



LAMPIRAN

Lampiran 1. Surat Keterangan Simplisia



SURAT KETERANGAN

Kami yang bertanda tangan di bawah ini, menerangkan bahwa bahan yang diambil dari CV. Merapi Farma Herbal oleh :

Nama : Widya Citra Lestari

Adalah benar simplisia dari tanaman :

Nama Tanaman : Cengkeh (*Eugenia aromatica O.K.*)

Bahan yang Diambil : Bunga

Demikian surat keterangan ini kami buat sesuai dengan sebenarnya, semoga dapat digunakan sebagaimana mestinya.

Yogyakarta, 03 Mei 2016

Management,



MERAPI FARMA HERBAL

Pembibitan, Penjualan Tanaman Obat, Outlet Jamu dan Wisata Agro

Jl. Kaliurang Km.21.5 Hargobinangun, Pakem Sleman Yogyakarta Telp.0274-896111, Fax: 0274-4478639

Outlet jamu

Jl. Palagan Tentara Pelajar Km. 8.8, Kamdanan, Sariharjo, Ngaglik, Sleman Yogyakarta Telp: 0274-866928

Website : www.merapifarmaherbal.com

e-mail : merapifarmaherbal@gmail.com

Lampiran 2. Surat Keterangan Pembelian Isolat Bakteri



BAGIAN MIKROBIOLOGI FARMASI PRODI FARMASI FMIPA UII
UNIVERSITAS ISLAM INDONESIA
Jl. Kaliurang KM 14.5 Yogyakarta 55584

SURAT KETERANGAN

Nomor : 040/ UII/ Far/ Lab. Mikro/ VIII / 2016

Dengan ini kami beritahukan bahwa :

Nama : WIDYA CITRA LESTARI
NIM : 12613282
Fakultas : FARMASI UNIVERSITAS ISLAM INDONESIA
Judul Skripsi : Efek Aromaterapi Minyak Atsiri Bunga Cengkeh (*Syzygium aromaticum*) Sebagai Antibakteri terhadap Pertumbuhan *Eschericia coli* dan *Staphylococcus aureus* dengan Metode *Gaseous Contact*

Menerangkan bahwa :

Mahasiswa tersebut diatas benar-benar telah membeli isolat bakteri *Staphylococcus aureus* dan *Eschericia coli* ,

Demikian Surat Keterangan ini kami buat agar dapat dipergunakan sebagaimana mestinya.

