

Lucknow

Dr. Saudan Singh Essential oil samples

**1. Tulsi oil**

Linalool	11.6%
Methyl chavicol	66.2%

**2. African Marigold oil**

Limonene	6.4%
(z)- $\beta$ -ocimene	26.4%
Dihydrotagetone	36.7%

**3. Lemongrass oil**

Neral	32.4%
Geranial	41.7%

**4. Palmarosa oil**

Geraniol	64.7%
Geranyl acetate	14.3%

**5. Geranium oil**

*result enclosed separately*

Linalool	4.5%
Citronellol	37.1%

**6. Lippia oil**

Linalool	57.6%
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**7. Citronella oil**

Citronellal	25.1%
Citronellol	14.6%
Geraniol	15.6%
Elemol	13.4%

**8. Mentha oil**

Limonene	4.7%
Menthone	6.0%
Isomenthone	3.5%
Menthyl acetate	11.9%
Neo-menthol	2.0%
Menthol	62.9%

*Ajay Yadav*

CIF  
Chemical Sciences

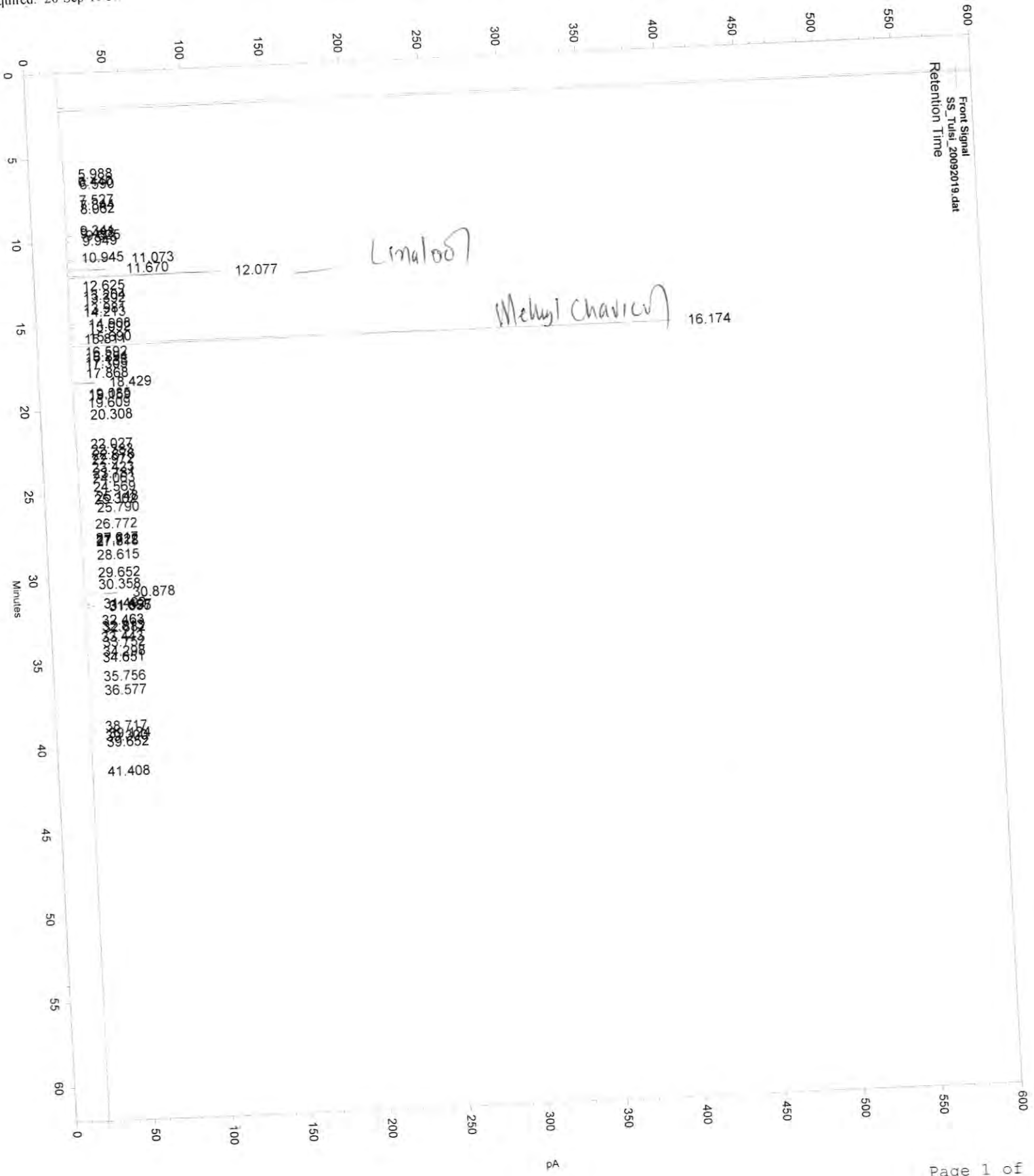
Table 1: Identified constituents in Geranium (Dr. Saudan Singh)

Constituents	FID %
Linalool	4.2%
<i>cis</i> -Rose Oxide	2.2%
<i>trans</i> -Rose Oxide	1.0%
Isomenthone	7.2%
Citronellol	38.0%
Neral	0.5%
Geraniol	7.1%
Geranial	0.9%
Citronellyl formate	7.3%
Geranyl formate	1.2%
10- <i>epi</i> - $\gamma$ -Eudesmol	3.6%
Geranyl tiglate	1.0%
<b>Total</b>	<b>74.2</b>

CIF  
 Chemical Sciences

CENTRAL LABORATORY, CIMAP

SYSTEM: GC (Offline)  
Data File: D:\CIF\_2019\September 2019\20092019002.rst\SS\_Tulsi\_20092019.dat  
Acquired: 20-Sep-19 3:37:42 PM (GMT +05:30)  
Method: D:\Method\ELITE 5\_21082019.met  
Printed: 22-Sep-19 11:11:45 AM (GMT +05:30)  
pA



Chromatogram: SS\_Tulsi

Peak Results:

Front Signal Results

Peak Number	Retention Time	Area	Area Percent	Description
1	5.988	6599	0.036	
2	6.440	4165	0.023	
3	6.590	20621	0.112	
4	7.527	5631	0.031	
5	7.844	12468	0.068	
6	8.062	14149	0.077	
7	9.341	2032	0.011	
8	9.498	4141	0.022	
9	9.625	80660	0.438	
10	9.949	34470	0.187	
11	10.945	6182	0.034	
12	11.073	708169	3.841	
13	11.670	638374	3.463	
14	12.077	2139073	11.603	
15	12.625	4196	0.023	
16	13.204	7492	0.041	
17	13.392	5929	0.032	
18	13.981	10443	0.057	
19	14.213	4372	0.024	
20	14.908	81671	0.443	
21	15.092	80010	0.434	
22	15.690	89648	0.486	
23	15.811	10256	0.056	
24	16.174	12211764	66.241	
25	16.592	12160	0.066	
26	16.894	14769	0.080	
27	17.133	11002	0.060	
28	17.305	5699	0.031	
29	17.868	14846	0.081	
30	18.429	408968	2.218	
31	19.085	25792	0.140	
32	19.159	37278	0.202	
33	19.609	8293	0.045	
34	20.308	35458	0.192	
35	22.027	3517	0.019	
36	22.383	7169	0.039	
37	22.676	26975	0.146	
38	22.972	3703	0.020	
39	23.423	3437	0.019	
40	23.781	27662	0.150	
41	24.063	4307	0.023	
42	24.569	6161	0.033	
43	25.148	71362	0.387	
44	25.302	13181	0.071	
45	25.790	49215	0.267	
46	26.772	4901	0.027	
47	27.617	4231	0.023	
48	27.722	8243	0.045	
49	27.818	4128	0.022	
50	28.615	6201	0.034	
51	29.652	7388	0.040	
52	30.358	6077	0.033	
53	30.878	671961	3.645	
54	31.492	79174	0.429	
55	31.597	183070	0.993	
56	31.655	152249	0.826	
57	32.463	41259	0.224	
58	32.813	23261	0.126	
59	32.882	54904	0.298	
60	33.443	7033	0.038	
61	33.752	34093	0.185	
62	34.298	22578	0.122	
63	34.651	14996	0.081	
64	35.756	7552	0.041	
65	36.577	15606	0.085	
66	38.717	4585	0.025	

Chromatogram: SS\_Tulsi

67	39.124	71490	0.388
68	39.300	5365	0.029
69	39.652	20094	0.109
70	41.408	11388	0.062

Totals		18435296	100.000
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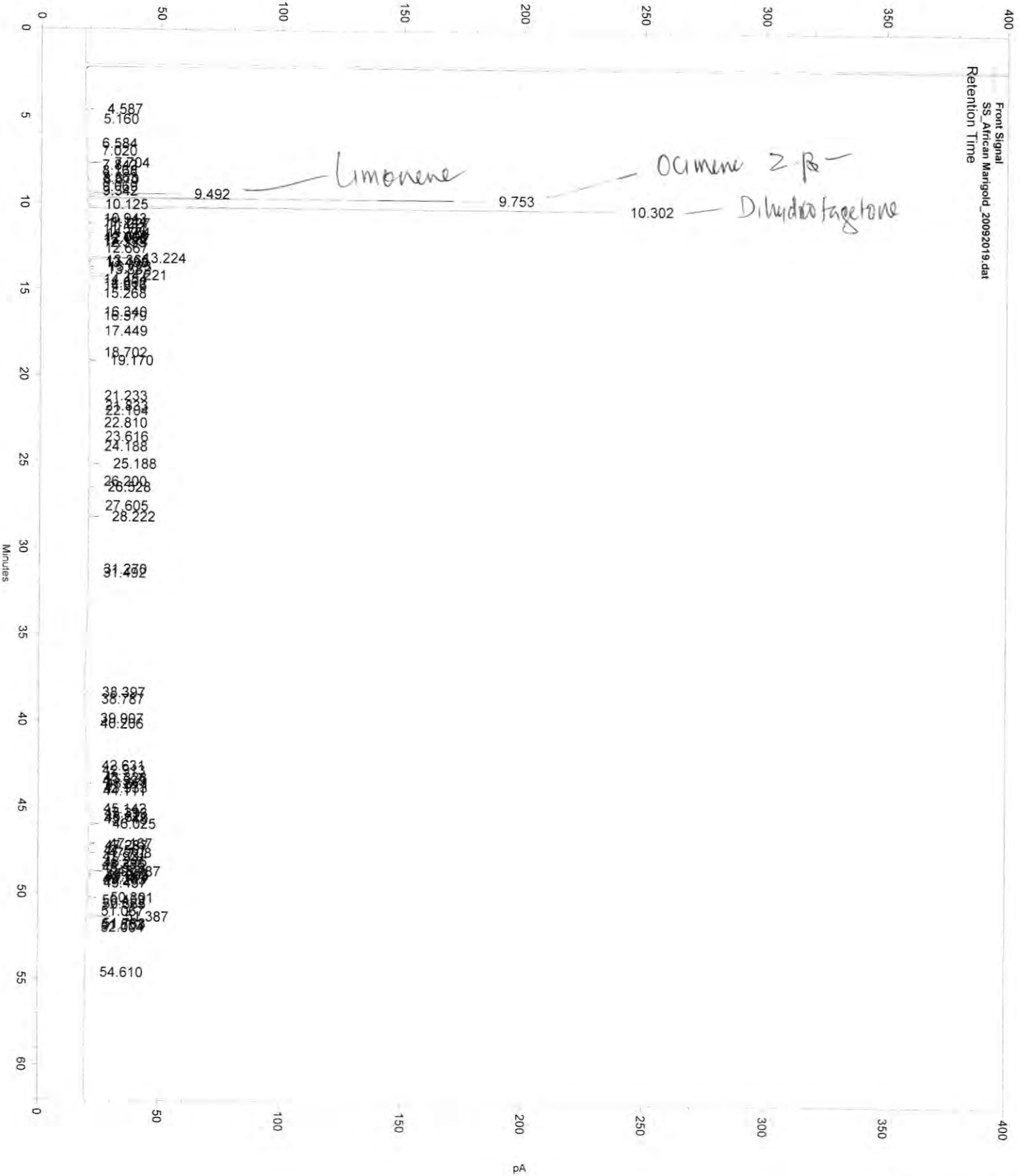
CENTRAL LABORATORY, CIMAP

SYSTEM: GC (Offline)

Method: D:\Method\ELITE 5\_21082019.met

Data File: D:\CIF\_2019\September 2019\20092019002.rsl\SS\_African Marigold\_20092019.dat

Printed: 22-Sep-19 11:00:03 AM (GMT +05:30)  
pA



Chromatogram: SS\_African Marigold

Peak Results:

Front Signal Results

Peak Number	Retention Time	Area	Area Percent	Description
1	4.587	48297	0.383	
2	5.160	22981	0.182	
3	6.584	8777	0.070	
4	7.020	5213	0.041	
5	7.704	102611	0.815	
6	7.842	5552	0.044	
7	8.168	4378	0.035	
8	8.563	5741	0.046	
9	8.670	18234	0.145	
10	9.069	2570	0.020	
11	9.342	4467	0.035	
12	9.492	813863	6.462	
13	9.753	3325815	26.408	
14	10.125	24764	0.197	
15	10.302	4633934	36.795	
16	10.943	12524	0.099	
17	11.144	12178	0.097	
18	11.227	42764	0.340	
19	11.554	4267	0.034	
20	11.764	44905	0.357	
21	12.006	23602	0.187	
22	12.068	8757	0.070	
23	12.155	4774	0.038	
24	12.333	2764	0.022	
25	12.667	27437	0.218	
26	13.224	379081	3.010	
27	13.365	33742	0.268	
28	13.488	24149	0.192	
29	13.723	62759	0.498	
30	13.882	44881	0.356	
31	14.221	494622	3.927	
32	14.454	14108	0.112	
33	14.662	8151	0.065	
34	14.816	16002	0.127	
35	15.268	4409	0.035	
36	16.340	14376	0.114	
37	16.579	4346	0.035	
38	17.449	14141	0.112	
39	18.702	9593	0.076	
40	19.170	80271	0.637	
41	21.233	6027	0.048	
42	21.833	17594	0.140	
43	22.104	33565	0.267	
44	22.810	7038	0.056	
45	23.616	19414	0.154	
46	24.188	10223	0.081	
47	25.188	117815	0.935	
48	26.200	3933	0.031	
49	26.528	52164	0.414	
50	27.605	24912	0.198	
51	28.222	109217	0.867	
52	31.270	19664	0.156	
53	31.492	16163	0.128	
54	38.397	32144	0.255	
55	38.787	21680	0.172	
56	39.907	6532	0.052	
57	40.206	9553	0.076	
58	42.631	3407	0.027	
59	42.913	6107	0.048	
60	43.328	41476	0.329	
61	43.523	11893	0.094	
62	43.671	48059	0.382	
63	43.933	41076	0.326	
64	44.111	7023	0.056	
65	45.142	4870	0.039	
66	45.393	18101	0.144	

Chromatogram: SS\_African Marigold

67	45.623	73487	0.584
68	45.748	26297	0.209
69	46.025	229704	1.824
70	47.167	80282	0.637
71	47.287	29587	0.235
72	47.567	17930	0.142
73	47.708	90536	0.719
74	47.931	4954	0.039
75	48.226	23309	0.185
76	48.386	2877	0.023
77	48.573	3785	0.030
78	48.787	194975	1.548
79	48.953	54353	0.432
80	49.058	49128	0.390
81	49.157	29460	0.234
82	49.263	24073	0.191
83	49.457	40520	0.322
84	50.301	136183	1.081
85	50.453	16559	0.131
86	50.665	20073	0.159
87	51.067	2611	0.021
88	51.387	296111	2.351
89	51.788	23092	0.183
90	51.863	6331	0.050
91	52.004	5943	0.047
92	54.610	6285	0.050

Totals		12593895	100.000
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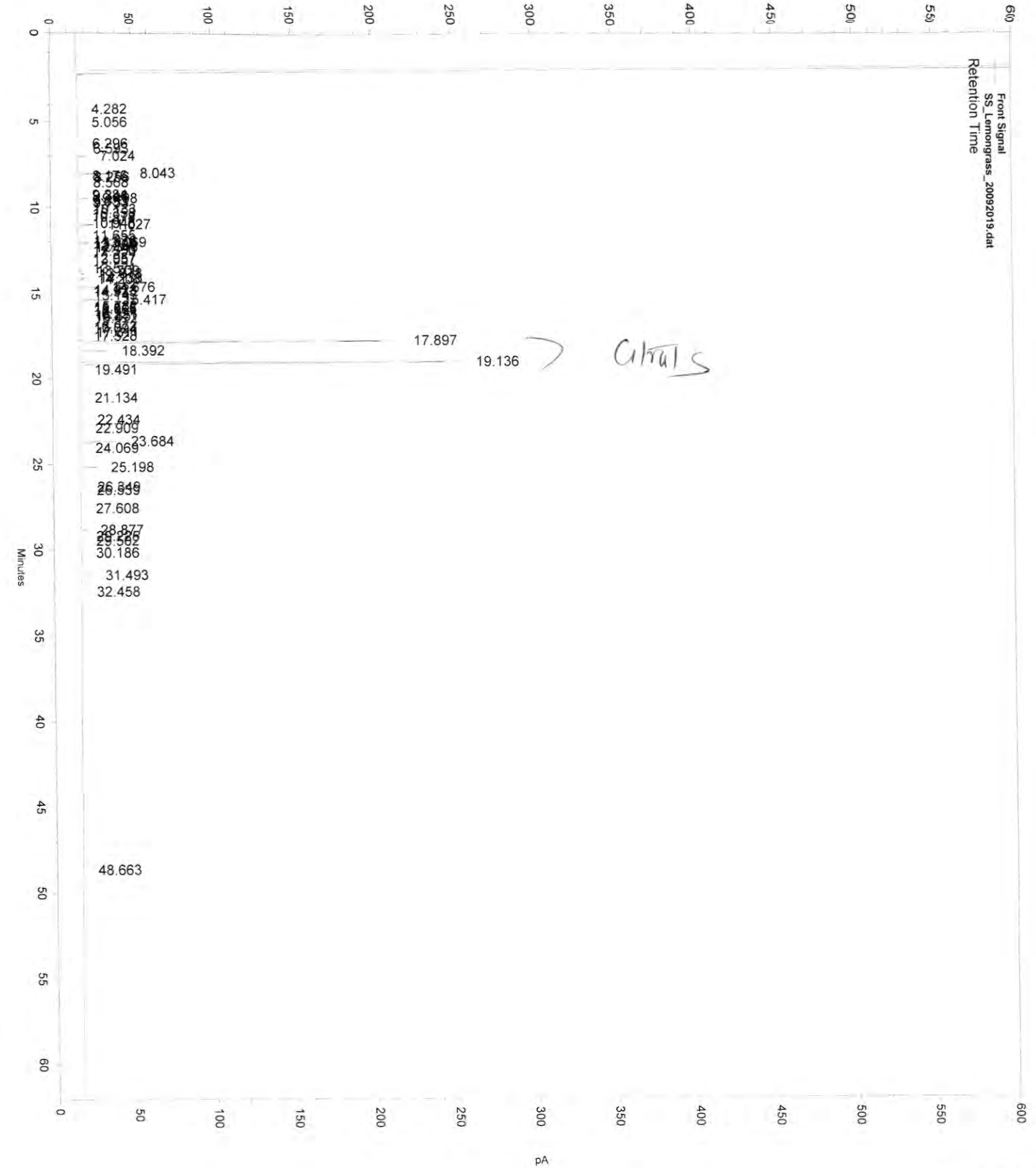
CENTRAL LABORATORY, CIMAP

SYSTEM: GC (Offline)

Method:D:\Method\ELITE 5\_21082019.met

Data File: D:\CIF\_2019\September 2019\20092019002.rslt\SS\_Lemongrass\_20092019.dat

Printed:22-Sep-19 11:08:35 AM (GMT +05:30)  
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Chromatogram: SS\_Lemongrass

Peak Results:

Front Signal Results

Peak Number	Retention Time	Area	Area Percent	Description
1	4.282	3115	0.018	
2	5.056	2863	0.016	
3	6.296	11282	0.064	
4	6.593	18894	0.107	
5	7.024	96783	0.547	
6	8.043	584843	3.306	
7	8.176	8761	0.050	
8	8.256	33898	0.192	
9	8.568	13630	0.077	
10	9.284	4892	0.028	
11	9.348	14240	0.080	
12	9.498	137547	0.777	
13	9.653	2803	0.016	
14	9.753	18958	0.107	
15	10.133	14933	0.084	
16	10.358	10192	0.058	
17	10.578	2447	0.014	
18	10.948	7649	0.043	
19	11.027	215098	1.216	
20	11.655	11523	0.065	
21	11.978	16360	0.092	
22	12.069	153637	0.868	
23	12.149	21089	0.119	
24	12.254	4478	0.025	
25	12.346	34300	0.194	
26	12.550	2408	0.014	
27	12.957	3590	0.020	
28	13.057	5217	0.029	
29	13.571	5877	0.033	
30	13.709	60970	0.345	
31	13.878	93337	0.528	
32	14.133	98409	0.556	
33	14.208	69711	0.394	
34	14.676	282488	1.597	
35	14.828	18878	0.107	
36	14.933	5862	0.033	
37	15.143	12514	0.071	
38	15.417	492624	2.784	
39	15.782	16765	0.095	
40	15.876	5170	0.029	
41	15.965	14207	0.080	
42	16.221	8579	0.048	
43	16.351	34325	0.194	
44	16.472	20383	0.115	
45	16.972	11173	0.063	
46	17.094	8509	0.048	
47	17.311	47784	0.270	
48	17.528	10557	0.060	
49	17.897	5733756	32.408	
50	18.392	455552	2.575	
51	19.136	7380197	41.714	
52	19.491	8982	0.051	
53	21.134	9978	0.056	
54	22.434	57737	0.326	
55	22.909	9637	0.054	
56	23.684	562956	3.182	
57	24.069	9091	0.051	
58	25.198	277192	1.567	
59	26.349	41018	0.232	
60	26.539	30455	0.172	
61	27.608	8335	0.047	
62	28.877	93939	0.531	
63	29.225	15148	0.086	
64	29.502	16225	0.092	
65	30.186	4489	0.025	
66	31.493	182017	1.029	

Chromatogram: SS\_Lemongrass

67	32.458	15053	0.085
68	48.663	6891	0.039

Totals		17692200	100.000	
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CENTRAL LABORATORY, CIMAP

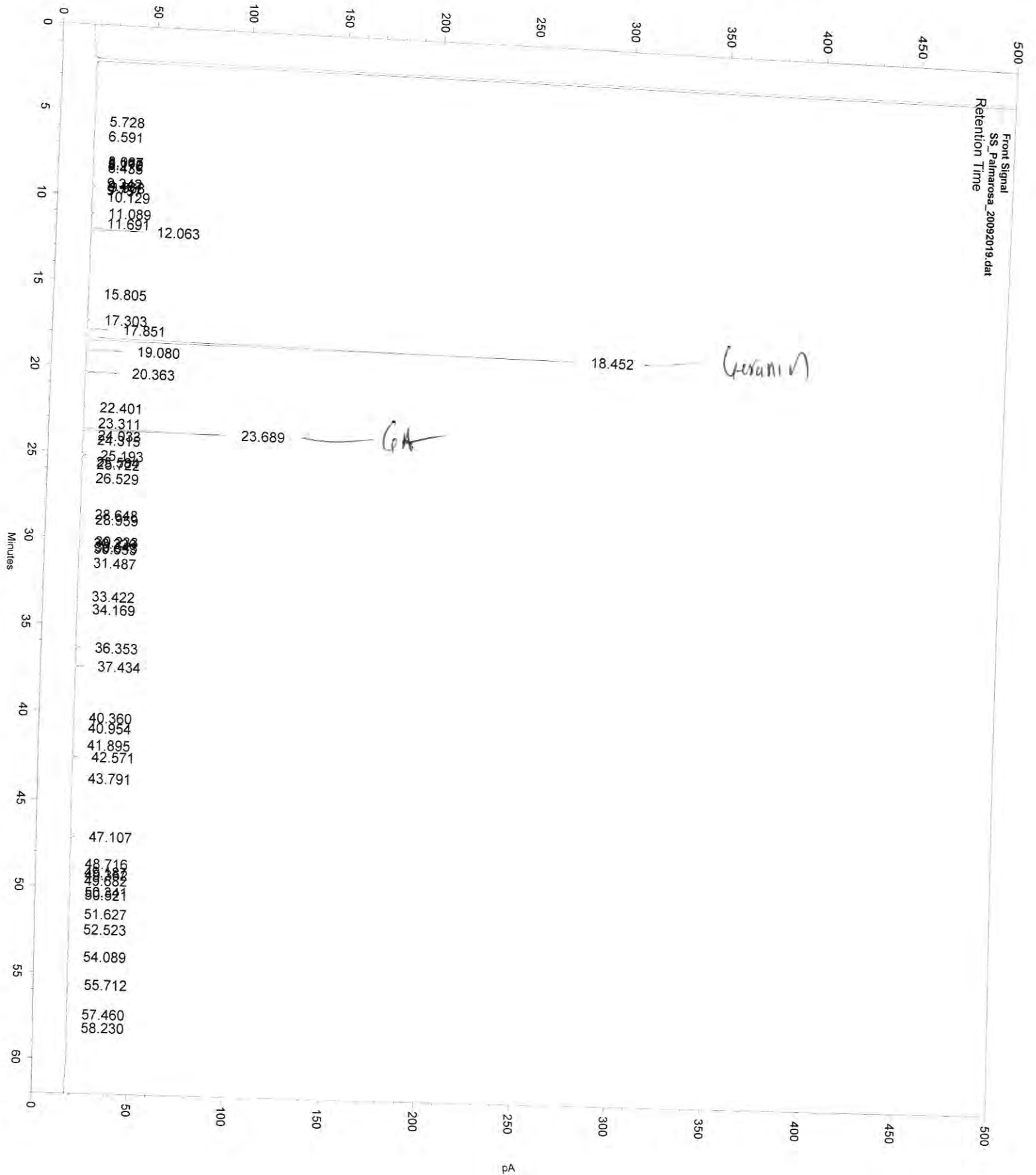
SYSTEM: GC (Offline)

