan 1 | 290 | 2.775 | 0,0150 | 0.0416 | 10 | 24.549 |
| 295 | 2.654 | 0,0817 | 0.2168 |
| 300 | 2.536 | 0,2874 | 0.7288 |
| 305 | 2.457 | 0,3278 | 0.8054 |
| 310 | 2.330 | 0,1864 | 0.4343 |
| 315 | 2.257 | 0,0839 | 0.1893 |
| 320 | 2.150 | 0,0180 | 0.0387 |
| Total EE\*I\*Abs | | | | 2.4549 |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Sampel | λ(nm) | Abs | EE\*I | EE\*I\*Abs | CF | SPF |
| Pengulangan 2 | 290 | 2.784 | 0,0150 | 0.04176 | 10 | 24.539 |
| 295 | 2.640 | 0,0817 | 0.2156 |
| 300 | 2.560 | 0,2874 | 0.7357 |
| 305 | 2.444 | 0,3278 | 0.8011 |
| 310 | 2.353 | 0,1864 | 0.4385 |
| 315 | 2.255 | 0,0839 | 0.1891 |
| 320 | 2.151 | 0,0180 | 0.0322 |
| Total EE\*I\*Abs | | | | 2.4539 |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Sampel | λ(nm) | Abs | EE\*I | EE\*I\*Abs | CF | SPF |
| Pengulangan 3 | 290 | 2.759 | 0,0150 | 0.0413 | 10 | 24.286 |
| 295 | 2.672 | 0,0817 | 0.2183 |
| 300 | 2.558 | 0,2874 | 0.7351 |
| 305 | 2.435 | 0,3278 | 0.7981 |
| 310 | 2.331 | 0,1864 | 0.4394 |
| 315 | 2.258 | 0,0839 | 0.1894 |
| 320 | 2.168 | 0,0180 | 0.0390 |
| Total EE\*I\*Abs | | | | 2.4286 |

**Lampiran 17.**(Lanjutan)

Kulit bawang putih konsentrasi 1250 ppm

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Sampel | λ(nm) | Abs | EE\*I | EE\*I\*Abs | CF | SPF |
| Pengulangan 1 | 290 | 2.517 | 0,0150 | 0.0385 | 10 | 22.371 |
| 295 | 2.421 | 0,0817 | 0.1977 |
| 300 | 2.308 | 0,2874 | 0.6633 |
| 305 | 2.214 | 0,3278 | 0.7257 |
| 310 | 2.157 | 0,1864 | 0.4020 |
| 315 | 2.076 | 0,0839 | 0.1741 |
| 320 | 1.993 | 0,0180 | 0.0358 |
| Total EE\*I\*Abs | | | | 2.2371 |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Sampel | λ(nm) | Abs | EE\*I | EE\*I\*Abs | CF | SPF |
| Pengulangan 2 | 290 | 2.527 | 0,0150 | 0.0379 | 10 | 22.443 |
| 295 | 2.417 | 0,0817 | 0.1974 |
| 300 | 2.324 | 0,2874 | 0.6679 |
| 305 | 2.230 | 0,3278 | 0.7309 |
| 310 | 2.146 | 0,1864 | 0.4000 |
| 315 | 2.082 | 0,0839 | 0.1746 |
| 320 | 1.979 | 0,0180 | 0.0356 |
| Total EE\*I\*Abs | | | | 2.2443 |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Sampel | λ(nm) | Abs | EE\*I | EE\*I\*Abs | CF | SPF |
| Pengulangan 3 | 290 | 2.513 | 0,0150 | 0.0376 | 10 | 22.276 |
| 295 | 2.398 | 0,0817 | 0.1959 |
| 300 | 2.311 | 0,2874 | 0.6641 |
| 305 | 2.212 | 0,3278 | 0.7250 |
| 310 | 2.129 | 0,1864 | 0.3968 |
| 315 | 2.055 | 0,0839 | 0.1724 |
| 320 | 2.993 | 0,0180 | 0.0358 |
| Total EE\*I\*Abs | | | | 2.2276 |