Yogyakarta, 3 Agustus 2016
Bagian Mikrobiologi Farmasi
Kepala,


Hady Anshory T. M. Sc., Apt.
NIP.056130703

Lampiran 3. Perhitungan Rendemen

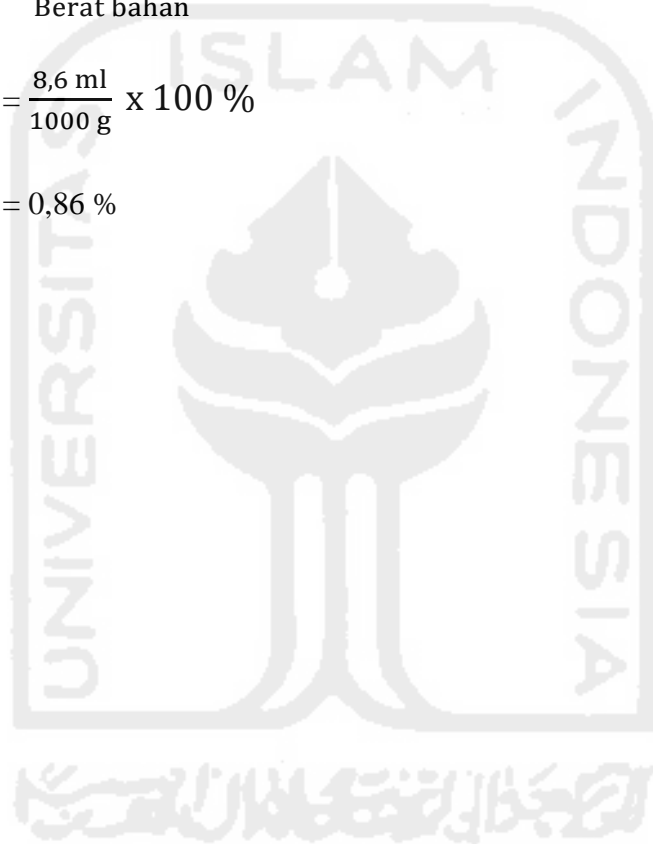
Berat bahan: 1 kg = 1.000 g

Volume minyak atsiri yang dihasilkan: 8,6 mL

$$\text{Rendemen} = \frac{\text{Volume hasil}}{\text{Berat bahan}} \times 100\%$$