Data File: D:\CIF\_2019\September 2019\20092019002.rslt\SS\_Palmarosa\_20092019.dat

Method: D:\Method\ELITE 5\_21082019.met

Acquired: 20-Sep-19 1:26:30 PM (GMT +05:30)

Printed: 22-Sep-19 11:10:13 AM (GMT +05:30)



Chromatogram: SS\_Palmarosa

Peak Results:

Front Signal Results

Peak Number	Retention Time	Area	Area Percent	Description
1	5.728	5476	0.041	
2	6.591	3829	0.029	
3	8.067	8593	0.065	
4	8.179	12065	0.091	
5	8.270	4431	0.033	
6	8.435	12048	0.091	
7	9.342	2692	0.020	
8	9.497	13959	0.105	
9	9.568	40904	0.308	
10	9.757	4424	0.033	
11	10.129	8848	0.067	
12	11.089	29075	0.219	
13	11.691	17892	0.135	
14	12.063	613285	4.624	
15	15.805	9455	0.071	
16	17.303	39728	0.300	
17	17.851	283645	2.139	
18	18.452	8583151	64.715	
19	19.080	474147	3.575	
20	20.363	422819	3.188	
21	22.401	24939	0.188	
22	23.311	6613	0.050	
23	23.689	1905316	14.366	
24	24.033	17197	0.130	
25	24.315	5687	0.043	
26	25.193	59292	0.447	
27	25.584	3431	0.026	
28	25.722	13216	0.100	
29	26.529	3733	0.028	
30	28.648	4208	0.032	
31	28.959	16836	0.127	
32	30.233	35382	0.267	
33	30.336	4641	0.035	
34	30.543	21904	0.165	
35	30.653	11725	0.088	
36	31.487	8908	0.067	
37	33.422	4254	0.032	
38	34.169	16610	0.125	
39	36.353	66909	0.504	
40	37.434	111988	0.844	
41	40.360	10613	0.080	
42	40.954	5767	0.043	
43	41.895	3525	0.027	
44	42.571	70003	0.528	
45	43.791	25882	0.195	
46	47.107	55920	0.422	
47	48.716	10409	0.078	
48	49.187	3448	0.026	
49	49.352	15713	0.118	
50	49.682	5827	0.044	
51	50.341	13999	0.106	
52	50.521	18182	0.137	
53	51.627	11627	0.088	
54	52.523	4406	0.033	
55	54.089	19377	0.146	
56	55.712	36350	0.274	
57	57.460	11629	0.088	
58	58.230	7027	0.053	

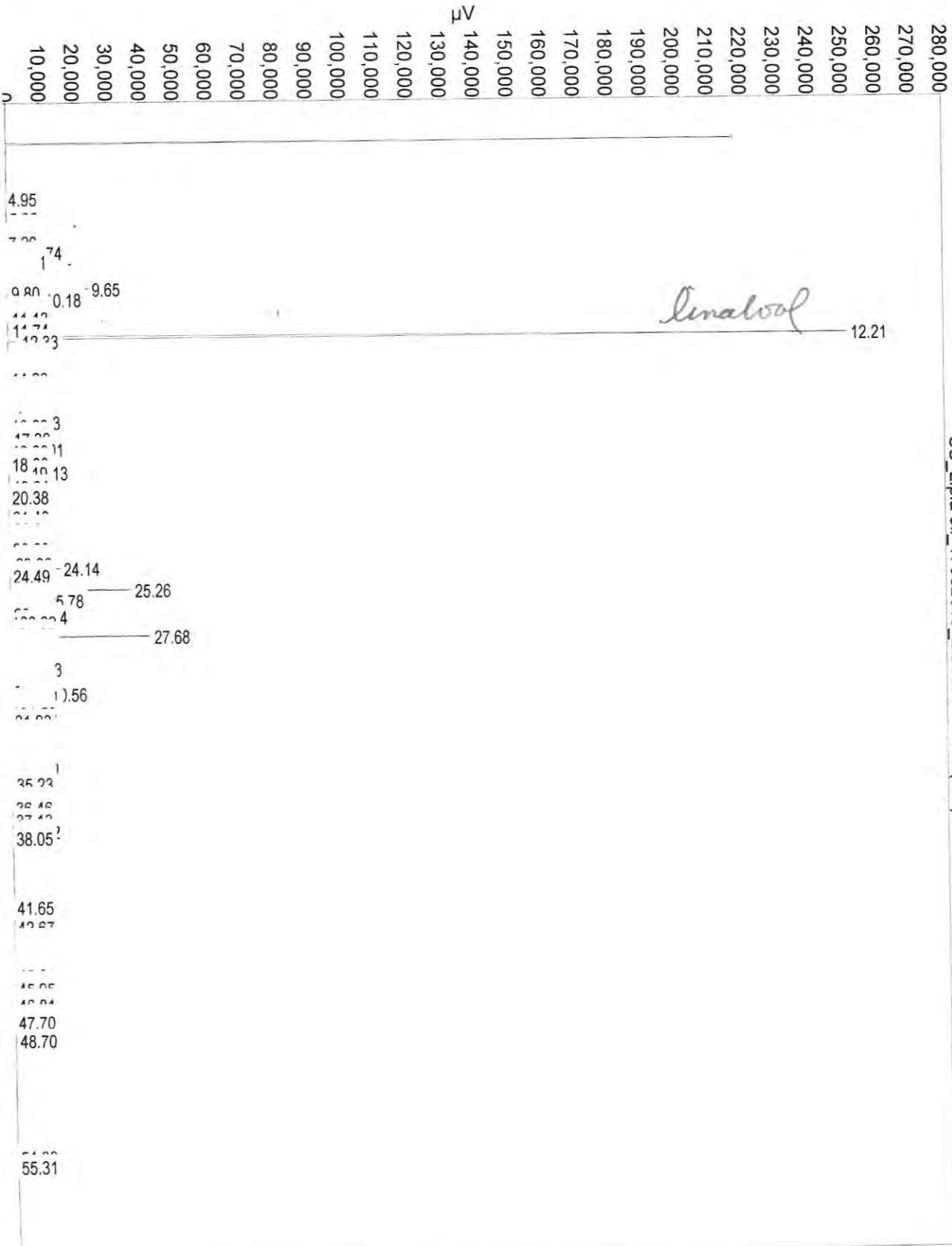
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Chromatogram: SS\_Lipia oil\_17082019\_2\_

CENTRAL LABORATORY, CIMAP

System : CP3800  
Method : ELITE 5\_June 11 2019  
SEQUENCE: August 2019

Acquired : 8/17/2019 11:17:04 AM  
Processed : 9/23/2019 9:01:38 AM  
Printed : 9/23/2019 9:02:23 AM



SS\_Lipia oil\_17082019\_2.DAT - Front (FID)

System : CP3800  
Method : ELITE 5\_June 11 2019  
SEQUENCE: August 2019

Acquired : 8/17/2019 11:17:04 AM  
Processed : 9/23/2019 9:01:38 AM  
Printed : 9/23/2019 9:02:23 AM

Index	Time [Min]	Area [ $\mu$ V.Min]	Area % [%]	Retention index
136	34.75	4.2	0.013	1673.48
137	35.02	1.7	0.005	1680.95
138	35.23	21.3	0.065	1686.79
139	36.01	8.2	0.025	1709.09
140	36.09	3.3	0.010	1711.58
141	36.33	9.1	0.028	1718.48
142	36.46	4.6	0.014	1722.29
143	37.13	5.0	0.015	1741.79
144	37.72	136.6	0.418	1759.19
145	37.96	7.5	0.023	1766.28
146	38.05	10.6	0.032	1768.77
147	41.65	5.1	0.016	1878.15
148	42.67	6.3	0.019	1910.02
149	43.35	6.1	0.019	1931.89
150	43.55	10.8	0.033	1938.32
151	43.87	12.4	0.038	1948.45
152	43.96	5.8	0.018	1951.34
153	44.02	11.9	0.036	1953.22
154	44.10	8.6	0.026	1956.00
155	44.32	3.9	0.012	1962.97
156	44.54	11.0	0.034	1969.99
157	44.83	5.3	0.016	1979.42
158	45.03	2.9	0.009	1985.69
159	45.21	6.6	0.020	1991.75
160	45.61	4.7	0.014	2004.60
161	45.95	3.1	0.010	2015.99
162	46.55	1.4	0.004	2036.31
163	46.81	5.2	0.016	2045.01
164	47.40	2.5	0.008	2065.10
165	47.70	1.8	0.006	2075.20
166	48.70	21.9	0.067	2109.09
167	54.80	1.9	0.006	2329.02
168	55.31	6.7	0.020	2348.42
Total		32648.7	100.000	

System : CP3800  
 Method : ELITE 5\_June 11 2019  
 SEQUENCE: August 2019

Acquired : 8/17/2019 11:17:04 AM  
 Processed : 9/23/2019 9:01:38 AM  
 Printed : 9/23/2019 9:02:23 AM

## Peak results :

Index	Time [Min]	Area [ $\mu$ V Min]	Area % [%]	Retention Index
1	4.69	3.7	0.011	844.74
2	4.72	3.9	0.012	846.52
3	4.95	2.7	0.008	858.56
4	5.98	16.1	0.049	909.03
5	6.40	9.0	0.028	923.66
6	6.62	53.2	0.163	931.29
7	6.82	2.5	0.008	938.29
8	7.02	10.3	0.032	945.45
9	7.20	3.0	0.009	951.69
10	7.74	299.8	0.918	970.63
11	7.81	20.1	0.061	973.02
12	7.88	40.2	0.123	975.35
13	8.08	63.3	0.194	982.34
14	8.21	112.2	0.344	987.06
15	8.28	0.7	0.002	989.57
16	8.54	10.4	0.032	998.48
17	8.72	19.1	0.059	1003.89
18	8.91	1.8	0.005	1008.93
19	9.02	17.3	0.053	1012.18
20	9.12	13.0	0.040	1014.88
21	9.30	4.9	0.015	1019.83
22	9.39	25.6	0.078	1022.25
23	9.54	95.5	0.292	1026.47
24	9.65	1140.2	3.492	1029.44
25	9.80	35.4	0.108	1033.52
26	10.18	455.8	1.396	1043.96
27	10.62	19.3	0.059	1056.09
28	10.71	0.3	0.001	1058.61
29	10.94	11.1	0.034	1064.84
30	11.13	21.8	0.067	1070.05
31	11.74	34.4	0.105	1086.86
32	12.21	18818.1	57.638	1099.82
33	12.33	156.9	0.481	1102.67
34	13.02	26.6	0.081	1119.63
35	13.36	40.5	0.124	1128.11
36	13.46	1.1	0.003	1130.53
37	13.80	54.1	0.166	1138.97
38	14.01	8.9	0.027	1144.12
39	14.05	9.3	0.029	1145.14
40	14.13	18.1	0.056	1147.04
41	14.26	12.3	0.038	1150.45
42	14.75	18.1	0.055	1162.43
43	14.87	67.7	0.207	1165.47
44	14.97	2.7	0.008	1167.78
45	15.10	5.9	0.018	1171.15
46	15.32	18.4	0.056	1176.46
47	15.41	4.7	0.014	1178.64
48	15.47	7.8	0.024	1180.33
49	15.53	0.3	0.001	1181.73
50	15.72	5.6	0.017	1186.38
51	15.85	88.6	0.271	1189.63
52	16.13	10.1	0.031	1196.58
53	16.21	75.0	0.230	1198.44
54	16.53	196.0	0.600	1206.16
55	16.68	3.1	0.009	1209.94
56	17.14	11.2	0.034	1221.10
57	17.36	39.9	0.122	1226.21
58	17.91	253.9	0.778	1239.49
59	18.00	1.4	0.004	1241.87
60	18.45	39.8	0.122	1252.58
61	18.66	2.8	0.008	1257.69
62	19.13	318.9	0.977	1269.04
63	19.84	10.3	0.032	1286.15



Chromatogram: SS\_Lipia oil\_17082019\_2

CENTRAL LABORATORY, CIMAP

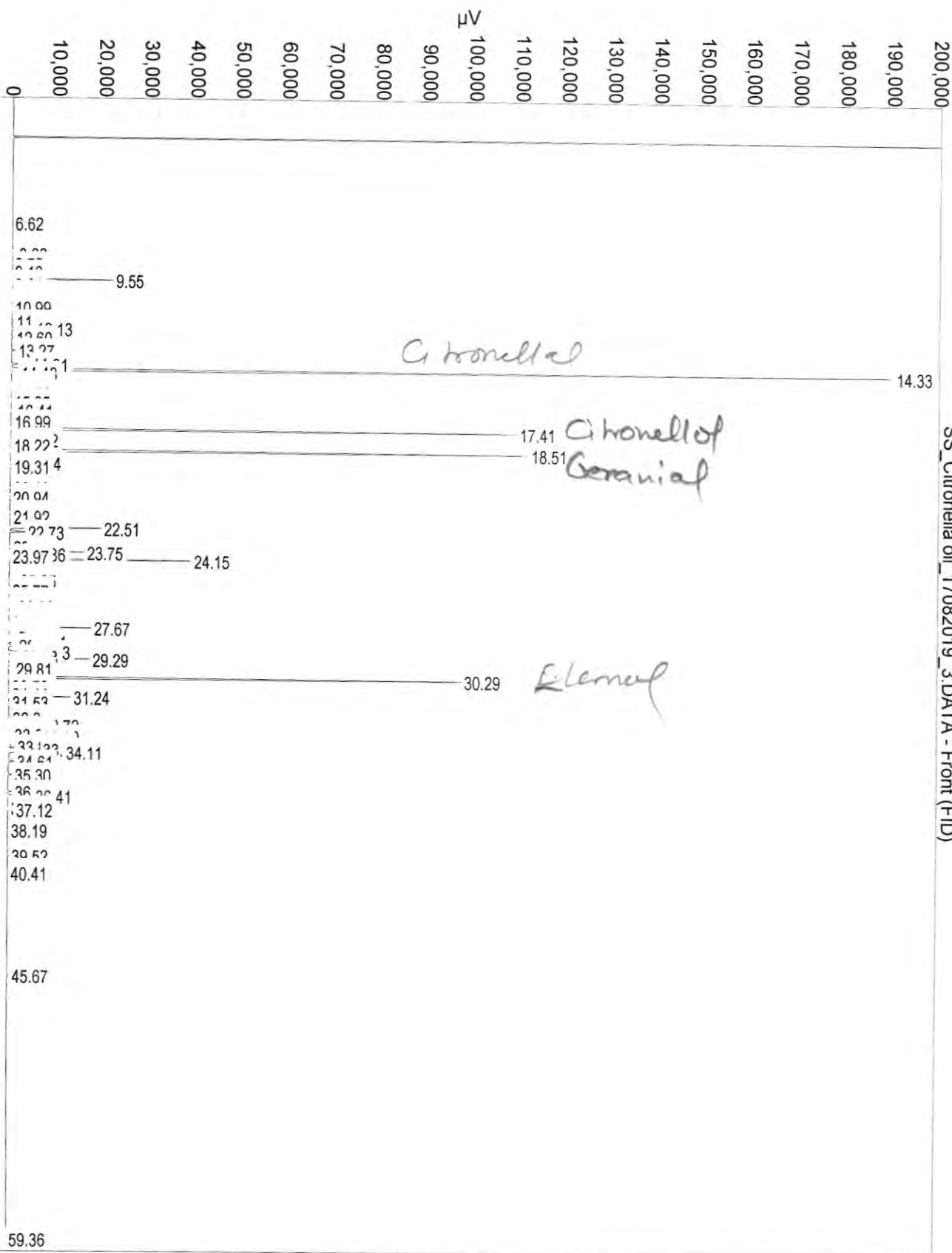
System : CP3800  
 Method : ELITE 5\_June 11 2019  
 SEQUENCE: August 2019

Acquired : 8/17/2019 11:17:04 AM  
 Processed : 9/23/2019 9:01:38 AM  
 Printed : 9/23/2019 9:02:23 AM

Index	Time [Min]	Area [µV.Min]	Area % [%]	Retention Index
64	20.27	4.1	0.013	1296.62
65	20.38	3.2	0.010	1299.24
66	21.43	5.6	0.017	1325.00
67	21.91	40.4	0.124	1336.99
68	22.04	5.2	0.016	1340.23
69	22.41	12.8	0.039	1349.22
70	22.72	12.4	0.038	1356.90
71	22.96	26.6	0.081	1362.89
72	23.06	0.5	0.002	1365.27
73	23.09	0.8	0.003	1365.93
74	23.49	126.2	0.386	1375.94
75	23.66	11.0	0.034	1379.97
76	23.74	49.9	0.153	1382.06
77	23.86	51.3	0.157	1384.89
78	24.14	977.7	2.995	1391.79
79	24.34	9.2	0.028	1396.72
80	24.49	6.9	0.021	1400.43
81	25.26	2172.2	6.653	1420.24
82	25.47	23.7	0.073	1425.43
83	25.63	78.7	0.241	1429.63
84	25.78	588.0	1.801	1433.33
85	25.91	3.0	0.009	1436.69
86	26.23	13.1	0.040	1444.94
87	26.40	7.8	0.024	1449.28
88	26.47	6.4	0.020	1450.94
89	26.64	507.6	1.555	1455.23
90	26.89	126.3	0.387	1461.65
91	27.37	3.6	0.011	1473.89
92	27.49	82.8	0.254	1477.00
93	27.68	2556.3	7.830	1481.80
94	27.87	18.0	0.055	1486.65
95	28.09	17.8	0.055	1492.22
96	28.19	33.3	0.102	1494.86
97	28.28	86.7	0.266	1497.15
98	28.40	70.1	0.215	1500.36
99	28.61	9.0	0.027	1505.84
100	28.68	22.8	0.070	1507.62
101	28.84	13.5	0.041	1511.90
102	28.97	60.6	0.186	1515.51
103	29.06	0.4	0.001	1517.91
104	29.09	1.2	0.004	1518.63
105	29.28	191.0	0.585	1523.75
106	29.43	1.0	0.003	1527.76
107	29.61	5.3	0.016	1532.58
108	29.73	3.3	0.010	1535.83
109	29.82	44.0	0.135	1538.19
110	29.98	8.2	0.025	1542.42
111	30.23	15.7	0.048	1549.20
112	30.40	13.7	0.042	1553.83
113	30.56	671.9	2.058	1558.11
114	30.71	142.9	0.438	1562.12
115	30.87	0.4	0.001	1566.27
116	31.23	15.0	0.046	1575.89
117	31.32	11.4	0.035	1578.25
118	31.45	11.7	0.036	1581.91
119	31.53	107.0	0.328	1584.05
120	31.93	4.3	0.013	1594.74
121	32.50	8.7	0.027	1610.32
122	32.56	17.0	0.052	1612.09
123	32.69	11.4	0.035	1615.73
124	32.79	6.8	0.021	1618.53
125	32.89	6.7	0.020	1621.29
126	33.18	12.7	0.039	1629.32
127	33.47	10.5	0.032	1637.44
128	33.66	16.0	0.049	1643.00
129	33.81	14.5	0.044	1647.15
130	33.93	44.1	0.135	1650.37
131	34.09	28.9	0.089	1655.04
132	34.22	9.2	0.028	1658.59
133	34.40	128.3	0.393	1663.63
134	34.53	2.0	0.006	1667.09
135	34.70	5.8	0.018	1671.85

System : CP3800  
Method : ELITE 5\_June 11 2019  
SEQUENCE: August 2019

Acquired : 8/17/2019 12:28:39 PM  
Processed : 9/23/2019 8:59:38 AM  
Printed : 9/23/2019 9:00:17 AM



SS\_Citronella oil\_17082019\_3.DAT - Front (FID)

System : CP3800  
 Method : ELITE 5\_June 11 2019  
 SEQUENCE: August 2019

Acquired : 8/17/2019 12:28:39 PM  
 Processed : 9/23/2019 8:59:38 AM  
 Printed : 9/23/2019 9:00:17 AM

Peak results :

Index	Time (Min)	Area (µV.Min)	Area % [%]	Retention Index
1	6.62	5.7	0.012	931.41
2	7.75	4.4	0.009	970.86
3	8.08	17.3	0.036	982.63
4	8.22	42.7	0.089	987.30
5	8.72	5.8	0.012	1003.85
6	9.13	6.0	0.012	1015.06
7	9.55	989.0	2.058	1026.56
8	9.68	3.5	0.007	1030.08
9	9.81	7.7	0.016	1033.75
10	10.19	9.7	0.020	1044.18
11	10.31	7.0	0.015	1047.44
12	10.40	39.2	0.081	1050.00
13	10.64	9.1	0.019	1056.50
14	10.99	3.6	0.008	1066.30
15	11.75	19.1	0.040	1087.18
16	12.13	221.4	0.461	1097.39
17	12.60	18.8	0.039	1109.30
18	13.27	42.9	0.089	1126.01
19	14.01	207.9	0.433	1144.20
20	14.33	12075.1	25.130	1151.98
21	14.48	91.2	0.190	1155.68
22	14.98	13.3	0.028	1168.15
23	15.11	12.9	0.027	1171.36
24	15.32	9.9	0.021	1176.58
25	15.48	5.9	0.012	1180.53
26	15.86	17.4	0.036	1189.92
27	15.95	5.6	0.012	1192.10
28	16.41	40.2	0.084	1203.42
29	16.99	8.7	0.018	1217.47
30	17.41	7026.2	14.623	1227.42
31	17.92	98.8	0.206	1239.86
32	18.22	4.9	0.010	1247.14
33	18.51	7531.8	15.675	1254.19
34	19.14	139.8	0.291	1269.36
35	19.31	9.0	0.019	1273.51
36	20.43	6.3	0.013	1300.57
37	20.79	39.1	0.081	1309.40
38	20.94	6.9	0.014	1313.05
39	21.71	56.5	0.118	1331.90
40	21.92	14.3	0.030	1337.07
41	22.51	1051.4	2.188	1351.60
42	22.73	191.8	0.399	1357.10
43	23.50	15.0	0.031	1376.07
44	23.75	870.2	1.811	1382.27
45	23.86	218.8	0.455	1385.06
46	23.97	6.6	0.014	1387.68
47	24.15	2256.1	4.695	1392.12
48	25.25	116.7	0.243	1419.98
49	25.63	26.2	0.055	1429.68
50	25.77	7.0	0.014	1433.16
51	26.24	12.1	0.025	1445.07
52	26.30	12.8	0.027	1446.56
53	26.48	41.8	0.087	1451.23
54	26.60	85.8	0.179	1454.21
55	26.96	27.4	0.057	1463.44
56	27.11	6.8	0.014	1467.30
57	27.37	26.8	0.056	1473.98
58	27.49	113.5	0.236	1476.96
59	27.67	1089.1	2.267	1481.68
60	27.78	12.5	0.026	1484.40
61	27.87	43.4	0.090	1486.82
62	28.10	46.1	0.096	1492.52
63	28.19	115.7	0.241	1494.90