**Lampiran 17.**(Lanjutan)

Kulit bawang putih konsentrasi 750 ppm

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Sampel | λ(nm) | Abs | EE\*I | EE\*I\*Abs | CF | SPF |
| Pengulangan 1 | 290 | 1.107 | 0,0150 | 0.0166 | 10 | 9.826 |
| 295 | 1.054 | 0,0817 | 0.0861 |
| 300 | 1.015 | 0,2874 | 0.2917 |
| 305 | 0.978 | 0,3278 | 0.3205 |
| 310 | 0.943 | 0,1864 | 0.1757 |
| 315 | 0.911 | 0,0839 | 0.0764 |
| 320 | 0.872 | 0,0180 | 0.0156 |
| Total EE\*I\*Abs | | | | 0.9826 |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Sampel | λ(nm) | Abs | EE\*I | EE\*I\*Abs | CF | SPF |
| Pengulangan 2 | 290 | 1.101 | 0,0150 | 0.0165 | 10 | 9.808 |
| 295 | 1.059 | 0,0817 | 0.0865 |
| 300 | 1.017 | 0,2874 | 0.2922 |
| 305 | 0.972 | 0,3278 | 0.3186 |
| 310 | 0.940 | 0,1864 | 0.1752 |
| 315 | 0.909 | 0,0839 | 0.0762 |
| 320 | 0.869 | 0,0180 | 0.0156 |
| Total EE\*I\*Abs | | | | 0.9808 |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Sampel | λ(nm) | Abs | EE\*I | EE\*I\*Abs | CF | SPF |
| Pengulangan 3 | 290 | 1.104 | 0,0150 | 0.0165 | 10 | 9.671 |
| 295 | 1.050 | 0,0817 | 0.0857 |
| 300 | 1.005 | 0,2874 | 0.2888 |
| 305 | 0.979 | 0,3278 | 0.3091 |
| 310 | 0.941 | 0,1864 | 0.1754 |
| 315 | 0.906 | 0,0839 | 0.0760 |
| 320 | 0.869 | 0,0180 | 0.056 |
| Total EE\*I\*Abs | | | | 0.9671 |

**Lampiran 17.**(Lanjutan)

Kulit bawang putih konsentrasi 250 ppm

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Sampel | λ(nm) | Abs | EE\*I | EE\*I\*Abs | CF | SPF |
| Pengulangan 1 | 290 | 0.544 | 0,0150 | 0.0081 | 10 | 4.78 |
| 295 | 0.519 | 0,0817 | 0.0424 |
| 300 | 0.497 | 0,2874 | 0.1428 |
| 305 | 0.475 | 0,3278 | 0.1557 |
| 310 | 0.456 | 0,1864 | 0.0367 |
| 315 | 0.438 | 0,0839 | 0.0367 |
| 320 | 0.415 | 0,0180 | 0.0074 |
| Total EE\*I\*Abs | | | | 0.478 |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Sampel | λ(nm) | Abs | EE\*I | EE\*I\*Abs | CF | SPF |
| Pengulangan 2 | 290 | 0.543 | 0,0150 | 0.0081 | 10 | 4.764 |
| 295 | 0.516 | 0,0817 | 0.0421 |
| 300 | 0.494 | 0,2874 | 0.1419 |
| 305 | 0.475 | 0,3278 | 0.1557 |
| 310 | 0.455 | 0,1864 | 0.0848 |
| 315 | 0.434 | 0,0839 | 0.0364 |
| 320 | 0.413 | 0,0180 | 0.0074 |
| Total EE\*I\*Abs | | | | 0.4764 |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Sampel | λ(nm) | Abs | EE\*I | EE\*I\*Abs | CF | SPF |
| Pengulangan 3 | 290 | 0.524 | 0,0150 | 0.0081 | 10 | 4.749 |
| 295 | 0.517 | 0,0817 | 0.0422 |
| 300 | 0.494 | 0,2874 | 0.1419 |
| 305 | 0.472 | 0,3278 | 0.1547 |
| 310 | 0.453 | 0,1864 | 0.0844 |
| 315 | 0.432 | 0,0839 | 0.0362 |
| 320 | 0.413 | 0,0180 | 0.0074 |
| Total EE\*I\*Abs | | | | 0.4749 |