$$= \frac{8,6 \text{ ml}}{1000 \text{ g}} \times 100 \%$$

$$= 0,86 \%$$



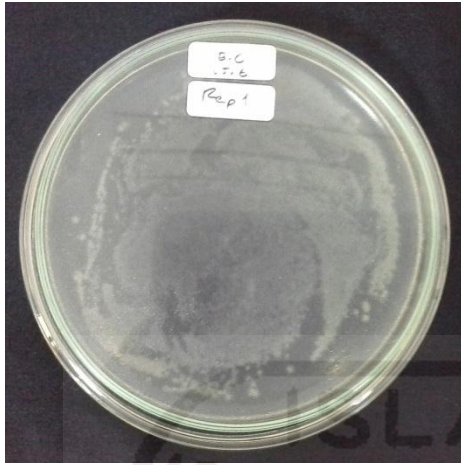
Lampiran 4. Hasil Pengamatan Nilai MID



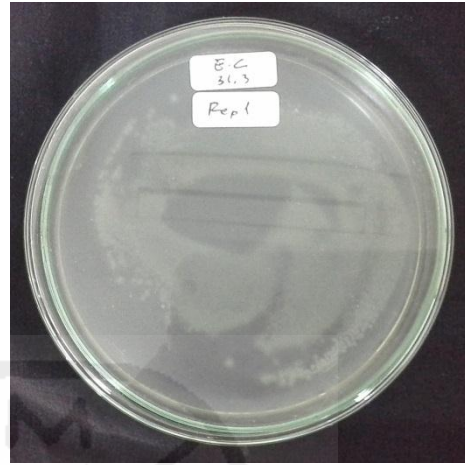
Kontrol *E. coli*



Kontrol *S. aureus*



1,56%



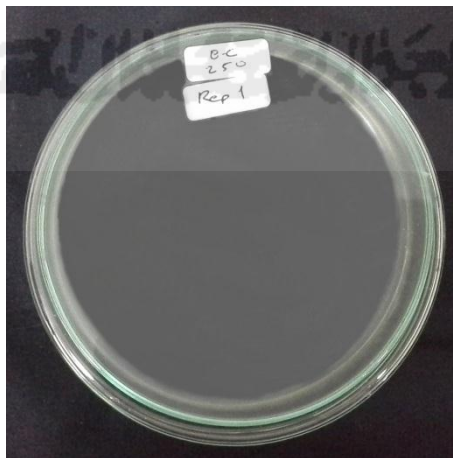
31,3%



6,25%

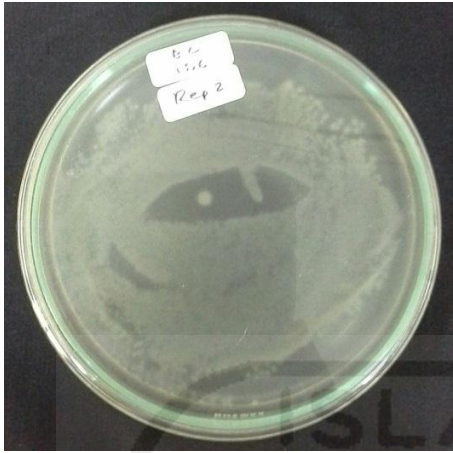


12,5%

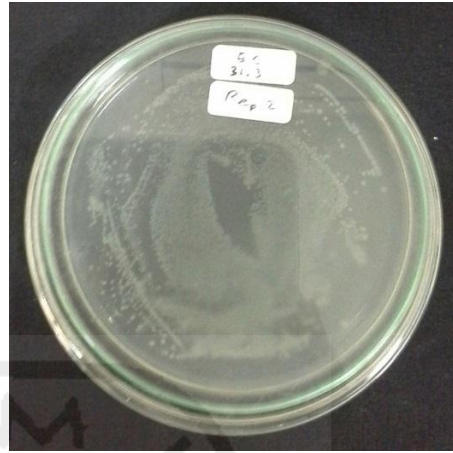


25%

Replikasi 1 *E. coli*