— Citronella  
 — Citronella  
 — Geraniol

Chromatogram: SS\_Citronella oil\_17082019\_3

CENTRAL LABORATORY, CIMAP

System : CP3800  
 Method : ELITE 5\_June 11 2019  
 SEQUENCE: August 2019

Acquired : 8/17/2019 12:28:39 PM  
 Processed : 9/23/2019 8:59:38 AM  
 Printed : 9/23/2019 9:00:17 AM

Index	Time [Min]	Area [uV.Min]	Area % [%]	Retention Index
64	28.41	263.7	0.549	1500.49
65	28.61	101.5	0.211	1505.84
66	28.93	326.1	0.679	1514.53
67	29.18	135.9	0.283	1521.12
68	29.29	1034.0	2.152	1524.06
69	29.53	22.9	0.048	1530.57
70	29.61	21.7	0.045	1532.71
71	29.74	12.4	0.026	1536.14
72	29.81	65.5	0.136	1538.06
73	30.29	6453.3	13.431	1550.71
74	30.72	5.4	0.011	1562.30
75	31.11	11.4	0.024	1572.73
76	31.24	784.9	1.633	1576.29
77	31.53	8.2	0.017	1583.96
78	32.25	16.2	0.034	1603.45
79	32.35	9.6	0.020	1606.12
80	32.72	363.4	0.756	1616.39
81	32.88	43.2	0.090	1621.01
82	32.97	0.3	0.001	1623.48
83	33.22	38.4	0.080	1630.49
84	33.30	419.2	0.872	1632.73
85	33.66	524.1	1.091	1642.86
86	33.82	78.2	0.163	1647.34
87	33.97	407.7	0.848	1651.45
88	34.11	992.6	2.066	1655.56
89	34.61	81.1	0.169	1669.56
90	35.30	44.0	0.092	1688.70
91	36.19	58.9	0.123	1714.27
92	36.41	298.1	0.620	1720.67
93	37.01	9.1	0.019	1738.42
94	37.12	75.4	0.157	1741.50
95	38.19	7.5	0.016	1772.97
96	39.52	20.7	0.043	1812.56
97	40.27	9.3	0.019	1835.59
98	40.41	6.5	0.014	1839.95
99	45.67	30.8	0.064	2006.57
100	59.36	0.1	0.000	2505.81
Total		48049.5	100.000	

→ Elemol

Software Version : 6.3.2.0646  
 Operator : manager  
 Sample Number :  
 AutoSampler : NONE  
 Instrument Name : ASXL  
 Instrument Serial # : None  
 Delay Time : 0.00 min  
 Sampling Rate : 12.5000 pts/s  
 Sample Volume : 1.000000 ul  
 Sample Amount : 1.0000  
 Data Acquisition Time : 9/23/2019 10:39:08 AM

Date : 9/23/2019 12:28:41 PM  
 Sample Name :  
 Study :  
 Rack/Vial : 0/0  
 Channel : A  
 A/D mV Range : 1000  
 End Time : 67.67 min

Area Reject : 0.000000  
 Dilution Factor : 1.00  
 Cycle : 1

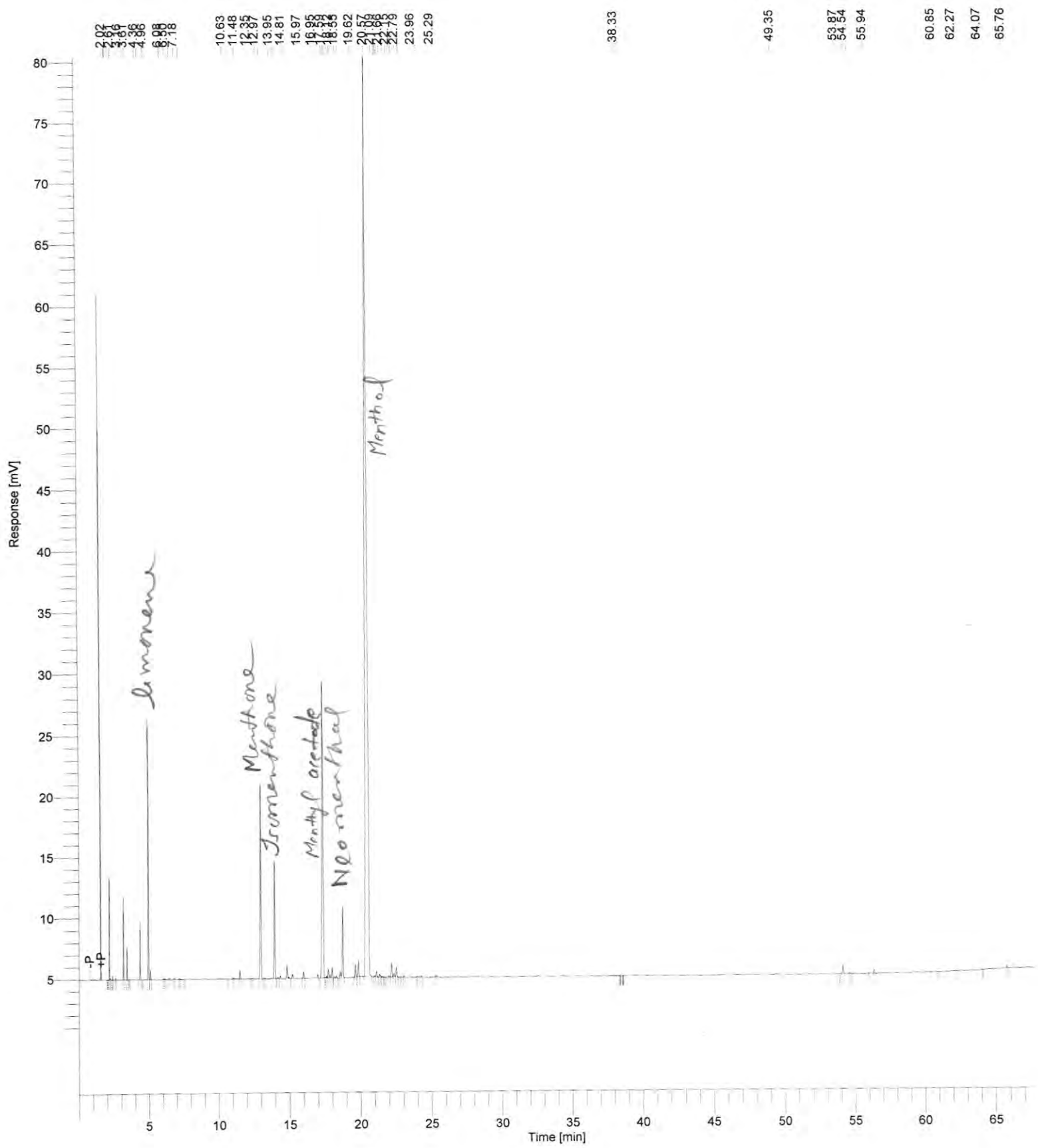
Raw Data File : C:\PenExe\TcWS\Ver6.3.2\Examples\cimap\data\September 2019\SS\_MENTHA OIL\_23092019\_raw  
 Result File : C:\PenExe\TcWS\Ver6.3.2\Examples\cimap\data\September 2019\SS\_MENTHA OIL\_23092019\_rst [Editing in Progress]  
 Inst Method : C:\PenExe\TcWS\Ver6.3.2\Examples\cimap\Method\DB\_wax\_22012018 from  
 C:\PenExe\TcWS\Ver6.3.2\Examples\cimap\data\September 2019\SS\_MENTHA OIL\_23092019\_raw  
 Proc Method : C:\PenExe\TcWS\Ver6.3.2\Examples\cimap\Method\DB\_wax\_22012018 from  
 C:\PenExe\TcWS\Ver6.3.2\Examples\cimap\data\September 2019\SS\_MENTHA OIL\_23092019\_rst [Editing in Progress]  
 Calib Method : C:\PenExe\TcWS\Ver6.3.2\Examples\cimap\Method\DB\_wax\_22012018 from  
 C:\PenExe\TcWS\Ver6.3.2\Examples\cimap\data\September 2019\SS\_MENTHA OIL\_23092019\_rst [Editing in Progress]  
 Report Format File : C:\PenExe\TcWS\Ver6.3.2\Examples\cimap\Method\DB\_wax\_22012018.rpt  
 Sequence File : C:\PenExe\TcWS\Ver6.3.2\Examples\SS\_MENTHA OIL\_23092019.seq

## DEFAULT REPORT

Peak #	Time [min]	Area [ $\mu\text{V}\cdot\text{s}$ ]	Height [ $\mu\text{V}$ ]	Area [%]	Norm. Area [%]	BL	Area/Height [s]
1	2.019	14.88	10.25	0.00	0.00	BB	1.4520
2	2.157	11683.10	8378.16	1.03	1.03	BV	1.3945
3	2.222	243.95	170.75	0.02	0.02	VB	1.4287
4	2.393	550.56	391.10	0.05	0.05	BB	1.4077
5	2.606	266.67	177.45	0.02	0.02	BB	1.5028
6	3.164	12409.71	6707.45	1.09	1.09	BB	1.8501
7	3.418	5129.35	2693.81	0.45	0.45	BB	1.9041
8	3.609	38.18	21.28	0.00	0.00	BB	1.7939
9	4.356	10493.42	4713.88	0.92	0.92	BB	2.2261
10	4.532	26.54	12.35	0.00	0.00	BB	2.1493
11	4.957	53676.08	21363.12	4.73	4.73	BB	2.5126 — Limonene
12	5.109	1989.40	791.24	0.18	0.18	BB	2.5143
13	6.076	171.62	67.92	0.02	0.02	BV	2.5266
14	6.157	311.21	78.77	0.03	0.03	VB	3.9509
15	6.501	521.94	160.74	0.05	0.05	BB	3.2471
16	6.809	344.07	119.72	0.03	0.03	BB	2.8738
17	7.179	303.90	102.27	0.03	0.03	BB	2.9715
18	7.498	112.21	41.94	0.01	0.01	BB	2.6758
19	7.498	112.21	41.94	0.01	0.01	BB	2.7830
19	10.629	62.90	22.60	0.01	0.01	BB	2.7830
20	11.018	330.57	101.34	0.03	0.03	BB	3.2621
21	11.478	2322.22	697.54	0.20	0.20	BB	3.3292
22	12.350	97.99	31.67	0.01	0.01	BB	3.0936
23	12.974	69176.10	16017.64	6.09	6.09	BB	4.3187 — Menthone
24	13.220	237.94	63.78	0.02	0.02	BB	3.7304
25	13.946	39714.17	9653.73	3.50	3.50	BB	4.1139 — Isomenthone
26	14.185	427.33	90.81	0.04	0.04	BV	4.7055
27	14.337	796.10	211.94	0.07	0.07	VB	3.7563
28	14.811	4121.82	1027.58	0.36	0.36	BE	4.0112
29	14.938	419.95	113.69	0.04	0.04	EB	3.6939
30	15.182	1652.07	347.07	0.15	0.15	BB	4.7600
31	15.968	2048.81	516.69	0.18	0.18	BB	3.9653
32	16.953	1208.88	303.28	0.11	0.11	BB	3.9860
33	17.354	135413.97	24291.20	11.93	11.93	BB	5.5746 — menthyl acetate
34	17.587	318.74	101.91	0.03	0.03	BV	3.1276
35	17.706	2737.64	687.54	0.24	0.24	VV	3.9818
36	17.817	988.73	258.47	0.09	0.09	VB	3.8253
37	17.973	3286.40	836.33	0.29	0.29	BB	3.9296
38	18.124	385.68	95.05	0.03	0.03	BB	4.0575
39	18.278	667.31	159.18	0.06	0.06	BB	4.1923
40	18.551	2386.59	523.10	0.21	0.21	BV	4.5624
41	18.736	22974.91	5799.90	2.02	2.02	VB	3.9613 — Neomenthyl

# Chromatogram

Sample Name :  
Sample # :  
Page 1 of 1  
File Name : C:\PenExe\TcWS\Ver6.3.2\Examples\cimap\data\September 2019\SS\_MENTHA OIL\_23092019\_raw  
Date : 9/23/2019 12:28:08 PM  
Method :  
Time of Injection: 9/23/2019 10:39:08 AM  
Start Time : 0.00 min  
End Time : 67.67 min  
Low Point : 0.94 mV  
High Point : 80.38 mV  
Plot Offset: 0.94 mV  
Plot Scale: 79.4 mV



9/23/2019 12:28:41 PM Result: C:\PenExe\TcWS\Ver6.3.2\Examples\cimap\data\September 2019\SS\_MENTHA  
 OiL\_23092019\_.rst

Peak #	Time [min]	Area [ $\mu$ V·s]	Height [ $\mu$ V]	Area [%]	Norm. Area [%]	BL	Area/Height [s]
42	19.621	4376.56	1048.70	0.39	0.39	BB	4.1733
43	19.828	5438.66	1274.33	0.48	0.48	BB	4.2679
44	20.568	714421.92	75337.77	62.92	62.92	BB	9.4829
45	20.945	314.25	85.26	0.03	0.03	BV	3.6860
46	21.092	1772.85	461.55	0.16	0.16	VB	3.8411
47	21.312	834.03	220.00	0.07	0.07	BV	3.7910
48	21.397	294.17	82.24	0.03	0.03	VV	3.5770
49	21.497	315.14	69.83	0.03	0.03	VB	4.5130
50	21.664	149.39	40.27	0.01	0.01	BB	3.7100
51	21.955	525.22	132.33	0.05	0.05	BV	3.9689
52	22.154	5537.21	1107.36	0.49	0.49	VV	5.0004
53	22.322	1311.99	326.26	0.12	0.12	VV	4.0214
54	22.484	3411.51	805.39	0.30	0.30	VB	4.2358
55	22.791	85.46	27.91	0.01	0.01	BB	3.0622
56	23.021	587.84	138.03	0.05	0.05	BB	4.2588
57	23.958	24.93	6.49	0.00	0.00	BB	3.8406
58	24.255	434.10	74.12	0.04	0.04	BB	5.8564
59	25.286	523.58	141.72	0.05	0.05	BB	3.6946
60	38.326	3.03	7.43	0.00	0.00	BB	0.4080
61	38.401	3.85	7.82	0.00	0.00	BB	0.4921
62	38.537	4.35	5.12	0.00	0.00	BB	0.8509
63	38.637	15.15	8.20	0.00	0.00	BB	1.8477
64	49.351	26.08	8.61	0.00	0.00	BB	3.0288
65	53.874	1.79	4.07	0.00	0.00	BB	0.4407
66	54.114	2535.39	617.53	0.22	0.22	BB	4.1057
67	54.543	272.58	71.04	0.02	0.02	BB	3.8368
68	54.795	18.80	8.63	0.00	0.00	BB	2.1791
69	55.944	169.97	47.57	0.01	0.01	BB	3.5732
70	56.324	1096.47	287.76	0.10	0.10	BB	3.8104
71	60.854	47.09	19.05	0.00	0.00	BB	2.4716
72	62.269	118.61	41.41	0.01	0.01	BB	2.8645
73	64.074	27.32	13.68	0.00	0.00	BB	1.9967
74	65.760	739.78	234.63	0.07	0.07	BB	3.1530
		1135502.68	190716.35	100.00	100.00		

*Menthol*

Missing Component Report  
 Component Expected Retention (Calibration File)

All components were found

GC-FID analysis report of essential oil samples***Mentha piperita (A)***

Compound	Content (%)
Limonene	3.3
1,8 Cineole	5.8
Menthone	22.4
Menthofuran	3.0
Isomenthone	4.8
Menthyl acetate	8.0
Neomenthol	4.3
Menthol	34.0
Pulegone	1.3

***Mentha spicata (B)***

Compound	Content (%)
Limonene	20.6
1,8 Cineole	2.8
Carvone	56.6

***Mentha citrata (C)***

Compound	Content (%)
Linalool	28.9
Linalyl acetate	26.9



***Ocimum basilicum* (D)**

Compound	Content (%)
Linalool	18.1
Methyl chavicol	72.6

**Palmarosa (E)**

Compound	Content (%)
Geraniol	80.6
Geranyl acetate	6.0

**Lemongrass oil (F)**

Compound	Content (%)
Citral	72.2

**Citronella oil (G)**

Compound	Content (%)
Limonene	2.3
Linalool	1.8
<b>Citronellal</b>	<b>34.5</b>
Citronellol	11.7
Neral	1.7
Geraniol	28.8
Geranial	2.3
Citronellyl acetate	1.6
Geranyl acetate	2.6

***Mentha arvensis* (H)**

Compound	Content (%)
Limonene	4.1
Menthone	6.2
Isomenthone	3.4
Menthyl acetate	3.0
<b>Menthol</b>	<b>73.0</b>

**Geranium oil (I)**

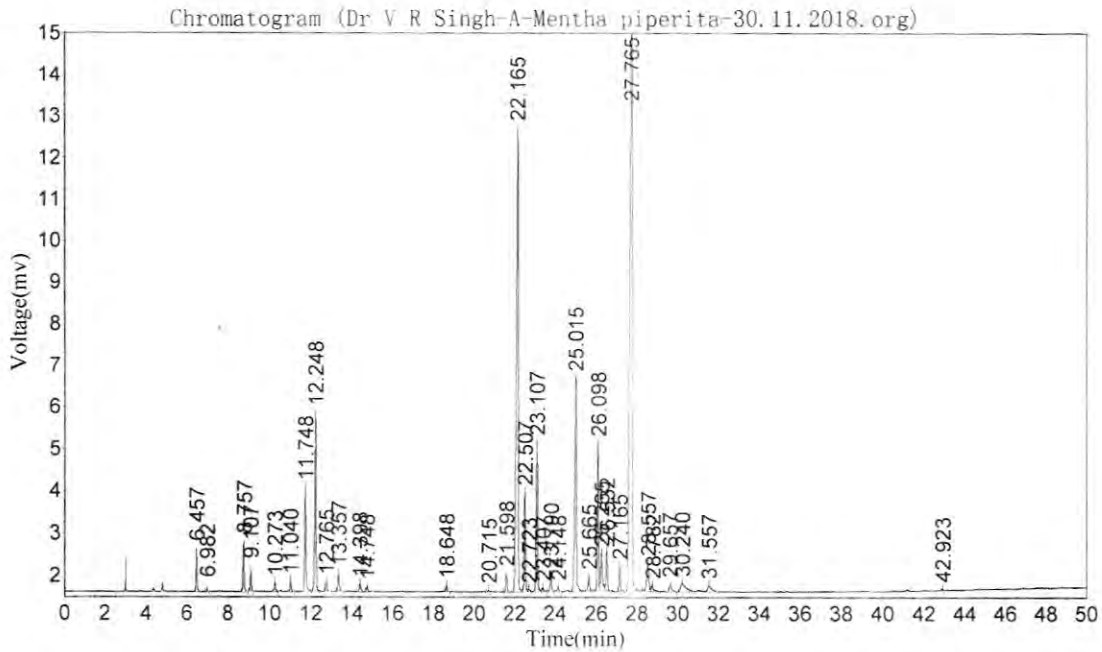
Compound	Content (%)
Linalool	11.2
Isomenthone	8.8
<b>Citronellol</b>	<b>31.7</b>
Neral	0.4
<b>Geraniol</b>	<b>12.0</b>
Geranial	0.6
Citronellyl formate	4.6
Geranyl formate	1.6
10-epi- $\gamma$ -eudesmol	4.2

13

Date/Time: 2018-12-21, 12:38:13 PM  
 Data File: D:\RSV-Supecowax\Dr V R Singh-A-Mentha piperita-30.11.2018.org  
 Method File: D:\CS200\GLC.mtd

Date/Time: 2018-12-21, 4:17:21 PM

Sample Description:  
 Dr V R Singh-Mentha piperita-30.11.2018



**Results**

Peak No.	Peak ID	Ret Time	Height	Area	Conc.
1	<u>α-Pinene</u>	6.457	903.000	3489.500	<u>1.0085</u>
2		6.982	38.960	154.300	0.0446
3	<u>Sabinene</u>	8.757	1095.476	4559.700	<u>1.3178</u>
4		9.107	477.000	1937.550	0.5600
5		10.273	212.917	1010.700	0.2921
6		11.040	260.257	1196.100	0.3457
7	<u>Limonene</u>	11.748	2478.990	11478.679	<u>3.3173</u>
8	<u>1,8-Cineole</u>	12.248	4260.711	19960.305	<u>5.7685</u>
9		12.765	240.302	1086.350	0.3140
10		13.357	455.947	2310.100	0.6676
11		14.398	180.000	1065.250	0.3079
12		14.748	125.143	565.100	0.1633
13		18.648	150.226	666.300	0.1926
14		20.715	34.545	142.400	0.0412
15	<u>Menthane</u>	21.598	466.526	1939.100	0.5604
16	<u>Menthofuran</u>	22.165	11119.135	77396.063	<u>22.3675</u>
17		22.507	2316.487	10249.763	<u>2.9622</u>
18		22.723	48.270	245.816	0.0710
19	<u>Isomenthone</u>	23.107	3536.468	16531.570	<u>4.7776</u>
20		23.407	92.403	490.728	0.1418
21		23.790	390.634	1927.400	0.5570

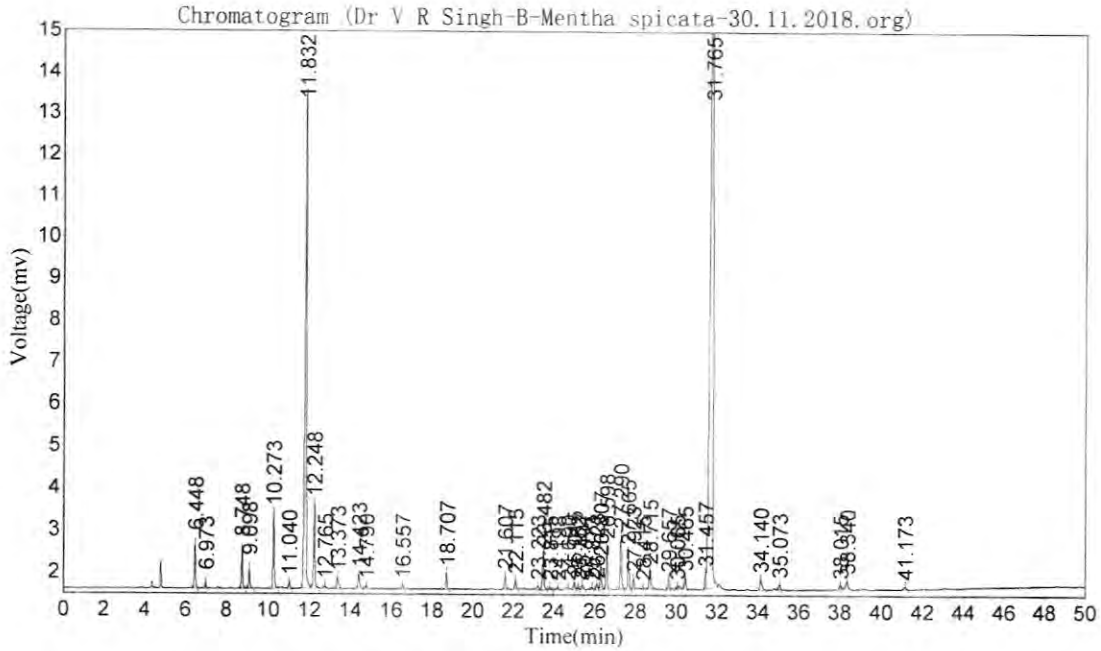
4

22		24.148	116.821	618.900	0.1789
23	Menthyl acetate	25.015	5060.492	27853.699	8.0497
24		25.665	345.793	1779.500	0.5143
25	Neomenthol	26.098	3483.158	14793.348	4.2753
26		26.265	895.316	5596.142	1.6173
27		26.532	976.968	4519.710	1.3062
28		27.165	595.040	2456.950	0.7101
29	Menthyl	27.765	15788.604	117586.250	33.9824
30	Pulegone	28.557	663.571	4622.553	1.3359
31		28.782	133.357	946.846	0.2736
32		29.657	169.245	1319.650	0.3814
33		30.240	185.077	3640.100	1.0520
34		31.557	131.465	1730.600	0.5001
35		42.923	35.778	153.600	0.0444
<b>Total</b>			57464.082	346020.621	100.0000

Date/Time: 2018-12-21, 1:58:51 PM  
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 Method File: D:\CS200\GLC.mtd

Date/Time: 2018-12-21, 4:18:07 PM

Sample Description:  
 Dr V R Singh-B-Mentha spicata-30.11.2018



Results

Peak No.	Peak ID	Ret Time	Height	Area	Conc.
1		6.448	1094.500	4568.800	1.3442
2		6.973	143.875	515.800	0.1518
3		8.748	922.158	3981.200	1.1713
4		9.098	476.667	2067.000	0.6081
5		10.273	1793.551	8206.600	2.4145
6		11.040	146.714	717.200	0.2110
7	<i>Limonene</i>	11.832	11780.875	70059.703	<u>20.6125</u>
8	<i>1,8-Cineole</i>	12.248	2005.625	9609.800	<u>2.8273</u>
9		12.765	62.367	367.800	0.1082
10		13.373	260.182	1668.300	0.4908
11		14.423	334.634	2064.400	0.6074
12		14.790	79.371	477.850	0.1406
13		16.557	87.744	451.100	0.1327
14		18.707	382.200	1792.100	0.5273
15		21.607	319.667	1302.000	0.3831
16		22.115	211.222	1067.650	0.3141
17		23.223	76.625	614.800	0.1809
18		23.482	902.000	4351.100	1.2802
19		23.815	49.656	285.100	0.0839
20		24.198	65.000	442.700	0.1302
21		24.690	60.023	458.900	0.1350

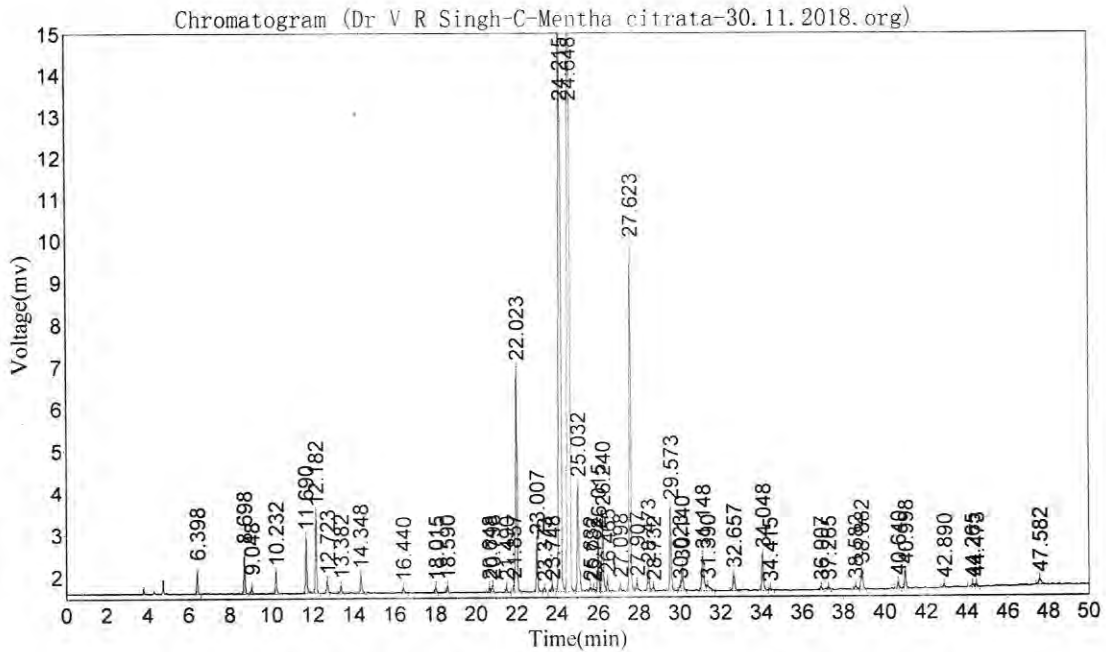
5

22	25.015	159.674	730.625	0.2150
23	25.182	54.717	283.875	0.0835
24	25.407	117.000	646.400	0.1902
25	25.873	55.174	283.350	0.0834
26	26.123	120.846	732.083	0.2154
27	26.307	623.604	3003.701	0.8837
28	26.598	1056.220	4352.065	1.2804
29	27.290	1285.600	5986.450	1.7613
30	27.665	896.000	3852.400	1.1334
31	27.923	251.800	1134.850	0.3339
32	28.415	31.947	133.450	0.0393
33	28.715	421.333	2347.600	0.6907
34	29.657	255.500	1092.300	0.3214
35	30.065	28.733	138.200	0.0407
36	30.465	245.500	1356.400	0.3991
37	31.457	360.286	1460.924	0.4298
38	<u>Carbone</u> - 31.765	21229.166	192373.281	<u>56.5988</u>
39	34.140	242.786	1837.200	0.5405
40	35.073	121.000	715.000	0.2104
41	38.015	85.500	596.000	0.1754
42	38.340	178.333	1266.600	0.3727
43	41.173	66.235	496.600	0.1461
<b>Total</b>		49141.611	339889.257	100.0000

Date/Time: 2018-12-21, 3:10:43 PM  
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 Method File: D:\CS200\GLC.mtd

Date/Time: 2018-12-21, 4:19:12 PM

Sample Description:  
 Dr V R Singh-C-Mentha citrata-30.11.2018



**Results**

Peak No.	Peak ID	Ret Time	Height	Area	Conc.
1		6.398	503.000	2033.700	0.4825
2		8.698	889.692	3792.300	0.8996
3		9.048	137.222	588.900	0.1397
4		10.232	501.600	2402.700	0.5700
5		11.690	1305.500	5921.300	1.4047
6		12.182	1952.073	9004.450	2.1361
7		12.723	288.000	1227.000	0.2911
8		13.382	185.000	928.600	0.2203
9		14.348	425.733	2210.500	0.5244
10		16.440	129.917	647.200	0.1535
11		18.015	140.400	662.100	0.1571
12		18.590	149.103	655.400	0.1555
13		20.648	126.774	518.517	0.1230
14		20.798	145.717	681.833	0.1618
15		21.490	117.000	551.200	0.1308
16		21.857	168.701	609.572	0.1446
17		22.023	5421.925	27468.828	6.5164
18		23.007	1209.430	5746.912	1.3633
19		23.373	85.759	510.839	0.1212
20		23.748	130.895	775.000	0.1839
21		24.215	17997.049	121873.516	28.9120

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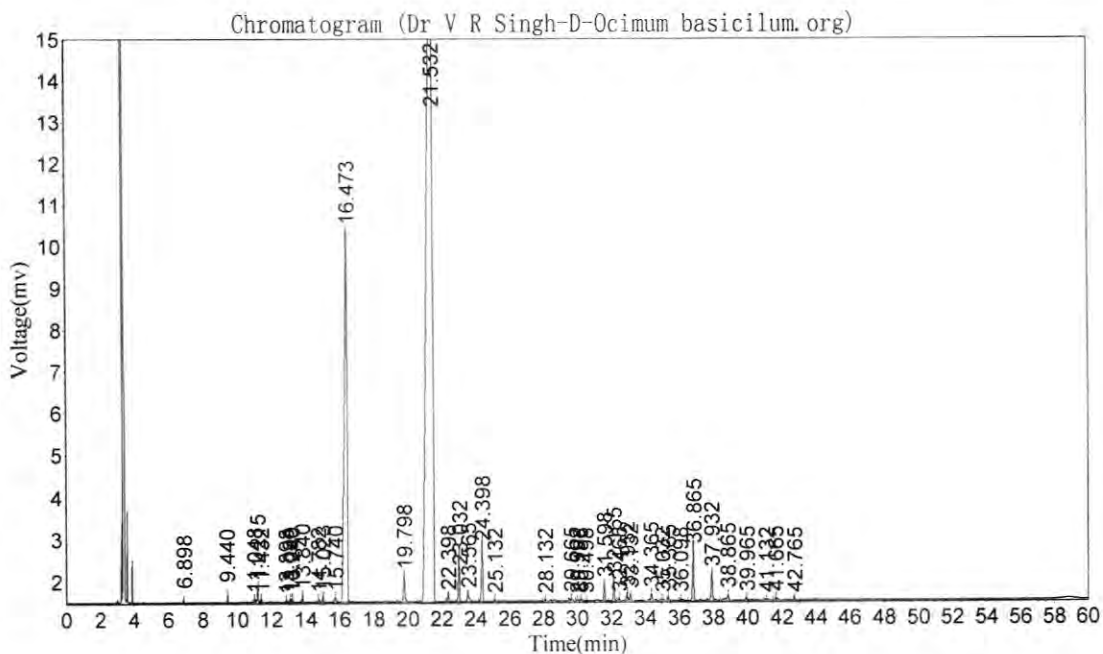
## CSIR CIMAP

22	24.648	16139.663	113534.000	26.9336	<i>Finaly</i>
23	25.032	2614.783	12566.624	2.9812	<i>scitaki</i>
24	25.632	106.000	563.800	0.1338	
25	25.782	57.000	350.000	0.0830	
26	26.015	1316.000	5473.600	1.2985	
27	26.240	1887.000	9604.900	2.2786	
28	26.465	263.000	1221.100	0.2897	
29	27.098	153.400	678.900	0.1611	
30	27.623	8460.744	46104.813	10.9374	
31	27.907	182.100	1158.486	0.2748	
32	28.473	507.222	2528.013	0.5997	
33	28.732	99.714	594.737	0.1411	
34	29.573	2001.716	9757.450	2.3148	
35	30.023	117.340	593.362	0.1408	
36	30.140	570.321	3068.587	0.7280	
37	31.148	829.000	6026.100	1.4296	
38	31.390	117.000	1322.600	0.3138	
39	32.657	380.593	2291.400	0.5436	
40	34.048	842.019	5038.600	1.1953	
41	34.415	44.206	286.300	0.0679	
42	36.907	69.111	347.100	0.0823	
43	37.265	52.080	272.650	0.0647	
44	38.582	91.053	674.034	0.1599	
45	38.882	448.579	2903.366	0.6888	
46	40.640	166.275	922.200	0.2188	
47	40.998	430.353	2249.000	0.5335	
48	42.890	72.122	497.700	0.1181	
49	44.265	61.875	530.678	0.1259	
50	44.473	75.056	426.945	0.1013	
51	47.582	136.467	1135.150	0.2693	
<b>Total</b>		70302.283	421532.561	100.0000	



Date/Time: 2018-12-20, 12:28:54 PM  
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 Method File: D:\CS200\GLC.mtd

Date/Time: 2018-12-20, 4:14:19 PM



Results

Peak No.	Peak ID	Ret Time	Height	Area	Conc.
1		6.898	48.500	136.200	0.0256
2		9.440	184.533	545.750	0.1027
3		11.048	76.419	247.560	0.0466
4		11.215	395.349	1287.039	0.2421
5		11.432	75.950	252.000	0.0474
6		12.898	40.000	139.100	0.0262
7		13.098	73.342	282.784	0.0532
8		13.240	103.789	368.816	0.0694
9		13.840	164.087	600.600	0.1130
10		14.782	73.059	398.600	0.0750
11		15.023	134.800	554.000	0.1042
12		15.740	113.000	687.000	0.1292
13		16.473	8847.385	96375.000	18.1295 <i>linalool</i>
14		19.798	630.722	3883.200	0.7305
15		21.532	18655.000	385901.188	72.5934 <i>Methyl</i>
16		22.398	181.250	1200.300	0.2258 <i>Chavicol</i>
17		23.032	1122.190	5772.415	1.0859
18		23.565	222.571	1627.786	0.3062
19		24.398	1531.125	8231.900	1.5485
20		25.132	45.222	221.100	0.0416
21		28.132	30.000	205.800	0.0387
22		29.665	58.818	489.400	0.0921
23		29.998	20.250	134.800	0.0254
24		30.198	30.750	198.100	0.0373

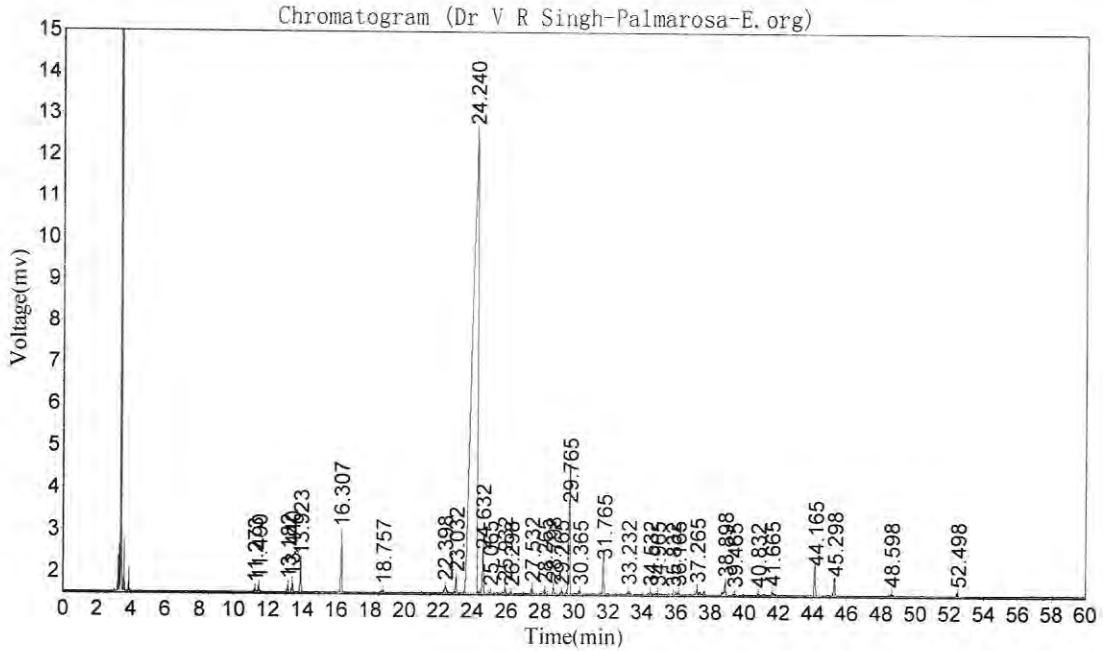
7

## CSIR CIMAP

25	30.498	21.000	118.000	0.0222
26	31.598	359.455	1800.900	0.3388
27	32.165	535.714	2647.957	0.4981
28	32.465	61.429	347.543	0.0654
29	32.932	190.706	907.570	0.1707
30	33.132	129.118	745.329	0.1402
31	34.365	155.750	1121.200	0.2109
32	35.032	38.565	297.788	0.0560
33	35.365	96.174	489.314	0.0920
34	36.098	28.471	277.900	0.0523
35	36.865	1344.000	7037.400	1.3238
36	37.932	618.235	3863.800	0.7268
37	38.865	112.545	1068.100	0.2009
38	39.965	39.500	196.900	0.0370
39	41.132	20.000	285.500	0.0537
40	41.665	46.667	449.300	0.0845
41	42.765	25.700	198.000	0.0372
<b>Total</b>		36681.140	531592.938	100.0000

Date/Time: 2018-12-20, 4:13:34 PM  
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 Method File: D:\CS200\GLC.mtd

Date/Time: 2018-12-20, 4:14:00 PM



Results

Peak No.	Peak ID	Ret Time	Height	Area	Conc.
1		11.273	69.389	219.400	0.0727
2		11.490	138.125	457.100	0.1515
3		13.182	168.375	631.500	0.2093
4		13.440	225.077	813.900	0.2697
5		13.923	729.000	2622.600	0.8691
6		16.307	1425.073	6090.200	2.0182
7		18.757	49.000	220.700	0.0731
8		22.398	150.946	1326.100	0.4395
9		23.032	360.966	1563.200	0.5180
10		24.240	11057.965	243201.891	80.5949 <i>Geranyl</i>
11		24.632	1105.419	5761.006	1.9091
12		25.065	17.500	99.500	0.0330
13		25.932	109.000	619.600	0.2053
14		26.298	15.000	77.100	0.0256
15		27.532	120.125	551.700	0.1828
16		28.265	92.778	521.900	0.1730
17		28.798	146.488	879.190	0.2914
18		29.265	54.837	387.714	0.1285
19		29.765	2834.140	18082.150	5.9923 <i>Geranyl</i>
20		30.365	81.400	443.600	0.1470 <i>acetyl</i>
21		31.765	950.000	5141.400	1.7038
22		33.232	67.500	392.300	0.1300
23		34.532	50.679	449.685	0.1490
24		34.965	26.357	105.428	0.0349

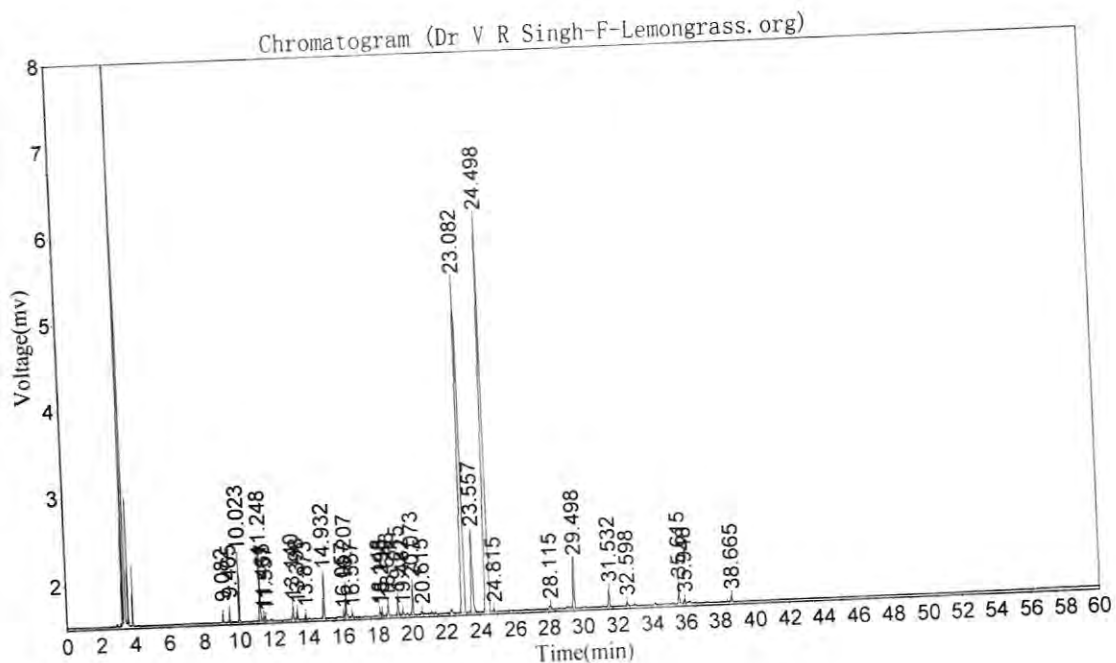
## CSIR CIMAP

2

25	35.832	23.333	146.642	0.0486
26	36.165	56.750	441.700	0.1464
27	37.265	120.500	980.300	0.3249
28	38.898	280.077	1692.400	0.5608
29	39.465	24.800	160.200	0.0531
30	40.832	23.000	108.200	0.0359
31	41.665	64.000	560.700	0.1858
32	44.165	738.783	4228.100	1.4012
33	45.298	406.000	2039.000	0.6757
34	48.598	42.538	331.200	0.1098
35	52.498	80.571	411.100	0.1362
<b>Total</b>		21905.490	301758.407	100.0000

Date/Time: 2018-12-20, 2:59:24 PM  
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 Method File: D:\CS200\GLC.mtd

Date/Time: 2018-12-20, 4:16:00 PM



Results

Peak No.	Peak ID	Ret Time	Height	Area	Conc.
		9.082	97.176	295.900	0.3201
1		9.465	129.500	389.900	0.4218
2		10.023	717.500	2253.100	2.4373
3		11.248	687.000	2232.400	2.4149
4		11.465	59.862	214.079	0.2316
5		11.557	41.724	141.571	0.1531
6		13.140	163.000	620.800	0.6716
7		13.398	110.000	368.400	0.3985
8		13.873	68.895	256.800	0.2778
9		14.932	497.000	1813.700	1.9620
10		16.057	37.250	156.575	0.1694
11		16.207	357.000	1405.125	1.5200
12		16.557	47.600	204.800	0.2215
13		18.148	67.000	281.300	0.3043
14		18.298	56.000	236.100	0.2554
15		18.648	130.000	727.100	0.7865
16		19.215	201.000	833.700	0.9019
17		19.482	54.455	277.050	0.2997
18		20.073	345.724	1463.850	1.5835
19		20.615	33.364	136.400	0.1476
20		20.615	33.364	136.400	0.1476
21		23.082	3873.000	28981.000	31.3505 Neral
22		23.557	883.130	5438.400	5.8830
23		24.498	4519.783	37813.699	40.9053 Geraniol
24		24.815	31.364	136.700	0.1479 Citral

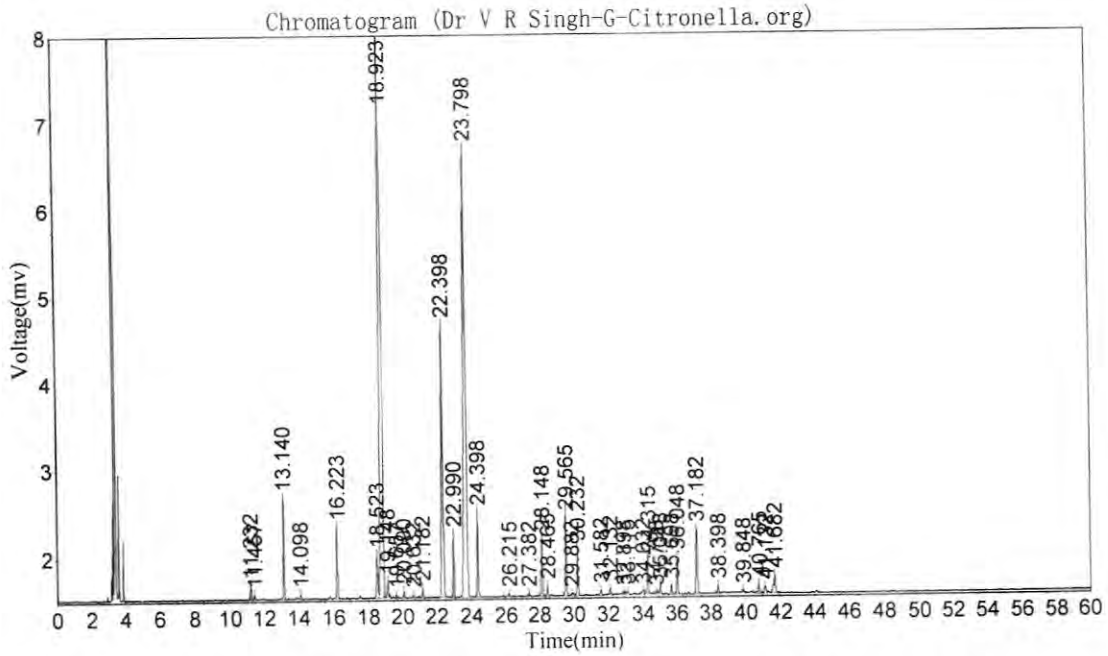
9

## CSIR CIMAP

25	28.115	39.500	317.200	0.3431
26	29.498	571.400	2578.800	2.7896
27	31.532	206.478	974.900	1.0546
28	32.598	40.143	217.000	0.2347
29	35.615	200.412	956.000	1.0342
30	35.948	50.308	258.800	0.2800
31	38.665	74.875	460.900	0.4986
<b>Total</b>		14391.442	92442.049	100.0000

Date/Time: 2018-12-20, 1:43:01 PM  
 Data File: D:\RSV-BP-5\Dr V R Singh-G-Citronella.org  
 Method File: D:\CS200\GLC.mtd

Date/Time: 2018-12-20, 4:16:49 PM



Results

Peak No.	Peak ID	Ret Time	Height	Area	Conc.
1		11.232	166.667	556.450	0.3033
2		11.457	60.000	193.000	0.1052
3		13.140	1137.543	4178.650	2.2773 <i>Limonene</i>
4		14.098	58.118	201.800	0.1100
5		16.223	806.000	3227.800	1.7591 <i>Linalool</i>
6		18.523	499.529	2453.527	1.3372
7		18.923	7251.059	63305.074	34.5007 <i>Citronellal</i>
8		19.148	174.160	908.900	0.4953
9		19.657	38.706	161.300	0.0879
10		20.090	80.263	436.700	0.2380
11		20.632	43.759	199.000	0.1085
12		21.182	113.526	464.350	0.2531
13		22.398	3097.348	21507.199	11.7212 <i>Citronellol</i>
14		22.990	737.607	3097.700	1.6882 <i>Neral</i>
15		23.798	5163.556	52796.898	28.7739 <i>Geranyl</i>
16		24.398	944.750	4141.700	2.2572 <i>Geranyl</i>
17		26.215	37.750	268.700	0.1464
18		27.382	35.067	171.800	0.0936
19		28.148	644.000	2943.600	1.6042 <i>Citronellol acetate</i>
20		28.465	116.200	562.800	0.3067
21		29.565	1007.053	4703.400	2.5633 <i>Geranyl</i>
22		29.882	26.211	321.495	0.1752 <i>acetate</i>
23		30.232	564.553	2620.005	1.4279
24		31.582	64.000	349.100	0.1903