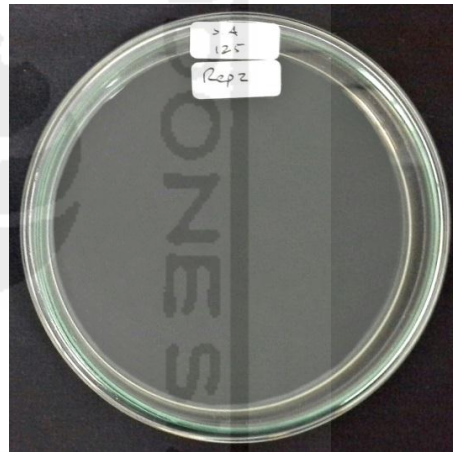
1,56%



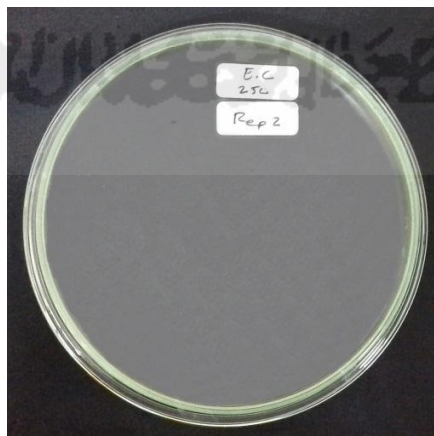
31,3%



6,25%

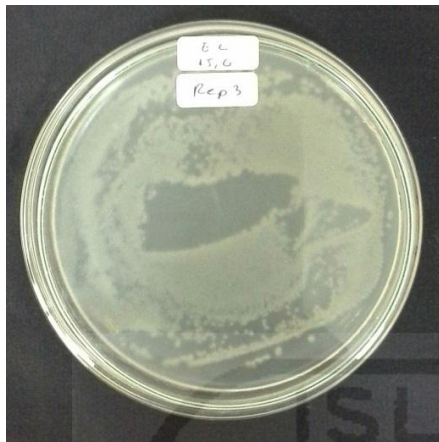


12,5%

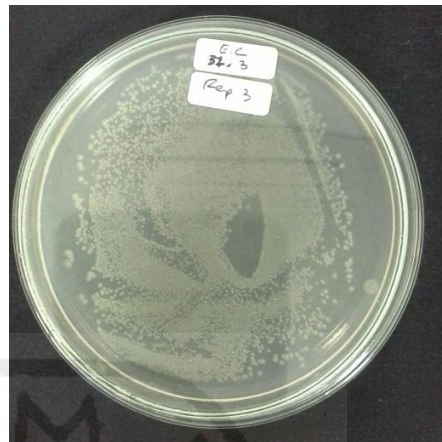


25%

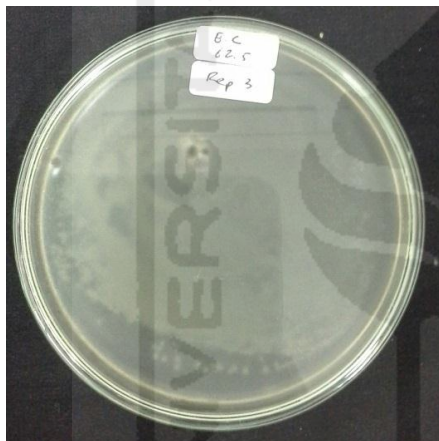
Replikasi 2 *E. coli*



1,56%



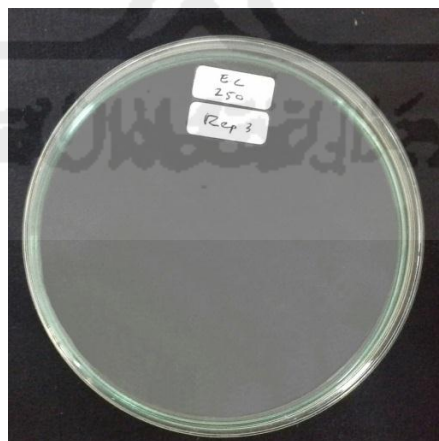
31,3%



6,25%

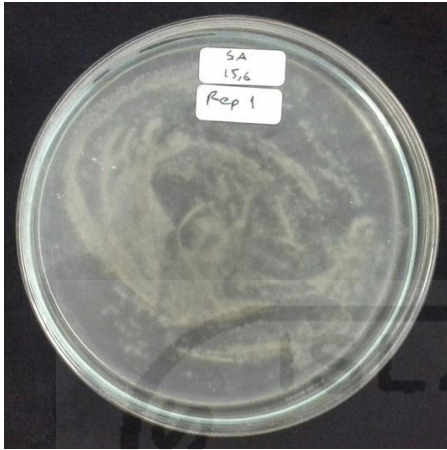


12,5%

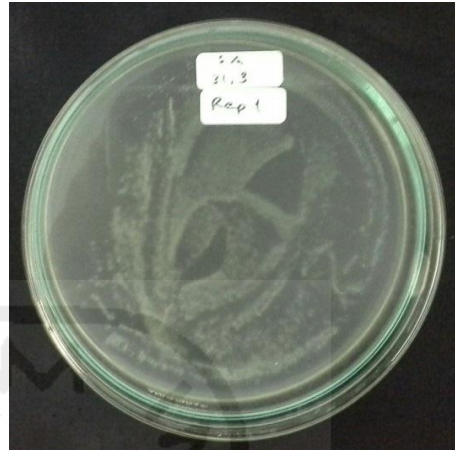


25%