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## CSIR CIMAP

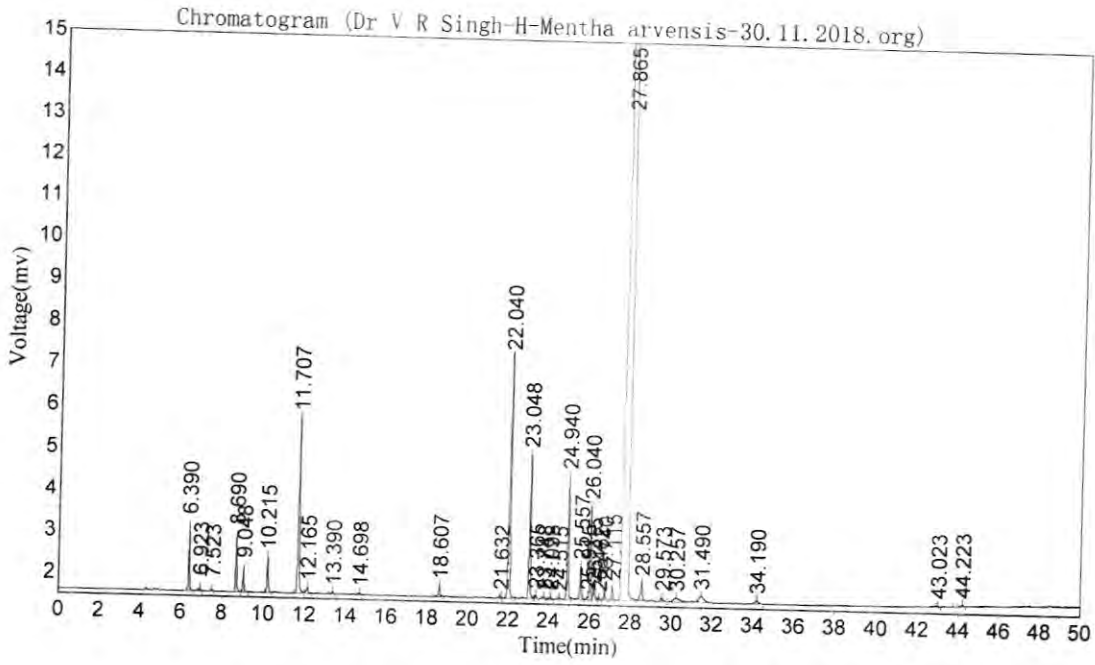
25	32.132	82.154	371.900	0.2027
26	32.898	26.583	130.900	0.0713
27	33.115	31.556	181.000	0.0986
28	34.032	44.706	293.900	0.1602
29	34.315	426.000	2057.000	1.1210
30	34.798	25.471	160.270	0.0873
31	35.048	102.353	619.729	0.3377
32	35.698	116.000	624.800	0.3405
33	36.048	447.630	2236.800	1.2190
34	37.182	757.050	3751.900	2.0448
35	38.398	82.647	422.600	0.2303
36	39.848	34.714	187.900	0.1024
37	40.765	106.630	634.800	0.3460
38	41.132	67.333	487.100	0.2655
39	41.682	204.000	1557.600	0.8489
<b>Total</b>		25422.248	183489.148	100.0000



Date/Time: 2018-12-21, 4:13:48 PM  
 Data File: D:\RSV-Supecowax\Dr V R Singh-H-Mentha arvensis-30.11.2018.org  
 Method File: D:\CS200\GLC.mtd

Date/Time: 2018-12-21, 4:20:13 PM

Sample Description:  
 Dr V R Singh-H-Mentha arvensis-30.11.2018



Results

Peak No.	Peak ID	Ret Time	Height	Area	Conc.
1		6.390	1520.385	5703.700	1.1924
2		6.923	73.926	291.000	0.0608
3		7.523	36.000	175.000	0.0366
4		8.690	1270.133	5481.585	1.1460
5		9.048	509.024	2186.616	0.4571
6		10.215	865.439	3969.450	0.8299
7	<i>limonene</i>	11.707	4210.069	19655.100	<u>4.1092</u>
8	<i>1,8 cineole</i>	12.165	137.652	826.200	<u>0.1727</u>
9		13.390	60.244	377.950	0.0790
10		14.698	42.077	209.700	0.0438
11		18.607	274.764	1393.850	0.2914
12		21.632	42.813	150.200	0.0314
13	<i>Menthone</i>	22.040	5793.778	29419.900	<u>6.1506</u>
14	<i>isomenthone</i>	23.048	3414.565	16113.317	<u>3.3687</u>
15		23.365	83.464	457.483	0.0956
16		23.748	51.519	249.350	0.0521
17		24.098	78.143	404.300	0.0845
18		24.515	42.429	181.700	0.0380
19	<i>Menthyl acetate</i>	24.940	2983.293	14469.650	<u>3.0251</u>
20		25.557	812.850	3957.200	<u>0.8273</u>
21		25.915	77.783	276.030	0.0577

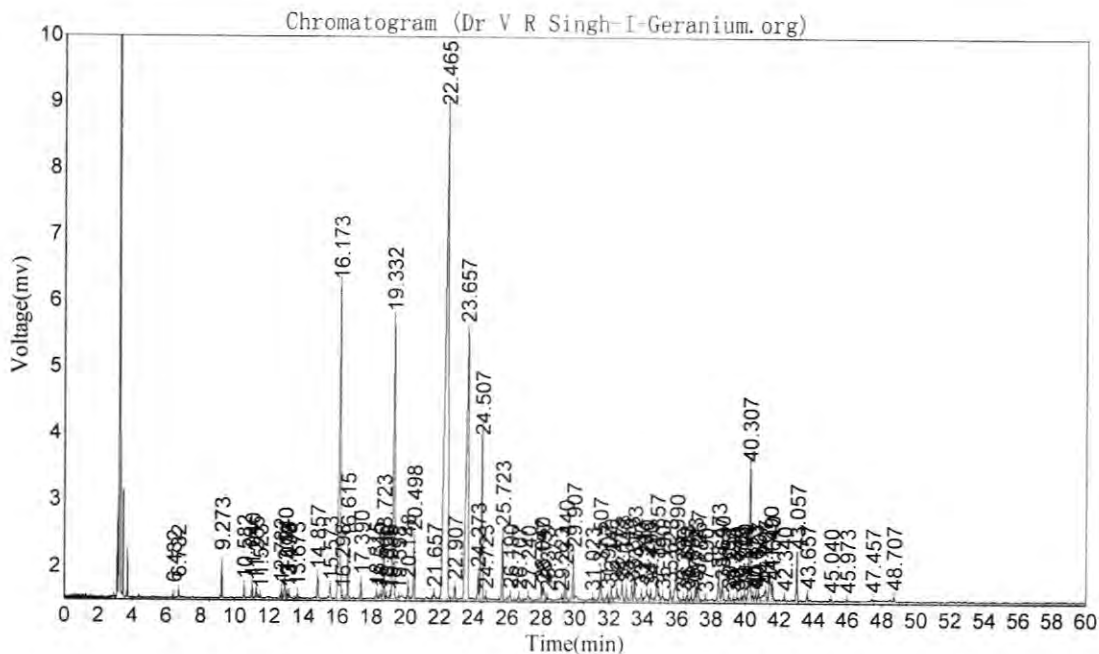
(11)

CSIR CIMAP

22		26.040	2268.087	9252.500	1.9344
23		26.215	265.913	1698.870	0.3552
24		26.482	52.696	253.600	0.0530
25		26.740	314.970	1361.800	0.2847
26		27.115	359.077	1555.300	0.3252
27	<u>Menthol</u>	<u>27.865</u>	29479.529	349124.594	<u>72.9892</u>
28		28.557	433.182	2900.600	0.6064
29		29.573	90.043	668.000	0.1397
30		30.257	93.690	2073.200	0.4334
31		31.490	134.267	2316.200	0.4842
32		34.190	85.333	815.000	0.1704
33		43.023	25.500	158.700	0.0332
34		44.223	31.778	196.000	0.0410
<b>Total</b>			56014.411	478323.645	100.0000

Date/Time: 2018-12-20, 11:15:39 AM  
 Data File: D:\RSV-BP-5\Dr V R Singh-I-Geranium.org  
 Method File: D:\CS200\GLC.mtd

Date/Time: 2018-12-20, 4:15:16 PM



Results

Peak No.	Peak ID	Ret Time	Height	Area	Conc.
1		6.432	38.000	109.200	0.0369
2		6.732	115.231	286.900	0.0970
3		9.273	547.607	1714.900	0.5800
4		10.582	184.000	610.900	0.2066
5		11.040	209.581	719.750	0.2434
6		11.265	147.600	478.650	0.1619
7		11.523	47.909	162.700	0.0550
8		12.732	132.583	480.400	0.1625
9		12.940	299.378	1349.608	0.4565
10		13.073	66.649	232.092	0.0785
11		13.198	56.875	199.800	0.0676
12		13.673	83.543	360.100	0.1218
13		14.857	345.690	1376.250	0.4655
14		15.573	172.200	758.100	0.2564
15		16.173	4798.388	33002.543	11.1620 <i>Limbool</i>
16		16.298	53.164	177.179	0.0599
17		16.615	806.448	2956.000	0.9998
18		17.390	265.000	1113.100	0.3765
19		18.315	94.571	434.300	0.1469
20		18.540	64.625	321.511	0.1087
21		18.723	803.542	3423.900	1.1580
22		18.890	40.375	250.400	0.0847
23		19.098	51.000	185.200	0.0626
24		19.332	4179.000	25970.500	8.7836 <i>920. Mentho</i>

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## CSIR CIMAP

2

25	19.598	29.286	116.300	0.0393
26	20.148	201.478	895.500	0.3029
27	20.498	928.424	4143.400	1.4014
28	21.657	88.488	638.700	0.2160
29	22.465	7449.617	93582.500	31.6510 <u>Citronellol</u>
30	22.907	215.000	1035.900	0.3504 <u>Neral</u>
31	23.657	4015.821	35367.602	11.9619 <u>Geraniol</u>
32	24.273	370.000	1825.300	0.6173 <u>Geraniol</u>
33	24.507	2588.000	13687.200	4.6292 <u>Citro-</u>
34	24.723	59.000	240.600	0.0814 <u>formate</u>
35	25.723	1020.714	4608.500	1.5587 <u>Geranyl</u>
36	26.190	74.300	569.600	0.1926 <u>formate</u>
37	26.707	55.125	383.700	0.1298
38	27.240	53.882	634.700	0.2147
39	28.040	178.861	970.825	0.3283
40	28.157	149.500	993.453	0.3360
41	28.373	24.972	122.075	0.0413
42	29.223	25.931	108.303	0.0366
43	29.440	424.966	1996.196	0.6751
44	29.907	647.333	2856.400	0.9661
45	31.023	36.263	186.800	0.0632
46	31.507	469.000	2583.200	0.8737
47	31.907	78.943	427.729	0.1447
48	32.140	154.543	730.572	0.2471
49	32.473	145.600	676.000	0.2286
50	32.773	219.692	1057.500	0.3577
51	33.040	160.882	829.100	0.2804
52	33.373	216.382	1077.080	0.3643
53	33.523	338.876	1669.526	0.5647
54	33.940	104.472	804.733	0.2722
55	34.240	149.461	1332.572	0.4507
56	34.490	110.618	633.691	0.2143
57	34.857	536.263	3302.837	1.1171
58	35.190	62.105	438.363	0.1483
59	35.623	167.136	938.109	0.3173
60	35.990	562.636	3883.991	1.3136
61	36.390	27.000	195.300	0.0661
62	36.623	78.000	455.900	0.1542
63	36.857	53.619	322.034	0.1089
64	37.123	201.857	1031.438	0.3488
65	37.257	322.476	1675.057	0.5665
66	37.690	27.273	231.200	0.0782
67	38.473	410.065	2438.433	0.8247
68	38.690	203.548	1285.968	0.4349
69	39.057	84.769	445.600	0.1507
70	39.290	20.455	93.500	0.0316
71	39.540	47.200	265.500	0.0898
72	39.773	44.940	308.569	0.1044
73	39.990	90.843	731.905	0.2475
74	40.307	2080.701	12454.569	4.2123 <u>o-epi-</u>
75	40.473	72.627	324.015	0.1096 <u>Eudesmol</u>
76	40.623	80.560	414.497	0.1402

## CSIR CIMAP

3

77	40.807	108.478	670.631	0.2268
78	41.207	153.299	1839.340	0.6221
79	41.490	347.172	2515.411	0.8508
80	41.640	219.104	1145.908	0.3876
81	42.340	43.000	172.200	0.0582
82	43.057	723.500	3553.200	1.2017
83	43.657	84.833	384.000	0.1299
84	45.040	30.000	158.000	0.0534
85	45.973	27.556	192.000	0.0649
86	47.457	27.769	143.200	0.0484
87	48.707	58.619	200.000	0.0676
<b>Total</b>		41385.794	295669.913	100.0000

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**Table: Gas chromatographic analysis of the essential oils sample received from the Store, CRC Pantnagar**

S.No.	Sample Name	Content of Major constituents (%)*
1	Mentholmint oil ( <i>M. arvensis</i> )	Menthol (73.1%), menthone (6.1%), Isomenthone (5.4%), menthyl acetate (3.6%)
2	Peppermint oil ( <i>M. piperita</i> )	Menthol (34.6%), menthone (23.1%) Isomenthone (13.7%), menthyl acetate (9.1%)
3	Spearmint oil ( <i>M. spicata</i> )	Carvone (60.3%), Limonene (15.8%)
4	Bergamot mint oil ( <i>M. citrata</i> var. Kiran)	Linalyl acetate (33.0%), Linalool (30.8%)
5	Geranium oil ( <i>Pelargonium graveolens</i> )	Citronellol (32.3%), Linalool (11.1%), Isomenthone (10.40%), Geraniol (9.8%), Citronellyl formate (6.7%), 10- <i>epi</i> - $\gamma$ -Eudesmol (4.2%)
6	Lemongrass oil ( <i>Cymbopogon flexuosus</i> )	Citral [67.0%; Neral (29.1%) + Geranial (37.9%)], Geraniol (6.0%)
7	Citronella oil ( <i>Cymbopogon winterinus</i> )	Citronellal (35.4%), Geraniol (28.2%), Citronellol (10.8%), Neral (1.9%), Geranial (2.6%)
8	Palmarosa oil ( <i>Cymbopogon martini</i> )	Geraniol (78.7%), Geranyl acetate (7.4%)
9	Rosemary oil ( <i>Rosmarinus officinalis</i> var. CIM-Hariyali)	1,8-Cineole (24.5%), Camphor (23.2%), $\alpha$ -Pinene (16.3%), Camphene (7.4%), Verbenone (5.0%) and $\gamma$ -Terpinene (4.5%)
10	Tulsi oil ( <i>O. basilicum</i> var. CIM-Soumya)	Methyl chavicol (72.5%), Linalool (18.2%)

\*Relative content (%) by electronic integration without FID response factor correction

**Gas Chromatographic conditions:**

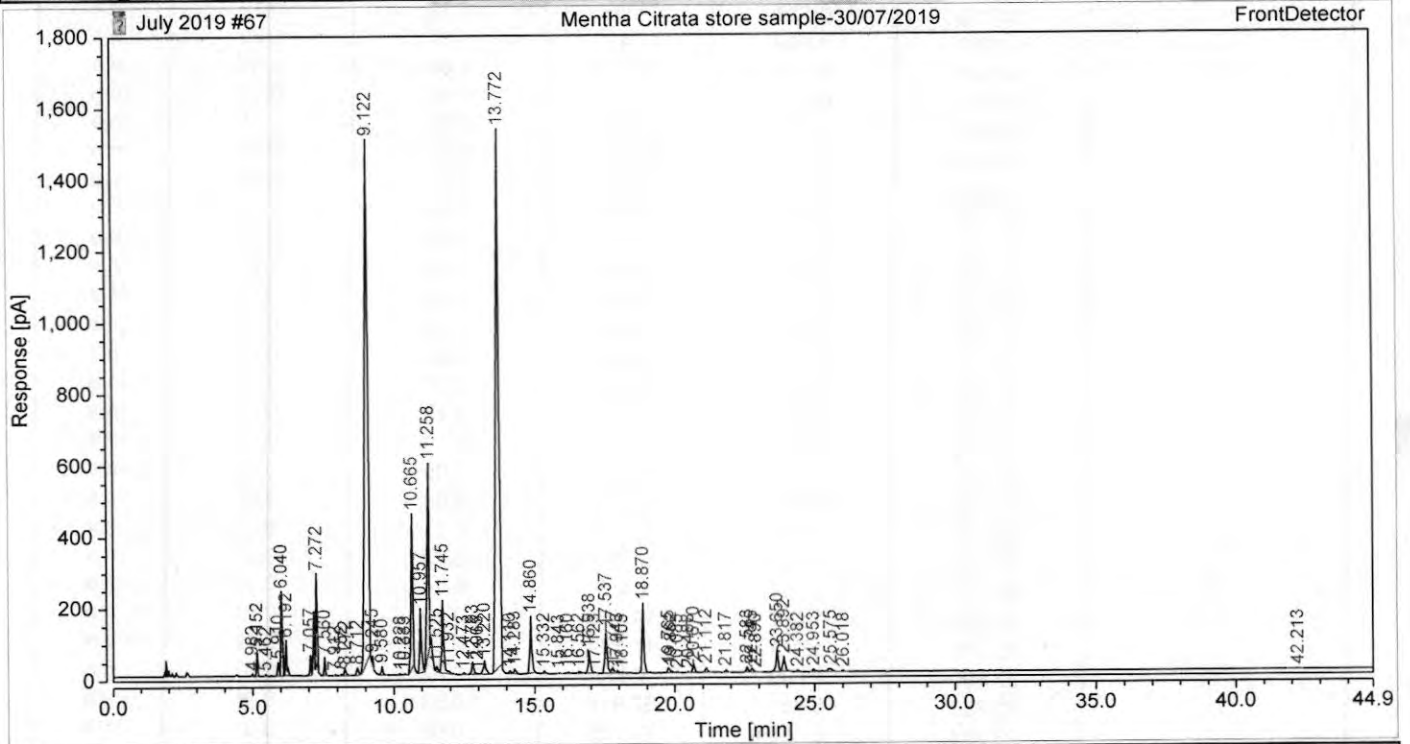
Instrument Name	Thermo-Fisher Trace GC 1300
Column used	TG-5MS capillary column (30 m $\times$ 0.25 $\mu$ m)
Temperature programming	70-230°C with increase of 4°C min <sup>-1</sup>
Carrier gas	Nitrogen (N <sub>2</sub> )
carrier gas flow	1.0 mL min <sup>-1</sup> split mode (1 : 40)
Detector	Flame Ionisation Detector (FID)
Injector temperature	230°C
Detector temperature	250°C

### Chromatogram and Results

**Injection Details**

Injection Name:	Mentha Citrata store sample-30/07/2019	Run Time (min):	44.90
Vial Number:	66	Injection Volume:	0.10
Injection Type:	Unknown	Channel:	FrontDetector
Calibration Level:		Wavelength:	n.a.
Instrument Method:	Gunjan Manual	Bandwidth:	n.a.
Processing Method:	Basic Quantitative(5)	Dilution Factor:	1.0000
Injection Date/Time:	30/Jul/19 13:48	Sample Weight:	1.0000

**Chromatogram**



**Integration Results**

No.	Peak Name	Retention Time min	Area pA*min	Height pA	Relative Area %	Relative Height %	Amount n.a.
1		4.982	0.206	6.172	0.04	0.10	n.a.
2		5.152	2.347	70.361	0.43	1.15	n.a.
3		5.462	0.199	4.504	0.04	0.07	n.a.
4		5.910	1.721	35.961	0.32	0.59	n.a.
5		6.040	9.253	234.405	1.70	3.84	n.a.
6		6.192	4.763	97.047	0.87	1.59	n.a.
7		7.057	2.317	53.855	0.42	0.88	n.a.
8		7.272	10.305	252.583	1.89	4.14	n.a.
9		7.560	2.198	49.992	0.40	0.82	n.a.
10		7.912	0.227	5.333	0.04	0.09	n.a.
11		8.152	0.404	7.300	0.07	0.12	n.a.
12		8.272	1.315	19.600	0.24	0.32	n.a.
13		8.712	1.350	19.709	0.25	0.32	n.a.
14		9.122	168.244	1447.470	30.84	23.71	n.a.
15		9.245	0.940	25.670	0.17	0.42	n.a.
16		9.580	1.289	23.190	0.24	0.38	n.a.
17		10.228	0.299	3.739	0.05	0.06	n.a.
18		10.383	0.235	2.967	0.04	0.05	n.a.
19		10.665	25.742	428.307	4.72	7.02	n.a.
20		10.957	10.897	176.337	2.00	2.89	n.a.
21		11.258	38.818	520.940	7.12	8.53	n.a.