Replikasi 3 *E. coli*



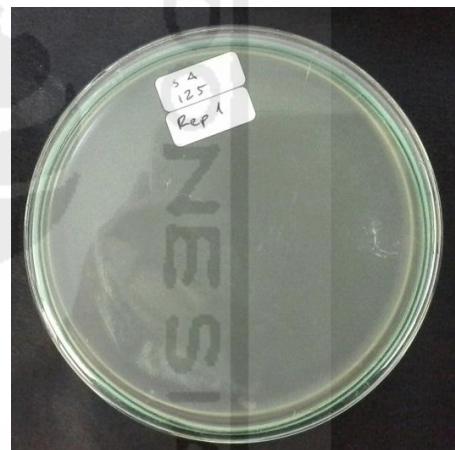
1,56%



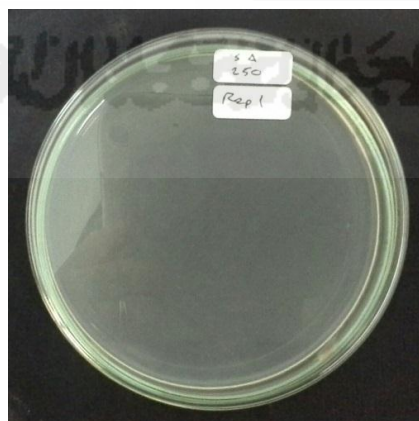
31,3%



6,25%



12,5%

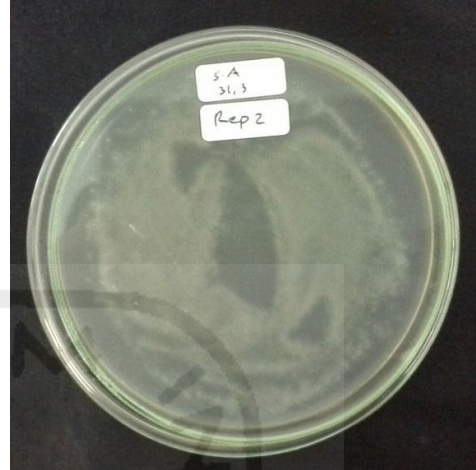


25%

Replikasi 1 *S. aureus*



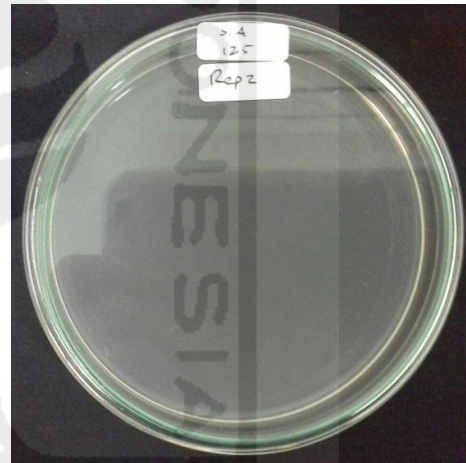
1,56%



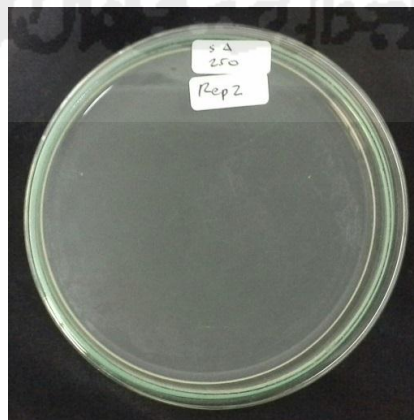
31,3%



6,25%


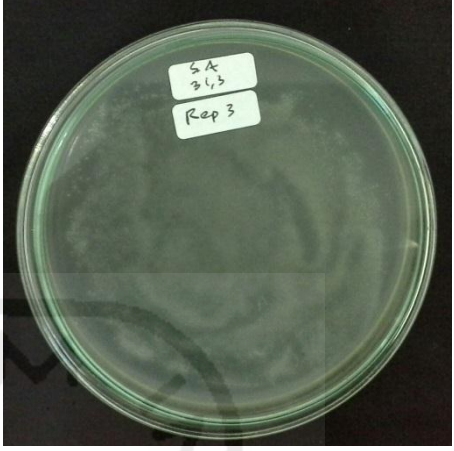

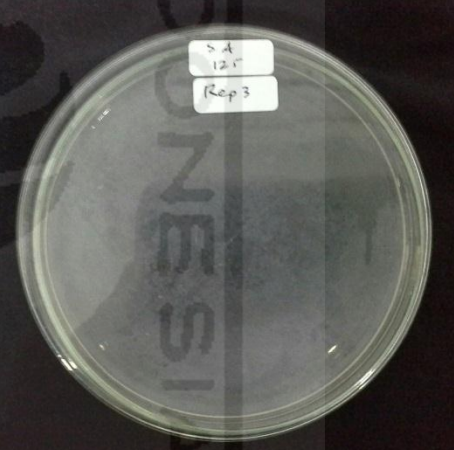
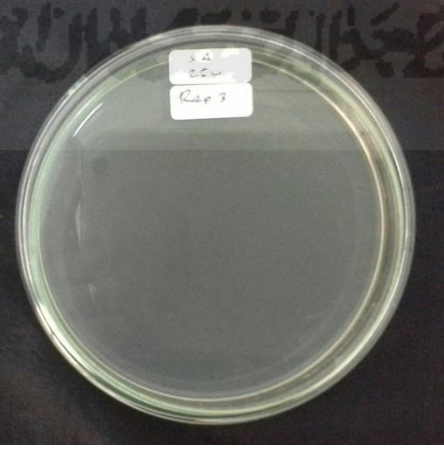