22		11.525	0.981	13.926	0.18	0.23	n.a.
23		11.745	12.433	200.937	2.28	3.29	n.a.
24		11.932	0.885	9.412	0.16	0.15	n.a.
25		12.473	0.336	4.000	0.06	0.07	n.a.
26		12.793	2.418	32.363	0.44	0.53	n.a.
27		12.965	0.160	2.062	0.03	0.03	n.a.
28		13.220	3.557	36.773	0.65	0.60	n.a.
29		13.772	180.162	1502.133	33.03	24.60	n.a.
30		14.110	0.528	7.284	0.10	0.12	n.a.
31		14.283	0.669	12.497	0.12	0.20	n.a.
32		14.860	10.023	155.122	1.84	2.54	n.a.
33		15.332	0.412	7.023	0.08	0.12	n.a.
34		15.843	0.225	3.230	0.04	0.05	n.a.
35		16.160	0.409	5.213	0.07	0.09	n.a.
36		16.562	0.579	5.623	0.11	0.09	n.a.
37		16.938	4.270	61.167	0.78	1.00	n.a.
38		17.123	0.327	4.706	0.06	0.08	n.a.
39		17.537	9.478	119.609	1.74	1.96	n.a.
40		17.777	0.800	11.847	0.15	0.19	n.a.
41		17.943	0.534	6.904	0.10	0.11	n.a.
42		18.105	0.253	3.149	0.05	0.05	n.a.
43		18.870	14.009	192.650	2.57	3.16	n.a.
44		19.765	0.971	13.218	0.18	0.22	n.a.
45		19.862	0.527	8.264	0.10	0.14	n.a.
46		20.085	0.254	2.829	0.05	0.05	n.a.
47		20.488	0.213	2.818	0.04	0.05	n.a.
48		20.670	1.688	22.535	0.31	0.37	n.a.
49		21.112	1.113	13.742	0.20	0.23	n.a.
50		21.817	0.748	7.429	0.14	0.12	n.a.
51		22.583	1.067	14.435	0.20	0.24	n.a.
52		22.745	1.071	11.793	0.20	0.19	n.a.
53		22.890	0.090	1.415	0.02	0.02	n.a.
54		23.650	5.051	57.918	0.93	0.95	n.a.
55		23.892	3.486	40.766	0.64	0.67	n.a.
56		24.382	0.296	3.642	0.05	0.06	n.a.
57		24.953	0.466	6.236	0.09	0.10	n.a.
58		25.575	1.433	10.125	0.26	0.17	n.a.
59		26.018	0.292	3.559	0.05	0.06	n.a.
60		42.213	0.203	1.233	0.04	0.02	n.a.
<b>Total:</b>			<b>545.486</b>	<b>6105.025</b>	<b>100.00</b>	<b>100.00</b>	

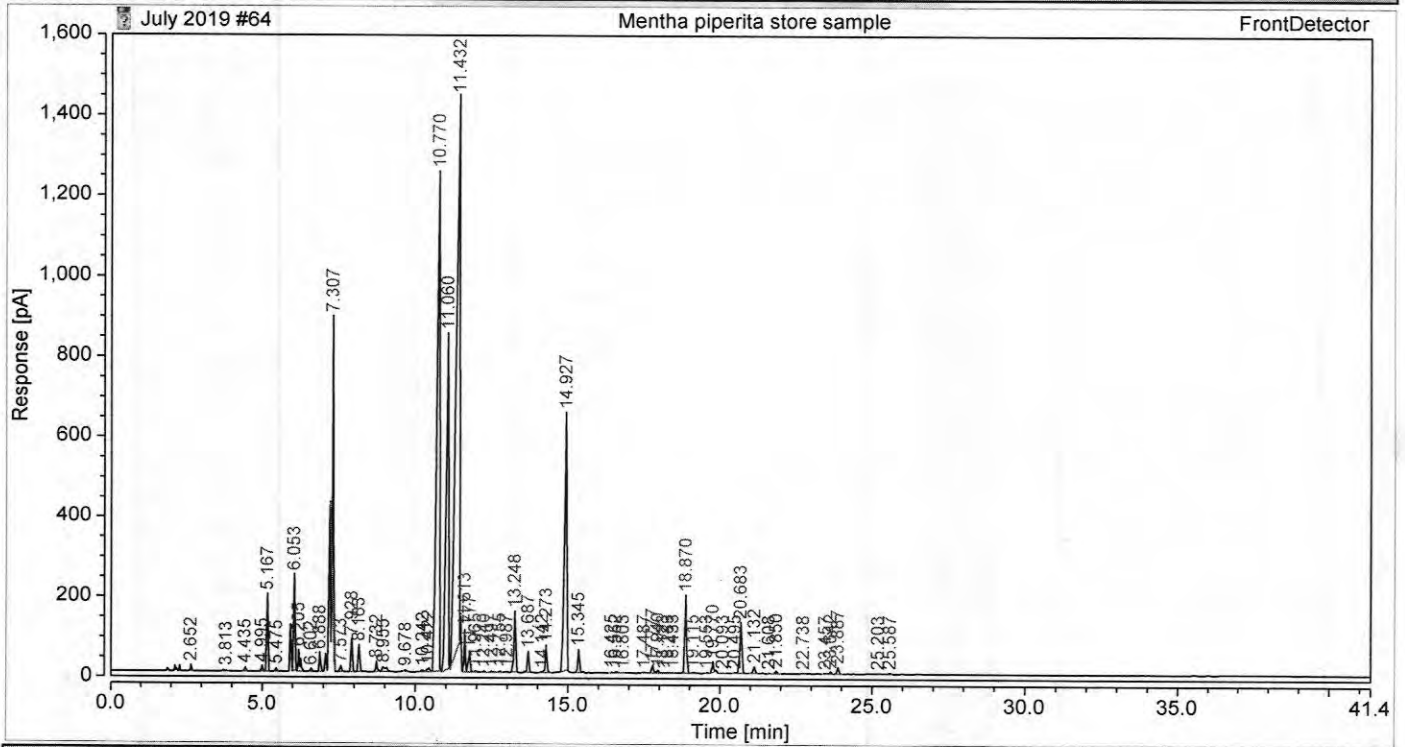


### Chromatogram and Results

**Injection Details**

Injection Name:	Mentha piperita store sample	Run Time (min):	41.36
Vial Number:	63	Injection Volume:	0.10
Injection Type:	Unknown	Channel:	FrontDetector
Calibration Level:		Wavelength:	n.a.
Instrument Method:	Gunjan Manual	Bandwidth:	n.a.
Processing Method:	Basic Quantitative(2)	Dilution Factor:	1.0000
Injection Date/Time:	30/Jul/19 10:45	Sample Weight:	1.0000

**Chromatogram**



**Integration Results**

No.	Peak Name	Retention Time min	Area pA*min	Height pA	Relative Area %	Relative Height %	Amount n.a.
1		2.652	0.469	15.061	0.09	0.23	n.a.
2		3.813	0.299	4.433	0.05	0.07	n.a.
3		4.435	0.365	11.186	0.07	0.17	n.a.
4		4.995	0.427	13.087	0.08	0.20	n.a.
5		5.167	6.388	192.559	1.16	2.93	n.a.
6		5.475	0.383	8.949	0.07	0.14	n.a.
7		6.053	8.673	239.482	1.58	3.65	n.a.
8		6.205	3.359	52.573	0.61	0.80	n.a.
9		6.602	0.259	6.602	0.05	0.10	n.a.
10		6.888	1.993	47.053	0.36	0.72	n.a.
11		7.307	14.173	725.132	2.58	11.04	n.a.
12		7.573	0.590	14.338	0.11	0.22	n.a.
13		7.928	3.550	82.473	0.65	1.26	n.a.
14		8.163	3.378	66.149	0.62	1.01	n.a.
15		8.732	1.030	23.704	0.19	0.36	n.a.
16		8.955	1.609	13.001	0.29	0.20	n.a.
17		9.678	0.153	3.693	0.03	0.06	n.a.
18		10.242	0.474	4.500	0.09	0.07	n.a.
19		10.422	0.892	10.123	0.16	0.15	n.a.
20		10.770	127.304	1243.563	23.19	18.94	n.a.
21		11.060	75.204	835.626	13.70	12.72	n.a.

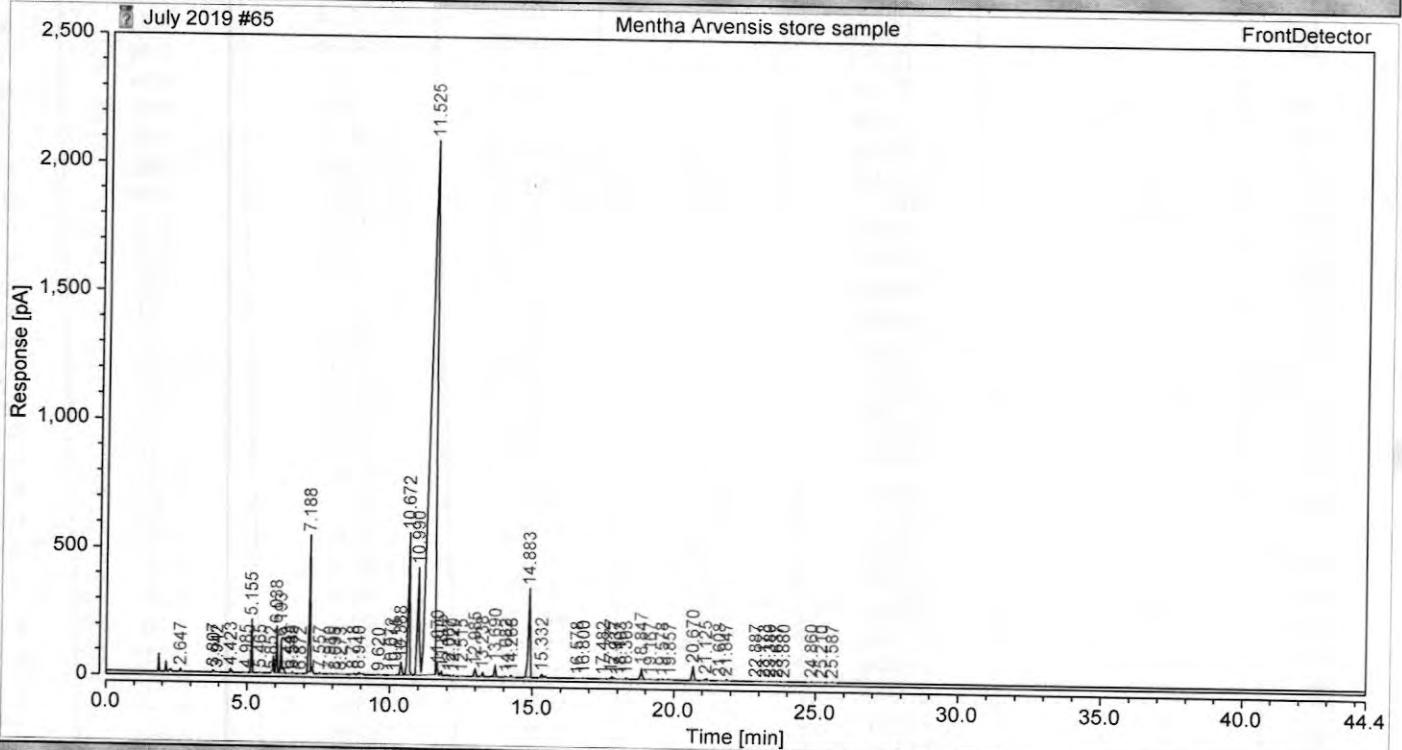
22		11.432	190.362	1366.340	34.67	20.81	n.a.
23		11.613	4.590	104.285	0.84	1.59	n.a.
24		11.777	3.728	49.266	0.68	0.75	n.a.
25		11.965	0.246	2.776	0.04	0.04	n.a.
26		12.240	0.215	2.354	0.04	0.04	n.a.
27		12.497	0.268	3.833	0.05	0.06	n.a.
28		12.755	0.321	4.872	0.06	0.07	n.a.
29		12.987	0.191	3.546	0.03	0.05	n.a.
30		13.248	7.929	150.037	1.44	2.28	n.a.
31		13.687	2.661	50.704	0.48	0.77	n.a.
32		14.142	0.205	2.150	0.04	0.03	n.a.
33		14.273	4.098	67.163	0.75	1.02	n.a.
34		14.927	50.367	643.274	9.17	9.80	n.a.
35		15.345	3.091	56.376	0.56	0.86	n.a.
36		16.425	0.161	2.609	0.03	0.04	n.a.
37		16.552	0.310	2.634	0.06	0.04	n.a.
38		16.803	0.109	1.423	0.02	0.02	n.a.
39		17.487	0.201	2.773	0.04	0.04	n.a.
40		17.777	1.384	18.882	0.25	0.29	n.a.
41		17.940	0.549	6.622	0.10	0.10	n.a.
42		18.123	0.129	1.530	0.02	0.02	n.a.
43		18.283	0.174	2.502	0.03	0.04	n.a.
44		18.433	0.146	2.510	0.03	0.04	n.a.
45		18.870	12.563	192.565	2.29	2.93	n.a.
46		19.115	0.242	2.983	0.04	0.05	n.a.
47		19.553	0.202	2.246	0.04	0.03	n.a.
48		19.770	1.315	25.022	0.24	0.38	n.a.
49		20.093	0.139	1.505	0.03	0.02	n.a.
50		20.495	0.167	2.326	0.03	0.04	n.a.
51		20.683	8.074	125.907	1.47	1.92	n.a.
52		21.132	1.348	16.973	0.25	0.26	n.a.
53		21.608	0.106	1.553	0.02	0.02	n.a.
54		21.850	0.417	6.240	0.08	0.10	n.a.
55		22.738	0.103	1.364	0.02	0.02	n.a.
56		23.457	0.118	1.483	0.02	0.02	n.a.
57		23.642	0.424	5.338	0.08	0.08	n.a.
58		23.887	1.090	15.991	0.20	0.24	n.a.
59		25.203	0.106	1.086	0.02	0.02	n.a.
60		25.587	0.240	2.835	0.04	0.04	n.a.
<b>Total:</b>			<b>549.060</b>	<b>6567.163</b>	<b>100.00</b>	<b>100.00</b>	

### Chromatogram and Results

**Injection Details**

Injection Name:	Mentha Arvensis store sample	Run Time (min):	44.38
Vial Number:	64	Injection Volume:	0.10
Injection Type:	Unknown	Channel:	FrontDetector
Calibration Level:		Wavelength:	n.a.
Instrument Method:	Gunjan Manual	Bandwidth:	n.a.
Processing Method:	Basic Quantitative(3)	Dilution Factor:	1.0000
Injection Date/Time:	30/Jul/19 11:48	Sample Weight:	1.0000

**Chromatogram**



**Integration Results**

No.	Peak Name	Retention Time min	Area pA*min	Height pA	Relative Area %	Relative Height %	Amount
1		2.647	0.325	11.475	0.06	0.23	n.a.
2		3.807	0.243	8.528	0.04	0.17	n.a.
3		3.942	0.100	2.902	0.02	0.06	n.a.
4		4.423	0.368	13.750	0.06	0.28	n.a.
5		4.985	0.199	4.042	0.03	0.08	n.a.
6		5.155	6.736	208.988	1.15	4.28	n.a.
7		5.465	0.181	5.405	0.03	0.11	n.a.
8		5.852	0.386	2.199	0.07	0.05	n.a.
9		6.038	6.484	180.849	1.11	3.70	n.a.
10		6.193	6.469	130.513	1.10	2.67	n.a.
11		6.443	0.096	2.480	0.02	0.05	n.a.
12		6.585	0.241	5.142	0.04	0.11	n.a.
13		6.872	0.091	2.098	0.02	0.04	n.a.
14		7.188	21.924	531.114	3.74	10.88	n.a.
15		7.557	0.274	6.695	0.05	0.14	n.a.
16		7.910	0.150	3.561	0.03	0.07	n.a.
17		8.095	0.227	3.296	0.04	0.07	n.a.
18		8.273	0.081	1.451	0.01	0.03	n.a.
19		8.718	0.300	6.687	0.05	0.14	n.a.
20		8.940	0.194	5.658	0.03	0.12	n.a.
21		9.620	0.151	1.446	0.03	0.03	n.a.

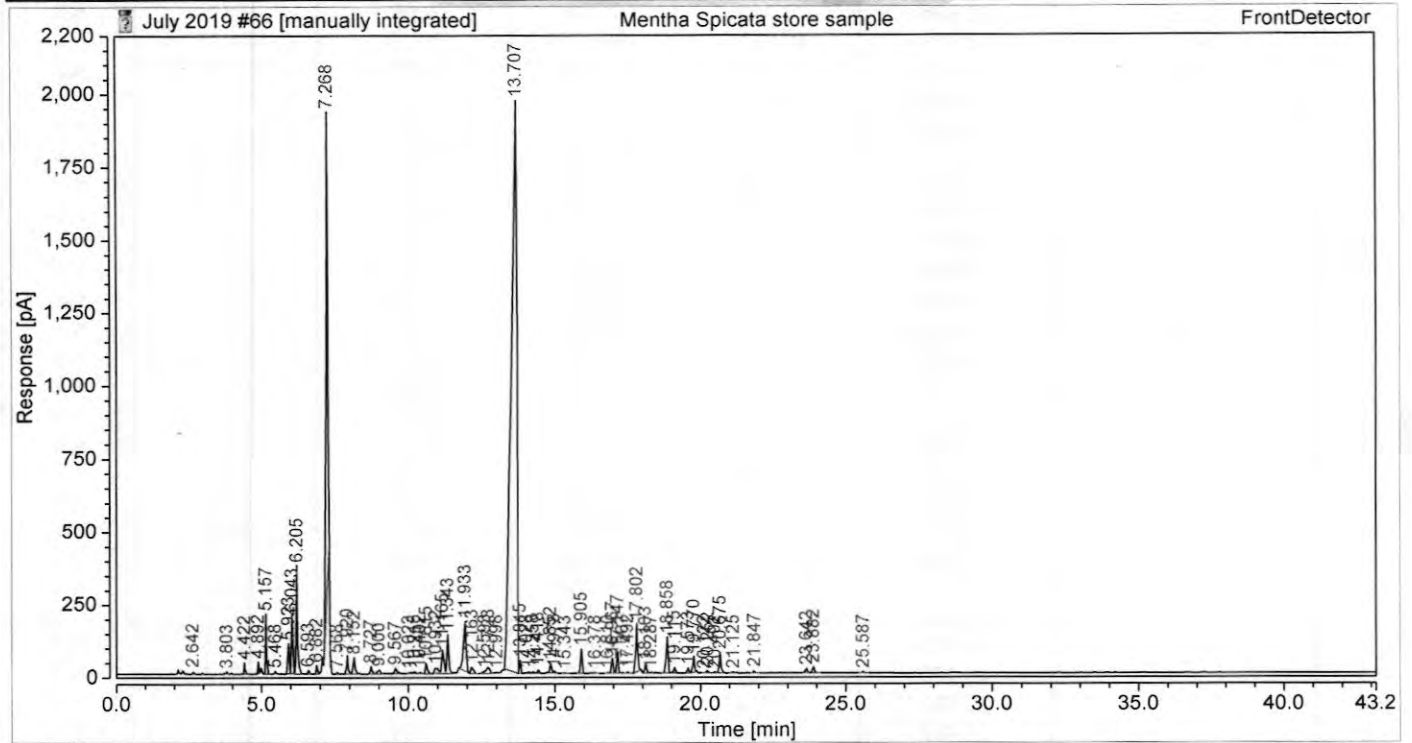
22								
23		10.072	0.087	0.867	0.01	0.02	n.a.	
24		10.215	0.147	1.557	0.03	0.03	n.a.	
25		10.388	3.755	49.706	0.64	1.02	n.a.	
26		10.672	35.878	553.556	6.12	11.34	n.a.	
27		10.990	31.844	418.774	5.43	8.58	n.a.	
28		11.525	428.502	2076.423	73.11	42.52	n.a.	
29		11.670	0.715	3.880	0.12	0.08	n.a.	
30		11.805	1.130	17.231	0.19	0.35	n.a.	
31		12.067	0.250	0.725	0.04	0.01	n.a.	
32		12.220	0.208	3.992	0.04	0.08	n.a.	
33		12.515	0.142	1.752	0.02	0.04	n.a.	
34		12.985	1.553	29.820	0.26	0.61	n.a.	
35		13.238	0.708	14.856	0.12	0.30	n.a.	
36		13.690	2.348	45.030	0.40	0.92	n.a.	
37		14.082	0.253	4.245	0.04	0.09	n.a.	
38		14.268	0.479	7.873	0.08	0.16	n.a.	
39		14.883	21.333	346.024	3.64	7.09	n.a.	
40		15.332	0.770	11.830	0.13	0.24	n.a.	
41		16.578	0.025	0.337	0.00	0.01	n.a.	
42		16.800	0.231	3.621	0.04	0.07	n.a.	
43		17.482	0.089	1.296	0.02	0.03	n.a.	
44		17.777	0.850	12.216	0.14	0.25	n.a.	
45		17.937	0.202	2.704	0.03	0.06	n.a.	
46		18.103	0.031	0.529	0.01	0.01	n.a.	
47		18.303	0.280	4.541	0.05	0.09	n.a.	
48		18.847	2.578	40.375	0.44	0.83	n.a.	
49		19.167	0.320	2.234	0.05	0.05	n.a.	
50		19.578	0.209	2.107	0.04	0.04	n.a.	
51		19.857	0.290	2.442	0.05	0.05	n.a.	
52		20.670	3.391	53.703	0.58	1.10	n.a.	
53		21.125	0.844	11.415	0.14	0.23	n.a.	
54		21.608	0.107	1.466	0.02	0.03	n.a.	
55		21.847	0.340	5.214	0.06	0.11	n.a.	
56		22.887	0.095	1.375	0.02	0.03	n.a.	
57		23.173	0.010	0.110	0.00	0.00	n.a.	
58		23.380	0.107	0.916	0.02	0.02	n.a.	
59		23.637	0.096	1.249	0.02	0.03	n.a.	
60		23.880	0.087	1.333	0.01	0.03	n.a.	
61		24.860	0.261	3.496	0.04	0.07	n.a.	
62		25.210	0.086	0.836	0.01	0.02	n.a.	
		25.587	0.243	2.985	0.04	0.06	n.a.	
<b>Total:</b>			<b>586.094</b>	<b>4882.917</b>	<b>100.00</b>	<b>100.00</b>		

### Chromatogram and Results

**Injection Details**

Injection Name:	Mentha Spicata store sample	Run Time (min):	43.17
Vial Number:	65	Injection Volume:	0.10
Injection Type:	Unknown	Channel:	FrontDetector
Calibration Level:		Wavelength:	n.a.
Instrument Method:	Gunjan Manual	Bandwidth:	n.a.
Processing Method:	Basic Quantitative(4)	Dilution Factor:	1.0000
Injection Date/Time:	30/Jul/19 12:35	Sample Weight:	1.0000

**Chromatogram**



**Integration Results**

No.	Peak Name	Retention Time min	Area pA*min	Height pA	Relative Area %	Relative Height %	Amount n.a.
1		2.642	0.376	10.189	0.06	0.17	n.a.
2		3.803	0.210	7.204	0.03	0.12	n.a.
3		4.422	1.194	37.542	0.18	0.61	n.a.
4		4.892	1.235	39.753	0.19	0.65	n.a.
5		5.157	7.498	204.893	1.12	3.34	n.a.
6		5.468	0.297	8.091	0.04	0.13	n.a.
7		5.923	4.410	102.865	0.66	1.68	n.a.
8		6.043	8.585	199.786	1.29	3.26	n.a.
9		6.205	19.580	371.512	2.93	6.05	n.a.
10		6.593	0.599	12.624	0.09	0.21	n.a.
11		6.882	1.431	27.802	0.21	0.45	n.a.
12		7.268	105.994	1577.966	15.87	25.72	n.a.
13		7.568	0.378	8.786	0.06	0.14	n.a.
14		7.920	2.936	62.256	0.44	1.01	n.a.
15		8.152	3.429	54.693	0.51	0.89	n.a.
16		8.727	1.406	24.272	0.21	0.40	n.a.
17		9.000	1.480	12.586	0.22	0.21	n.a.
18		9.567	1.636	17.526	0.25	0.29	n.a.
19		10.023	0.379	4.969	0.06	0.08	n.a.
20		10.215	0.954	6.878	0.14	0.11	n.a.
21		10.402	0.585	6.300	0.09	0.10	n.a.

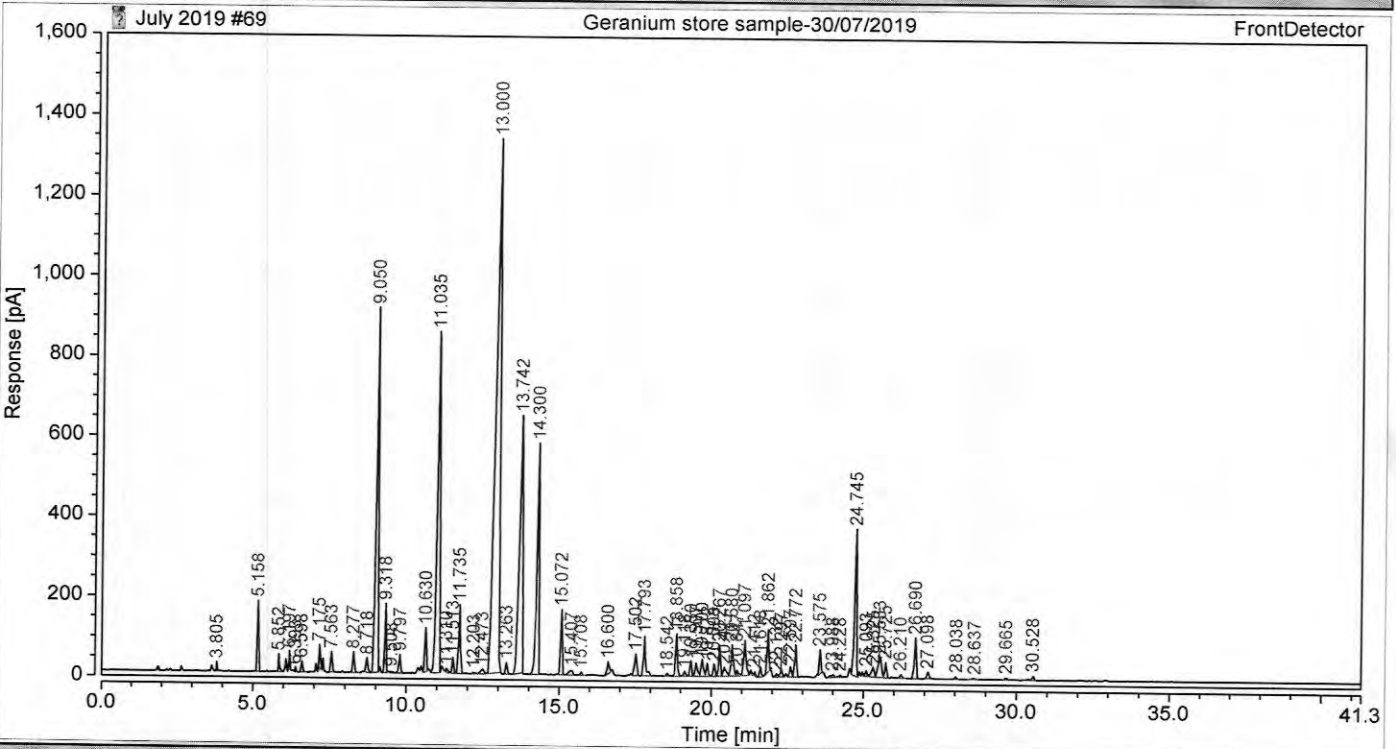
22		10.615	2.392	35.069	0.36	0.57	n.a.
23		10.932	2.367	20.032	0.35	0.33	n.a.
24		11.165	7.801	78.622	1.17	1.28	n.a.
25		11.343	9.308	132.254	1.39	2.16	n.a.
26		11.933	15.448	168.223	2.31	2.74	n.a.
27		12.163	1.827	23.104	0.27	0.38	n.a.
28		12.593	0.550	7.151	0.08	0.12	n.a.
29		12.728	2.977	23.730	0.45	0.39	n.a.
30		12.998	0.349	2.774	0.05	0.05	n.a.
31		13.707	403.316	1959.359	60.39	31.93	n.a.
32		13.815	1.723	42.809	0.26	0.70	n.a.
33		14.028	0.724	6.011	0.11	0.10	n.a.
34		14.258	0.460	6.117	0.07	0.10	n.a.
35		14.418	0.749	14.401	0.11	0.23	n.a.
36		14.852	1.806	31.546	0.27	0.51	n.a.
37		14.978	0.446	7.918	0.07	0.13	n.a.
38		15.343	0.352	2.731	0.05	0.04	n.a.
39		15.905	4.800	82.357	0.72	1.34	n.a.
40		16.378	0.334	3.910	0.05	0.06	n.a.
41		16.810	0.307	4.683	0.05	0.08	n.a.
42		16.967	3.113	51.164	0.47	0.83	n.a.
43		17.147	4.324	75.109	0.65	1.22	n.a.
44		17.307	0.336	3.729	0.05	0.06	n.a.
45		17.492	0.458	6.694	0.07	0.11	n.a.
46		17.802	10.449	162.577	1.56	2.65	n.a.
47		18.103	1.919	33.033	0.29	0.54	n.a.
48		18.287	0.305	3.356	0.05	0.05	n.a.
49		18.858	8.707	122.558	1.30	2.00	n.a.
50		19.115	1.443	18.248	0.22	0.30	n.a.
51		19.573	1.140	16.512	0.17	0.27	n.a.
52		19.770	3.129	53.803	0.47	0.88	n.a.
53		20.122	0.128	1.797	0.02	0.03	n.a.
54		20.252	0.714	11.506	0.11	0.19	n.a.
55		20.492	0.266	3.717	0.04	0.06	n.a.
56		20.675	4.708	68.463	0.71	1.12	n.a.
57		21.125	0.417	2.657	0.06	0.04	n.a.
58		21.847	0.613	8.785	0.09	0.14	n.a.
59		23.642	1.120	15.163	0.17	0.25	n.a.
60		23.882	1.464	21.471	0.22	0.35	n.a.
61		25.587	0.444	4.620	0.07	0.08	n.a.
<b>Total:</b>			<b>667.820</b>	<b>6136.254</b>	<b>100.00</b>	<b>100.00</b>	