12,5%



25%

Replikasi 2 *S. aureus*

	
1,56%	31,3%
	
6,25%	12,5%
	
<p style="text-align: center;">25% Replikasi 3 <i>S. aureus</i></p>	

Lampiran 5. Hasil Penentuan Nilai MID

$$\begin{aligned} \text{MID pada konsentrasi 25\%} &: \frac{250 \mu\text{L}}{1.000 \mu\text{L}} = \frac{X}{260 \mu\text{L}} \\ X &= \frac{250 \mu\text{L} \times 250 \mu\text{L}}{1.000 \mu\text{L}} \\ &= 65 \mu\text{L} \\ \frac{65 \mu\text{L}}{1,3 \text{ L}} &= \frac{X}{1 \text{ L}} \\ X &= \frac{65 \mu\text{L} \times 1 \text{ L}}{1,3 \text{ L}} \\ &= 50 \mu\text{L/L} \end{aligned}$$

$$\begin{aligned} \text{MID pada konsentrasi 12,5\%} &: \frac{125 \mu\text{L}}{1.000 \mu\text{L}} = \frac{X}{260 \mu\text{L}} \\ X &= \frac{125 \mu\text{L} \times 250 \mu\text{L}}{1.000 \mu\text{L}} \\ &= 32,5 \mu\text{L} \\ \frac{32,5 \mu\text{L}}{1,3 \text{ L}} &= \frac{X}{1 \text{ L}} \\ X &= \frac{32,5 \mu\text{L} \times 1 \text{ L}}{1,3 \text{ L}} \\ &= 25 \mu\text{L/L} \end{aligned}$$

$$\begin{aligned} \text{MID pada konsentrasi 6,25\%} &: \frac{62,5 \mu\text{L}}{1.000 \mu\text{L}} = \frac{X}{260 \mu\text{L}} \\ X &= \frac{62,5 \mu\text{L} \times 250 \mu\text{L}}{1.000 \mu\text{L}} \\ &= 16,25 \mu\text{L} \\ \frac{16,25 \mu\text{L}}{1,3 \text{ L}} &= \frac{X}{1 \text{ L}} \\ X &= \frac{16,25 \mu\text{L} \times 1 \text{ L}}{1,3 \text{ L}} \\ &= 12,5 \mu\text{L/L} \end{aligned}$$

$$\begin{aligned}
 \text{MID pada konsentrasi 3,13\% : } \frac{31,3 \mu\text{L}}{1.000 \mu\text{L}} &= \frac{X}{260 \mu\text{L}} \\
 X &= \frac{31,3 \mu\text{L} \times 250 \mu\text{L}}{1.000 \mu\text{L}} \\
 &= 8,138 \mu\text{L} \\
 \frac{8,138 \mu\text{L}}{1,3 \text{ L}} &= \frac{X}{1 \text{ L}} \\
 X &= \frac{8,138 \mu\text{L} \times 1 \text{ L}}{1,3 \text{ L}} \\
 &= 6,26 \mu\text{L/L}
 \end{aligned}$$

$$\begin{aligned}
 \text{MID pada konsentrasi 1,56\% : } \frac{15,6 \mu\text{L}}{1.000 \mu\text{L}} &= \frac{X}{260 \mu\text{L}} \\
 X &= \frac{15,6 \mu\text{L} \times 250 \mu\text{L}}{1.000 \mu\text{L}} \\
 &= 4,056 \mu\text{L} \\
 \frac{4,056 \mu\text{L}}{1,3 \text{ L}} &= \frac{X}{1 \text{ L}} \\
 X &= \frac{4,056 \mu\text{L} \times 1 \text{ L}}{1,3 \text{ L}} \\
 &= 3,12 \mu\text{L/L}
 \end{aligned}$$

Lampiran 6. Pengujian Efek Antibakteri dengan Menggunakan *Airtight Box*



(a)

(b)



(c)

Keterangan:

- (a) *airtight box* sebelum dilapisi dengan aluminium foil
- (b) *airtight box* setelah dilapisi dengan aluminium foil dan diletakkan kertas saring dan cawan petri di dalamnya
- (c) *airtight box* setelah ditutup dan dilapisi dengan selotip

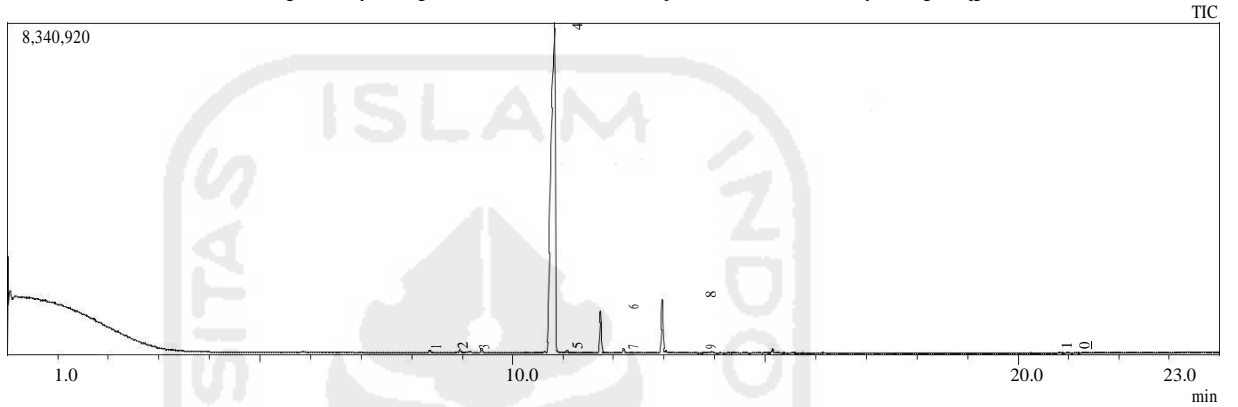
Lampiran 7. Kandungan Senyawa pada Minyak Atsiri Bunga Cengkeh

No.	R.Time	Area (%)	Nama Senyawa
1.	8,356	0,23	methyl salicylate
2.	8,960	0,24	neral
3.	9,383	0,45	geranial
4.	10,830	87,92	eugenol
5.	11,077	0,35	α -copaene
6.	11,738	4,16	caryophyllene
7.	12,198	0,47	α -humulene
8.	12,962	5,50	eugenyl asetat
9.	13,031	0,28	Δ -cadinene
10.	15,143	0,40	trimethoxyacetophenone
Total		100	

Sample Information

Analyzed by : Admin
 Analyzed : 5/30/2016 10:30:34 AM
 Sample Name : Minyak cengkeh
 Sample ID : 1
 Injection Volume : 0.10
 Data File : C:\GCMSsolution\Data\Project2\0293_C_GCMS\Minyak cengkeh.qgd
 Tuning File : C:\GCMSsolution\System\Tune1\Tuning 10052016.qgt

Chromatogram Minyak cengkeh C:\GCMSsolution\Data\Project2\0293_C_GCMS\Minyak cengkeh.qgd



Peak#	R.Time	I.Time	F.Time	Area	Area%	Height
1	8.356	8.317	8.433	126138	0.23	49390
2	8.960	8.917	9.008	131446	0.24	62480
3	9.383	9.233	9.467	245804	0.45	107700
4	10.830	10.667	10.933	47830508	87.92	8267933
5	11.077	10.933	11.125	187840	0.35	68452
6	11.738	11.675	11.808	2263511	4.16	1039732
7	12.198	12.150	12.250	253255	0.47	122814
8	12.962	12.892	13.008	2994045	5.50	1351481
9	13.031	13.008	13.083	154850	0.28	59905
10	15.143	15.092	15.208	216104	0.40	97348
				54403501	100.00	11227235