### Chromatogram and Results

**Injection Details**

Injection Name:	Geranium store sample-30/07/2019	Run Time (min):	41.31
Vial Number:	68	Injection Volume:	0.10
Injection Type:	Unknown	Channel:	FrontDetector
Calibration Level:		Wavelength:	n.a.
Instrument Method:	Gunjan Manual	Bandwidth:	n.a.
Processing Method:	Basic Quantitative(6)	Dilution Factor:	1.0000
Injection Date/Time:	30/Jul/19 15:40	Sample Weight:	1.0000

**Chromatogram**



**Integration Results**

No.	Peak Name	Retention Time min	Area pA*min	Height pA	Relative Area %	Relative Height %	Amount n.a.
1		3.805	0.636	21.971	0.10	0.30	n.a.
2		5.158	5.829	175.931	0.89	2.40	n.a.
3		5.852	1.740	42.859	0.27	0.59	n.a.
4		6.197	1.056	44.050	0.16	0.60	n.a.
5		6.393	0.455	11.384	0.07	0.16	n.a.
6		6.598	1.294	27.163	0.20	0.37	n.a.
7		7.175	2.588	59.089	0.39	0.81	n.a.
8		7.563	2.052	49.219	0.31	0.67	n.a.
9		8.277	3.070	50.095	0.47	0.68	n.a.
10		8.718	2.227	34.437	0.34	0.47	n.a.
11		9.050	73.153	908.914	11.16	12.42	n.a.
12		9.318	7.582	171.881	1.16	2.35	n.a.
13		9.508	0.364	6.516	0.06	0.09	n.a.
14		9.797	2.550	44.743	0.39	0.61	n.a.
15		10.630	6.033	108.296	0.92	1.48	n.a.
16		11.035	68.182	849.421	10.40	11.60	n.a.
17		11.310	0.614	8.652	0.09	0.12	n.a.
18		11.513	2.178	39.131	0.33	0.53	n.a.
19		11.735	10.589	170.221	1.61	2.33	n.a.
20		12.203	0.334	4.595	0.05	0.06	n.a.
21		12.473	1.434	11.203	0.22	0.15	n.a.

22		13.000	212.103	1326.609	32.35	18.12	n.a.
23		13.263	1.556	28.024	0.24	0.38	n.a.
24		13.742	64.397	639.145	9.82	8.73	n.a.
25		14.300	44.009	574.819	6.71	7.85	n.a.
26		15.072	9.183	161.923	1.40	2.21	n.a.
27		15.407	1.553	13.935	0.24	0.19	n.a.
28		15.708	0.532	8.234	0.08	0.11	n.a.
29		16.600	2.352	29.064	0.36	0.40	n.a.
30		17.502	4.171	52.482	0.64	0.72	n.a.
31		17.793	7.276	97.141	1.11	1.33	n.a.
32		18.542	0.399	6.420	0.06	0.09	n.a.
33		18.858	7.150	104.486	1.09	1.43	n.a.
34		19.118	0.786	12.196	0.12	0.17	n.a.
35		19.330	2.354	37.979	0.36	0.52	n.a.
36		19.507	2.762	33.533	0.42	0.46	n.a.
37		19.700	3.405	41.239	0.52	0.56	n.a.
38		19.872	2.076	31.869	0.32	0.44	n.a.
39		20.093	2.021	30.108	0.31	0.41	n.a.
40		20.267	4.563	76.326	0.70	1.04	n.a.
41		20.427	2.188	21.658	0.33	0.30	n.a.
42		20.680	6.236	75.805	0.95	1.04	n.a.
43		20.847	0.712	10.172	0.11	0.14	n.a.
44		21.097	7.088	86.306	1.08	1.18	n.a.
45		21.412	0.434	9.773	0.07	0.13	n.a.
46		21.618	1.528	23.843	0.23	0.33	n.a.
47		21.862	7.381	105.099	1.13	1.44	n.a.
48		22.132	0.570	8.299	0.09	0.11	n.a.
49		22.297	1.494	19.227	0.23	0.26	n.a.
50		22.597	1.573	25.160	0.24	0.34	n.a.
51		22.772	4.890	77.810	0.75	1.06	n.a.
52		23.575	3.120	56.825	0.48	0.78	n.a.
53		23.988	0.810	7.188	0.12	0.10	n.a.
54		24.228	0.568	5.952	0.09	0.08	n.a.
55		24.745	27.835	364.827	4.24	4.98	n.a.
56		25.093	0.897	15.023	0.14	0.21	n.a.
57		25.325	2.580	23.224	0.39	0.32	n.a.
58		25.533	6.457	48.438	0.98	0.66	n.a.
59		25.725	2.390	36.940	0.36	0.50	n.a.
60		26.210	0.661	8.625	0.10	0.12	n.a.
61		26.690	6.536	100.932	1.00	1.38	n.a.
62		27.098	1.171	16.308	0.18	0.22	n.a.
63		28.038	0.460	6.998	0.07	0.10	n.a.
64		28.637	0.349	2.871	0.05	0.04	n.a.
65		29.665	0.422	5.927	0.06	0.08	n.a.
66		30.528	0.768	11.508	0.12	0.16	n.a.
<b>Total:</b>			<b>655.729</b>	<b>7320.039</b>	<b>100.00</b>	<b>100.00</b>	

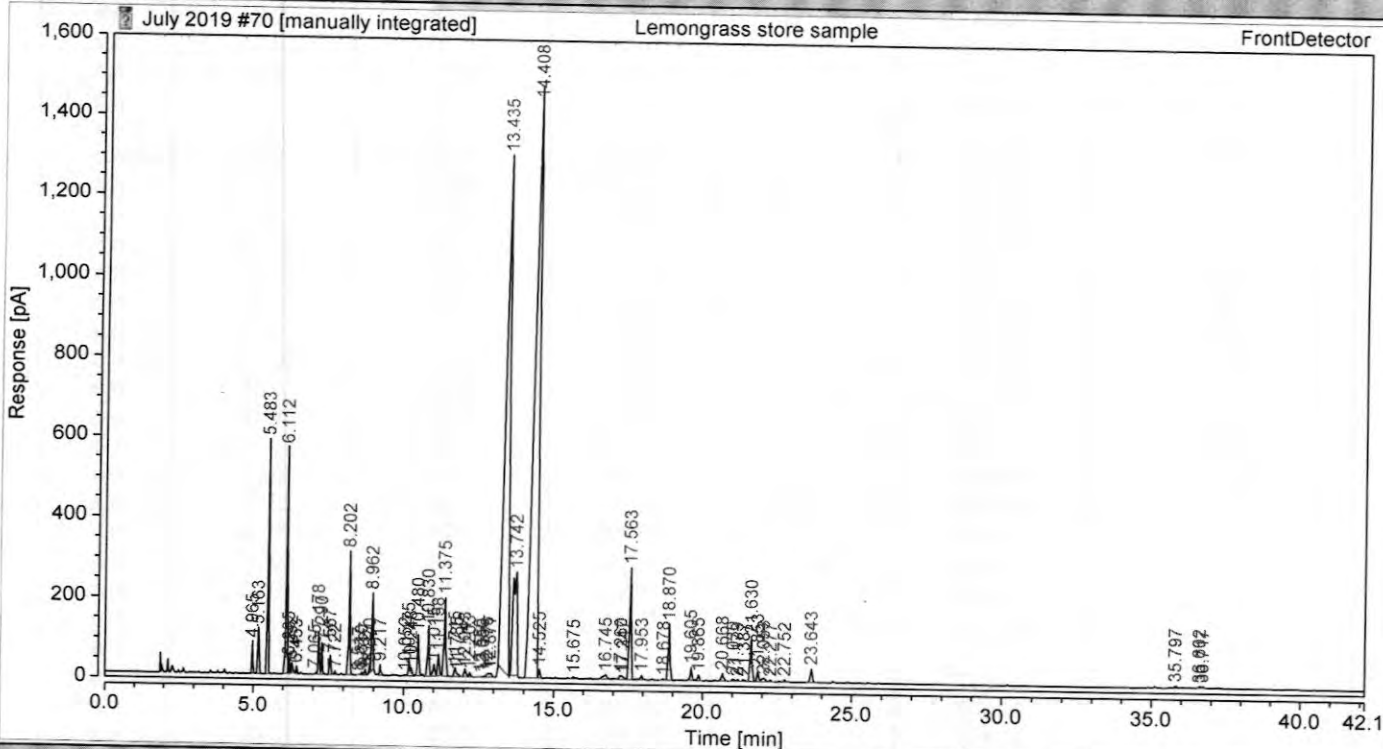


### Chromatogram and Results

#### Injection Details

Injection Name:	Lemongrass store sample	Run Time (min):	42.15
Vial Number:	69	Injection Volume:	0.10
Injection Type:	Unknown	Channel:	FrontDetector
Calibration Level:		Wavelength:	n.a.
Instrument Method:	Gunjan Manual	Bandwidth:	n.a.
Processing Method:	Basic Quantitative(7)	Dilution Factor:	1.0000
Injection Date/Time:	31/Jul/19 09:20	Sample Weight:	1.0000

#### Chromatogram



#### Integration Results

No.	Peak Name	Retention Time min	Area pA*min	Height pA	Relative Area %	Relative Height %	Amount n.a.
1		4.965	2.572	80.127	0.39	1.21	n.a.
2		5.163	3.709	113.345	0.57	1.71	n.a.
3		5.483	20.208	583.521	3.08	8.79	n.a.
4		6.112	22.962	562.549	3.50	8.47	n.a.
5		6.205	1.261	37.313	0.19	0.56	n.a.
6		6.292	0.748	23.668	0.11	0.36	n.a.
7		6.453	0.723	18.955	0.11	0.29	n.a.
8		7.065	0.282	6.366	0.04	0.10	n.a.
9		7.178	4.698	106.068	0.72	1.60	n.a.
10		7.290	3.110	77.026	0.47	1.16	n.a.
11		7.567	1.915	46.249	0.29	0.70	n.a.
12		7.722	0.387	9.169	0.06	0.14	n.a.
13		8.202	13.969	306.918	2.13	4.62	n.a.
14		8.517	0.076	1.852	0.01	0.03	n.a.
15		8.610	0.327	7.348	0.05	0.11	n.a.
16		8.727	0.683	13.892	0.10	0.21	n.a.
17		8.870	0.748	18.973	0.11	0.29	n.a.
18		8.962	8.753	191.209	1.33	2.88	n.a.
19		9.217	1.162	25.522	0.18	0.38	n.a.
20		10.052	0.257	2.768	0.04	0.04	n.a.
21		10.175	2.464	39.273	0.38	0.59	n.a.

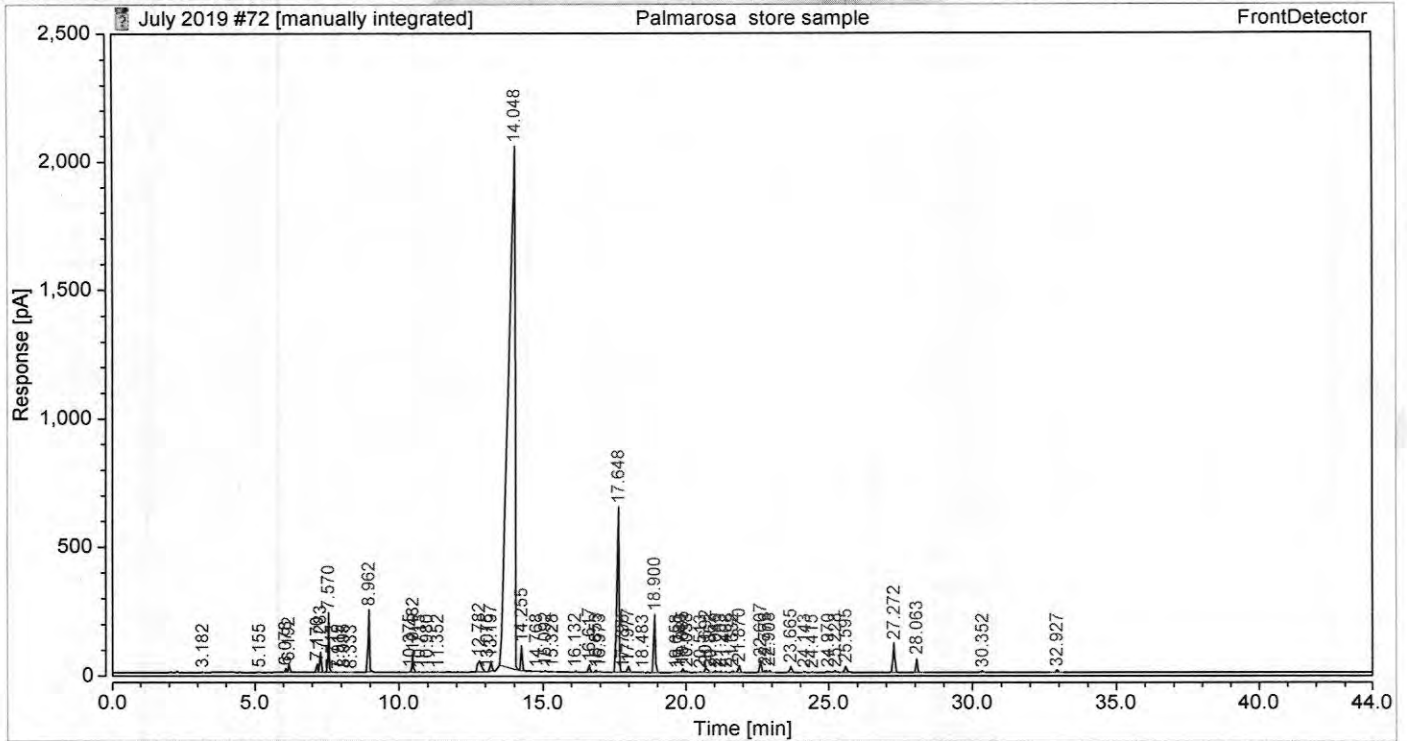
22		10.248	0.476	12.175	0.07	0.18	n.a.
23		10.480	4.977	100.347	0.76	1.51	n.a.
24		10.830	6.731	123.428	1.03	1.86	n.a.
25		11.015	1.835	27.626	0.28	0.42	n.a.
26		11.158	2.839	52.175	0.43	0.79	n.a.
27		11.375	11.050	193.324	1.68	2.91	n.a.
28		11.715	1.385	20.163	0.21	0.30	n.a.
29		11.785	0.407	6.446	0.06	0.10	n.a.
30		12.043	1.198	19.056	0.18	0.29	n.a.
31		12.203	0.630	10.011	0.10	0.15	n.a.
32		12.550	0.078	1.082	0.01	0.02	n.a.
33		12.650	0.303	2.592	0.05	0.04	n.a.
34		12.778	0.679	7.657	0.10	0.12	n.a.
35		12.877	1.142	11.625	0.17	0.18	n.a.
36		13.435	191.461	1290.263	29.18	19.43	n.a.
37		13.742	39.429	255.851	6.01	3.85	n.a.
38		14.408	249.260	1466.687	37.99	22.09	n.a.
39		14.525	0.909	21.667	0.14	0.33	n.a.
40		15.675	0.323	4.366	0.05	0.07	n.a.
41		16.745	1.323	9.423	0.20	0.14	n.a.
42		17.260	1.173	10.008	0.18	0.15	n.a.
43		17.347	0.288	5.470	0.04	0.08	n.a.
44		17.563	17.431	277.837	2.66	4.18	n.a.
45		17.953	0.790	10.323	0.12	0.16	n.a.
46		18.678	0.264	4.095	0.04	0.06	n.a.
47		18.870	9.069	139.267	1.38	2.10	n.a.
48		19.605	1.776	32.120	0.27	0.48	n.a.
49		19.865	0.837	13.918	0.13	0.21	n.a.
50		20.668	1.295	18.536	0.20	0.28	n.a.
51		21.030	0.503	6.352	0.08	0.10	n.a.
52		21.173	0.315	3.810	0.05	0.06	n.a.
53		21.387	0.409	4.956	0.06	0.07	n.a.
54		21.630	7.475	110.549	1.14	1.67	n.a.
55		21.853	1.652	26.252	0.25	0.40	n.a.
56		22.053	1.373	10.308	0.21	0.16	n.a.
57		22.277	0.305	4.734	0.05	0.07	n.a.
58		22.752	0.358	5.847	0.05	0.09	n.a.
59		23.643	2.466	34.011	0.38	0.51	n.a.
60		35.797	0.430	5.579	0.07	0.08	n.a.
61		36.602	0.277	3.573	0.04	0.05	n.a.
62		36.717	0.270	3.548	0.04	0.05	n.a.
<b>Total:</b>			<b>656.206</b>	<b>6639.167</b>	<b>100.00</b>	<b>100.00</b>	

### Chromatogram and Results

**Injection Details**

Injection Name:	Palmarosa store sample	Run Time (min):	43.96
Vial Number:	71	Injection Volume:	0.10
Injection Type:	Unknown	Channel:	FrontDetector
Calibration Level:		Wavelength:	n.a.
Instrument Method:	Gunjan Manual	Bandwidth:	n.a.
Processing Method:	Basic Quantitative(8)	Dilution Factor:	1.0000
Injection Date/Time:	31/Jul/19 10:51	Sample Weight:	1.0000

**Chromatogram**



**Integration Results**

No.	Peak Name	Retention Time min	Area pA*min	Height pA	Relative Area %	Relative Height %	Amount n.a.
1		3.182	0.144	5.206	0.02	0.12	n.a.
2		5.155	0.156	4.539	0.02	0.11	n.a.
3		6.078	0.686	14.086	0.10	0.33	n.a.
4		6.192	1.198	30.592	0.17	0.71	n.a.
5		7.170	1.326	32.063	0.19	0.75	n.a.
6		7.283	3.368	76.067	0.48	1.77	n.a.
7		7.570	9.478	229.386	1.35	5.34	n.a.
8		7.713	0.123	3.008	0.02	0.07	n.a.
9		7.915	0.025	0.476	0.00	0.01	n.a.
10		8.095	0.296	4.255	0.04	0.10	n.a.
11		8.333	0.057	0.771	0.01	0.02	n.a.
12		8.962	11.765	240.569	1.68	5.60	n.a.
13		10.375	0.228	4.340	0.03	0.10	n.a.
14		10.482	3.415	67.711	0.49	1.58	n.a.
15		10.713	0.133	1.950	0.02	0.05	n.a.
16		10.980	0.137	1.914	0.02	0.04	n.a.
17		11.352	0.132	2.194	0.02	0.05	n.a.
18		12.782	6.724	44.659	0.96	1.04	n.a.
19		13.075	0.128	2.321	0.02	0.05	n.a.
20		13.197	2.098	37.465	0.30	0.87	n.a.
21		14.048	551.568	2033.686	78.72	47.36	n.a.

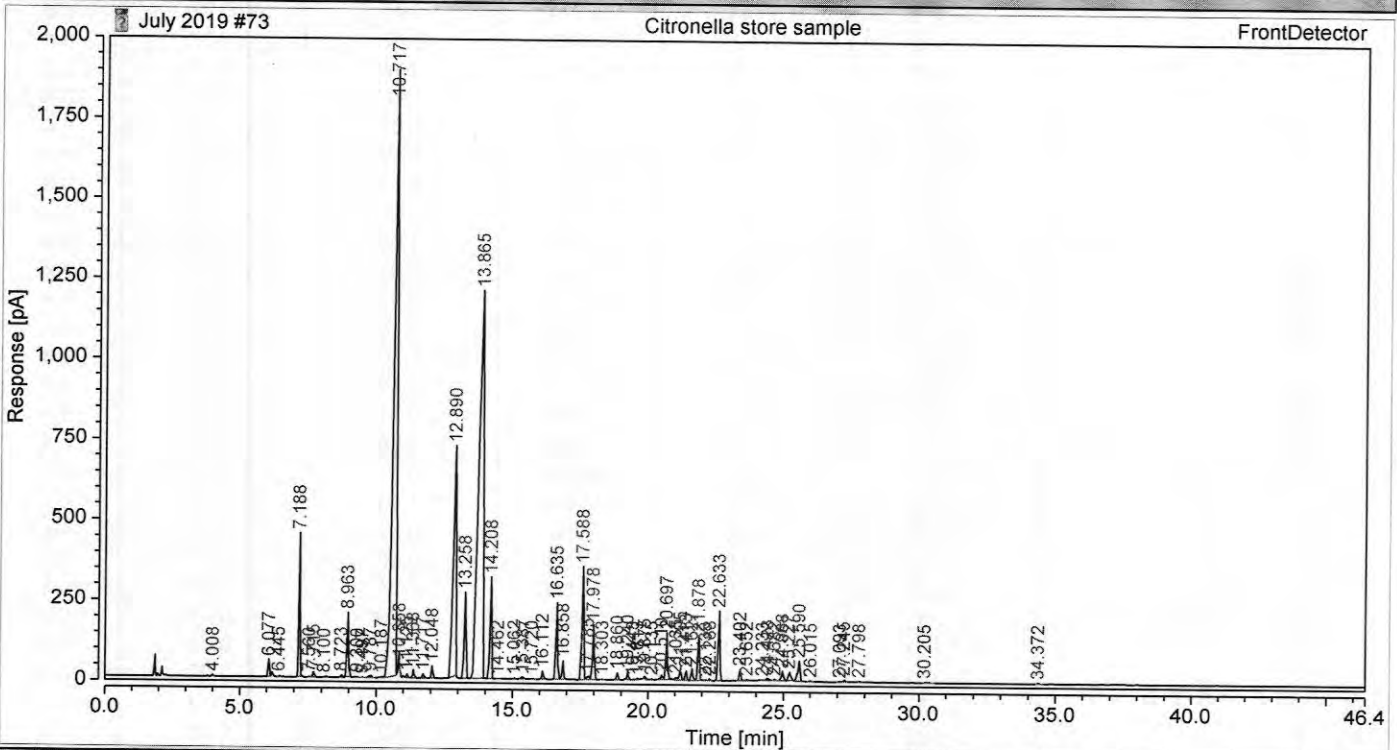
22		14.255	5.345	96.092	0.76	2.24	n.a.
23		14.768	0.133	1.502	0.02	0.03	n.a.
24		15.092	0.441	7.983	0.06	0.19	n.a.
25		15.328	0.151	2.304	0.02	0.05	n.a.
26		16.132	0.339	6.067	0.05	0.14	n.a.
27		16.617	1.829	27.953	0.26	0.65	n.a.
28		16.853	0.528	7.294	0.08	0.17	n.a.
29		16.973	0.217	3.920	0.03	0.09	n.a.
30		17.648	52.477	639.804	7.49	14.90	n.a.
31		17.798	0.293	2.449	0.04	0.06	n.a.
32		17.977	1.801	25.402	0.26	0.59	n.a.
33		18.483	0.143	2.313	0.02	0.05	n.a.
34		18.900	14.398	222.930	2.05	5.19	n.a.
35		19.658	0.072	1.291	0.01	0.03	n.a.
36		19.780	0.083	1.750	0.01	0.04	n.a.
37		19.885	1.086	14.730	0.16	0.34	n.a.
38		20.038	0.356	6.163	0.05	0.14	n.a.
39		20.513	0.168	2.234	0.02	0.05	n.a.
40		20.692	2.073	19.877	0.30	0.46	n.a.
41		20.862	0.084	1.803	0.01	0.04	n.a.
42		21.040	0.594	6.666	0.08	0.16	n.a.
43		21.203	0.400	5.849	0.06	0.14	n.a.
44		21.408	0.303	4.153	0.04	0.10	n.a.
45		21.632	0.555	8.270	0.08	0.19	n.a.
46		21.870	1.921	26.103	0.27	0.61	n.a.
47		22.607	3.051	46.523	0.44	1.08	n.a.
48		22.773	0.870	11.897	0.12	0.28	n.a.
49		22.908	0.533	8.684	0.08	0.20	n.a.
50		23.665	1.783	23.048	0.25	0.54	n.a.
51		24.143	0.258	4.014	0.04	0.09	n.a.
52		24.415	0.143	1.780	0.02	0.04	n.a.
53		24.970	0.372	5.653	0.05	0.13	n.a.
54		25.228	0.422	5.605	0.06	0.13	n.a.
55		25.595	1.989	23.351	0.28	0.54	n.a.
56		27.272	7.506	113.278	1.07	2.64	n.a.
57		28.063	3.556	54.208	0.51	1.26	n.a.
58		30.352	0.567	4.842	0.08	0.11	n.a.
59		32.927	0.631	8.866	0.09	0.21	n.a.
<b>Total:</b>			<b>700.653</b>	<b>4293.911</b>	<b>100.00</b>	<b>100.00</b>	

### Chromatogram and Results

**Injection Details**

Injection Name:	Citronella store sample	Run Time (min):	46.44
Vial Number:	72	Injection Volume:	0.10
Injection Type:	Unknown	Channel:	FrontDetector
Calibration Level:		Wavelength:	n.a.
Instrument Method:	Gunjan Manual	Bandwidth:	n.a.
Processing Method:	Basic Quantitative(9)	Dilution Factor:	1.0000
Injection Date/Time:	31/Jul/19 11:38	Sample Weight:	1.0000

**Chromatogram**



**Integration Results**

No.	Peak Name	Retention Time min	Area pA*min	Height pA	Relative Area %	Relative Height %	Amount n.a.
1		4.008	0.151	4.187	0.02	0.06	n.a.
2		6.077	2.030	53.472	0.27	0.77	n.a.
3		6.445	0.263	6.460	0.03	0.09	n.a.
4		7.188	19.006	446.117	2.51	6.42	n.a.
5		7.560	0.253	5.606	0.03	0.08	n.a.
6		7.715	0.836	15.410	0.11	0.22	n.a.
7		8.100	0.285	2.877	0.04	0.04	n.a.
8		8.723	0.397	8.096	0.05	0.12	n.a.
9		8.963	11.516	198.569	1.52	2.86	n.a.
10		9.300	0.390	5.088	0.05	0.07	n.a.
11		9.497	0.057	1.040	0.01	0.01	n.a.
12		9.787	0.753	7.620	0.10	0.11	n.a.
13		10.187	0.156	2.073	0.02	0.03	n.a.
14		10.717	269.041	1882.694	35.47	27.10	n.a.
15		10.858	0.523	2.523	0.07	0.04	n.a.
16		11.125	0.556	11.329	0.07	0.16	n.a.
17		11.368	1.413	25.350	0.19	0.36	n.a.
18		11.717	0.708	11.813	0.09	0.17	n.a.
19		12.048	1.901	37.470	0.25	0.54	n.a.
20		12.890	82.476	712.861	10.87	10.26	n.a.
21		13.258	15.092	265.218	1.99	3.82	n.a.

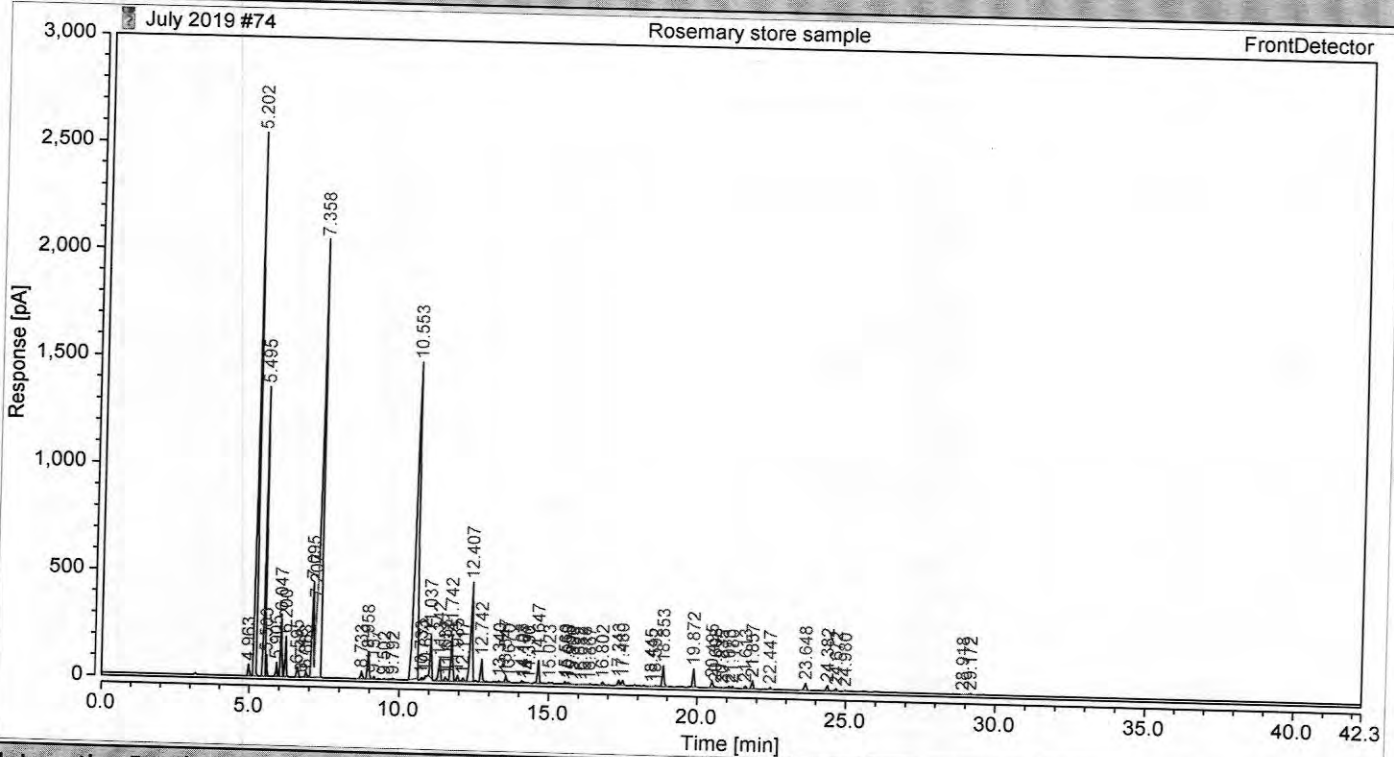
22		13.865	214.470	1201.609	28.28	17.29	n.a.
23		14.208	19.808	313.117	2.61	4.51	n.a.
24		14.462	0.120	1.578	0.02	0.02	n.a.
25		15.062	0.145	2.680	0.02	0.04	n.a.
26		15.387	0.721	7.828	0.10	0.11	n.a.
27		15.720	0.178	2.462	0.02	0.04	n.a.
28		16.112	1.397	23.847	0.18	0.34	n.a.
29		16.635	15.631	235.173	2.06	3.38	n.a.
30		16.858	3.144	54.914	0.41	0.79	n.a.
31		17.588	22.692	349.469	2.99	5.03	n.a.
32		17.785	1.067	10.639	0.14	0.15	n.a.
33		17.978	10.617	168.487	1.40	2.42	n.a.
34		18.303	0.225	3.703	0.03	0.05	n.a.
35		18.860	1.429	21.014	0.19	0.30	n.a.
36		19.240	1.317	22.053	0.17	0.32	n.a.
37		19.443	0.169	2.769	0.02	0.04	n.a.
38		19.613	0.303	4.259	0.04	0.06	n.a.
39		19.875	0.268	7.581	0.04	0.11	n.a.
40		20.135	0.135	2.436	0.02	0.04	n.a.
41		20.510	1.110	12.962	0.15	0.19	n.a.
42		20.697	9.090	142.827	1.20	2.06	n.a.
43		21.035	0.937	8.016	0.12	0.12	n.a.
44		21.205	2.354	33.404	0.31	0.48	n.a.
45		21.413	1.962	29.038	0.26	0.42	n.a.
46		21.627	2.379	36.082	0.31	0.52	n.a.
47		21.878	8.617	136.310	1.14	1.96	n.a.
48		22.138	0.149	2.260	0.02	0.03	n.a.
49		22.288	0.450	7.553	0.06	0.11	n.a.
50		22.633	14.744	214.805	1.94	3.09	n.a.
51		23.402	2.193	33.630	0.29	0.48	n.a.
52		23.652	0.250	2.932	0.03	0.04	n.a.
53		24.233	0.105	1.250	0.01	0.02	n.a.
54		24.423	0.911	9.653	0.12	0.14	n.a.
55		24.682	0.232	3.410	0.03	0.05	n.a.
56		24.968	2.178	29.090	0.29	0.42	n.a.
57		25.227	2.114	24.474	0.28	0.35	n.a.
58		25.590	5.569	60.788	0.73	0.87	n.a.
59		26.015	0.209	2.380	0.03	0.03	n.a.
60		27.093	0.107	1.478	0.01	0.02	n.a.
61		27.245	0.555	8.112	0.07	0.12	n.a.
62		27.798	0.165	2.322	0.02	0.03	n.a.
63		30.205	0.168	1.233	0.02	0.02	n.a.
64		34.372	0.219	2.854	0.03	0.04	n.a.
<b>Total:</b>			<b>758.404</b>	<b>6948.354</b>	<b>100.00</b>	<b>100.00</b>	

### Chromatogram and Results

**Injection Details**

Injection Name:	Rosemary store sample	Run Time (min):	42.30
Vial Number:	73	Injection Volume:	0.10
Injection Type:	Unknown	Channel:	FrontDetector
Calibration Level:		Wavelength:	n.a.
Instrument Method:	Gunjan Manual	Bandwidth:	n.a.
Processing Method:	Basic Quantitative(10)	Dilution Factor:	1.0000
Injection Date/Time:	31/Jul/19 12:28	Sample Weight:	1.0000

**Chromatogram**



**Integration Results**

No.	Peak Name	Retention Time min	Area pA*min	Height pA	Relative Area %	Relative Height %	Amount
1		4.963	2.422	53.838	0.36	0.50	n.a.
2		5.202	110.918	2535.170	16.37	23.67	n.a.
3		5.495	50.583	1352.684	7.46	12.63	n.a.
4		5.563	2.971	98.491	0.44	0.92	n.a.
5		5.905	2.637	64.919	0.39	0.61	n.a.
6		6.047	11.863	291.547	1.75	2.72	n.a.
7		6.200	6.572	184.216	0.97	1.72	n.a.
8		6.595	1.920	47.106	0.28	0.44	n.a.
9		6.748	0.319	7.309	0.05	0.07	n.a.
10		6.883	1.210	26.549	0.18	0.25	n.a.
11		7.095	30.734	443.851	4.54	4.14	n.a.
12		7.207	3.567	70.609	0.53	0.66	n.a.
13		7.358	166.208	2041.494	24.53	19.06	n.a.
14		8.733	1.943	35.420	0.29	0.33	n.a.
15		8.958	7.579	126.688	1.12	1.18	n.a.
16		9.157	0.599	11.730	0.09	0.11	n.a.
17		9.502	0.343	4.012	0.05	0.04	n.a.
18		9.792	0.485	6.109	0.07	0.06	n.a.
19		10.553	157.276	1473.349	23.21	13.76	n.a.
20		10.733	0.569	12.664	0.08	0.12	n.a.
21		10.872	0.604	16.041	0.09	0.15	n.a.

22		11.037	10.300	195.834	1.52	1.83	n.a.
23		11.342	5.914	99.701	0.87	0.93	n.a.
24		11.533	1.293	20.421	0.19	0.19	n.a.
25		11.612	0.538	10.630	0.08	0.10	n.a.
26		11.742	12.863	216.393	1.90	2.02	n.a.
27		11.935	1.700	27.109	0.25	0.25	n.a.
28		12.117	1.167	15.782	0.17	0.15	n.a.
29		12.407	34.266	460.883	5.06	4.30	n.a.
30		12.742	5.669	104.710	0.84	0.98	n.a.
31		13.340	0.514	10.069	0.08	0.09	n.a.
32		13.547	1.833	29.230	0.27	0.27	n.a.
33		13.670	0.358	6.418	0.05	0.06	n.a.
34		14.105	0.621	10.653	0.09	0.10	n.a.
35		14.187	0.538	7.914	0.08	0.07	n.a.
36		14.330	0.054	0.806	0.01	0.01	n.a.
37		14.647	6.223	103.667	0.92	0.97	n.a.
38		15.023	0.391	7.887	0.06	0.07	n.a.
39		15.560	0.724	12.632	0.11	0.12	n.a.
40		15.653	0.652	9.998	0.10	0.09	n.a.
41		15.800	0.104	1.424	0.02	0.01	n.a.
42		16.082	0.096	1.592	0.01	0.01	n.a.
43		16.218	0.438	3.559	0.06	0.03	n.a.
44		16.367	0.295	4.939	0.04	0.05	n.a.
45		16.802	0.804	13.685	0.12	0.13	n.a.
46		17.343	1.357	22.711	0.20	0.21	n.a.
47		17.480	1.510	22.663	0.22	0.21	n.a.
48		18.445	0.033	0.396	0.00	0.00	n.a.
49		18.592	0.286	3.397	0.04	0.03	n.a.
50		18.853	6.187	96.530	0.91	0.90	n.a.
51		19.872	5.294	83.158	0.78	0.78	n.a.
52		20.495	2.201	30.540	0.32	0.29	n.a.
53		20.608	0.689	11.592	0.10	0.11	n.a.
54		20.835	0.290	3.388	0.04	0.03	n.a.
55		21.073	0.909	8.565	0.13	0.08	n.a.
56		21.180	0.592	8.884	0.09	0.08	n.a.
57		21.613	0.926	13.932	0.14	0.13	n.a.
58		21.857	2.398	37.309	0.35	0.35	n.a.
59		22.447	0.554	8.297	0.08	0.08	n.a.
60		23.648	2.588	32.882	0.38	0.31	n.a.
61		24.382	1.613	24.481	0.24	0.23	n.a.
62		24.672	0.808	11.353	0.12	0.11	n.a.
63		24.980	0.329	4.391	0.05	0.04	n.a.
64		28.918	0.058	0.831	0.01	0.01	n.a.
65		29.172	0.362	4.607	0.05	0.04	n.a.
<b>Total:</b>			<b>677.663</b>	<b>10709.643</b>	<b>100.00</b>	<b>100.00</b>	

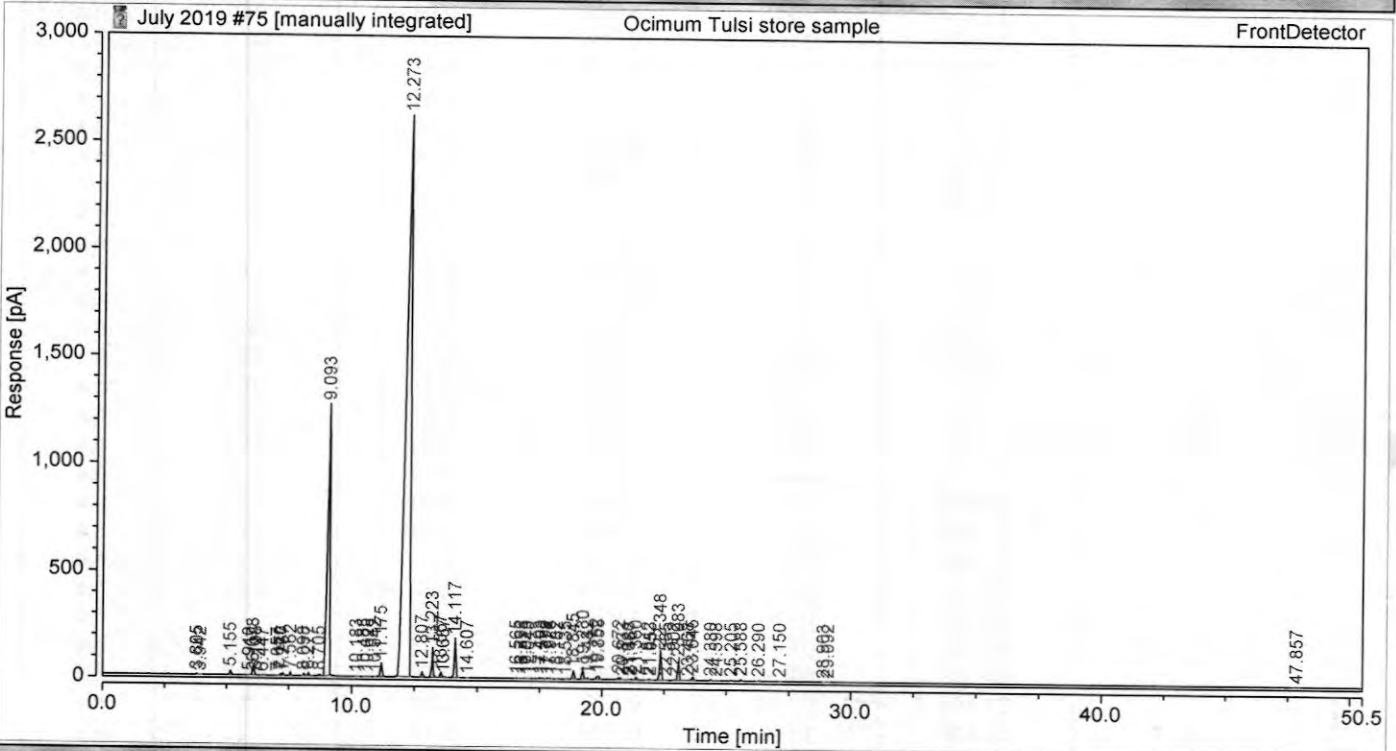


### Chromatogram and Results

**Injection Details**

Injection Name:	Ocimum Tulsi store sample	Run Time (min):	50.50
Vial Number:	74	Injection Volume:	0.10
Injection Type:	Unknown	Channel:	FrontDetector
Calibration Level:		Wavelength:	n.a.
Instrument Method:	Gunjan Manual	Bandwidth:	n.a.
Processing Method:	Basic Quantitative(11)	Dilution Factor:	1.0000
Injection Date/Time:	31/Jul/19 13:13	Sample Weight:	1.0000

**Chromatogram**



**Integration Results**

No.	Peak Name	Retention Time min	Area pA*min	Height pA	Relative Area %	Relative Height %	Amount n.a.
1		3.805	0.215	6.421	0.03	0.13	n.a.
2		3.942	0.025	0.809	0.00	0.02	n.a.
3		5.155	0.786	22.964	0.11	0.46	n.a.
4		5.910	0.198	4.058	0.03	0.08	n.a.
5		6.078	2.087	44.662	0.29	0.90	n.a.
6		6.195	0.294	7.824	0.04	0.16	n.a.
7		6.447	0.208	2.619	0.03	0.05	n.a.
8		7.057	0.170	4.085	0.02	0.08	n.a.
9		7.170	0.329	7.735	0.05	0.16	n.a.
10		7.267	0.547	11.798	0.08	0.24	n.a.
11		7.562	0.725	16.821	0.10	0.34	n.a.
12		8.098	0.503	9.024	0.07	0.18	n.a.
13		8.277	0.827	14.017	0.12	0.28	n.a.
14		8.705	0.877	10.696	0.12	0.22	n.a.
15		9.093	130.794	1263.259	18.24	25.47	n.a.
16		10.183	0.149	2.320	0.02	0.05	n.a.
17		10.485	0.165	2.863	0.02	0.06	n.a.
18		10.628	0.149	2.303	0.02	0.05	n.a.
19		10.942	0.155	2.526	0.02	0.05	n.a.
20		11.175	5.297	63.990	0.74	1.29	n.a.
21		12.273	520.251	2615.263	72.56	52.73	n.a.

22		12.807	1.369	23.556	0.19	0.47	n.a.
23		13.223	7.341	136.432	1.02	2.75	n.a.
24		13.557	1.532	27.837	0.21	0.56	n.a.
25		13.657	0.456	6.610	0.06	0.13	n.a.
26		14.117	10.607	182.648	1.48	3.68	n.a.
27		14.607	0.105	1.889	0.01	0.04	n.a.
28		16.565	0.302	3.347	0.04	0.07	n.a.
29		16.798	0.206	3.094	0.03	0.06	n.a.
30		16.928	0.259	3.680	0.04	0.07	n.a.
31		17.043	0.026	0.519	0.00	0.01	n.a.
32		17.493	0.378	4.939	0.05	0.10	n.a.
33		17.598	0.336	5.893	0.05	0.12	n.a.
34		17.778	0.136	1.534	0.02	0.03	n.a.
35		17.928	0.275	3.703	0.04	0.07	n.a.
36		18.182	0.104	1.939	0.01	0.04	n.a.
37		18.535	0.114	1.300	0.02	0.03	n.a.
38		18.845	2.405	38.071	0.34	0.77	n.a.
39		19.230	3.336	53.669	0.47	1.08	n.a.
40		19.432	0.382	5.939	0.05	0.12	n.a.
41		19.762	1.004	16.752	0.14	0.34	n.a.
42		19.858	0.907	13.514	0.13	0.27	n.a.
43		20.672	1.235	11.533	0.17	0.23	n.a.
44		20.833	0.107	1.718	0.01	0.03	n.a.
45		21.080	0.026	0.567	0.00	0.01	n.a.
46		21.167	0.437	4.407	0.06	0.09	n.a.
47		21.360	0.641	9.956	0.09	0.20	n.a.
48		21.842	0.236	3.105	0.03	0.06	n.a.
49		21.953	0.182	2.370	0.03	0.05	n.a.
50		22.348	8.749	135.779	1.22	2.74	n.a.
51		22.585	0.106	1.679	0.01	0.03	n.a.
52		22.902	0.237	3.661	0.03	0.07	n.a.
53		23.083	5.654	92.666	0.79	1.87	n.a.
54		23.468	0.196	2.488	0.03	0.05	n.a.
55		23.645	1.326	15.764	0.18	0.32	n.a.
56		24.380	0.298	4.535	0.04	0.09	n.a.
57		24.598	0.173	2.378	0.02	0.05	n.a.
58		25.205	0.153	2.169	0.02	0.04	n.a.
59		25.588	0.327	4.770	0.05	0.10	n.a.
60		26.290	0.180	2.855	0.03	0.06	n.a.
61		27.150	0.115	1.977	0.02	0.04	n.a.
62		28.903	0.017	0.236	0.00	0.00	n.a.
63		29.092	0.130	1.751	0.02	0.04	n.a.
64		47.857	0.120	0.756	0.02	0.02	n.a.
<b>Total:</b>			<b>716.974</b>	<b>4960.043</b>	<b>100.00</b>	<b>100.00</b>	

GC Report of *afine*  
Essential oil samples CRCB Bangalore: Major identified constituents

Bangalore

**1. Lemongrass oil**

Neral	21.5%
Geraniol	21.2%
Geranial	28.1%
Geranyl acetate	5.4%

**2. Lemongrass oil 2**

Neral	32.7%
Geraniol	3.4%
Geranial	44.7%
Geranyl acetate	1.8%

**3. Cinnamon leaf oil**

Eugenol	44.7%
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**4. Palmarosa oil**

Geraniol	82.8%
Geranyl acetate	4.2%

**5. Eucalyptus oil**

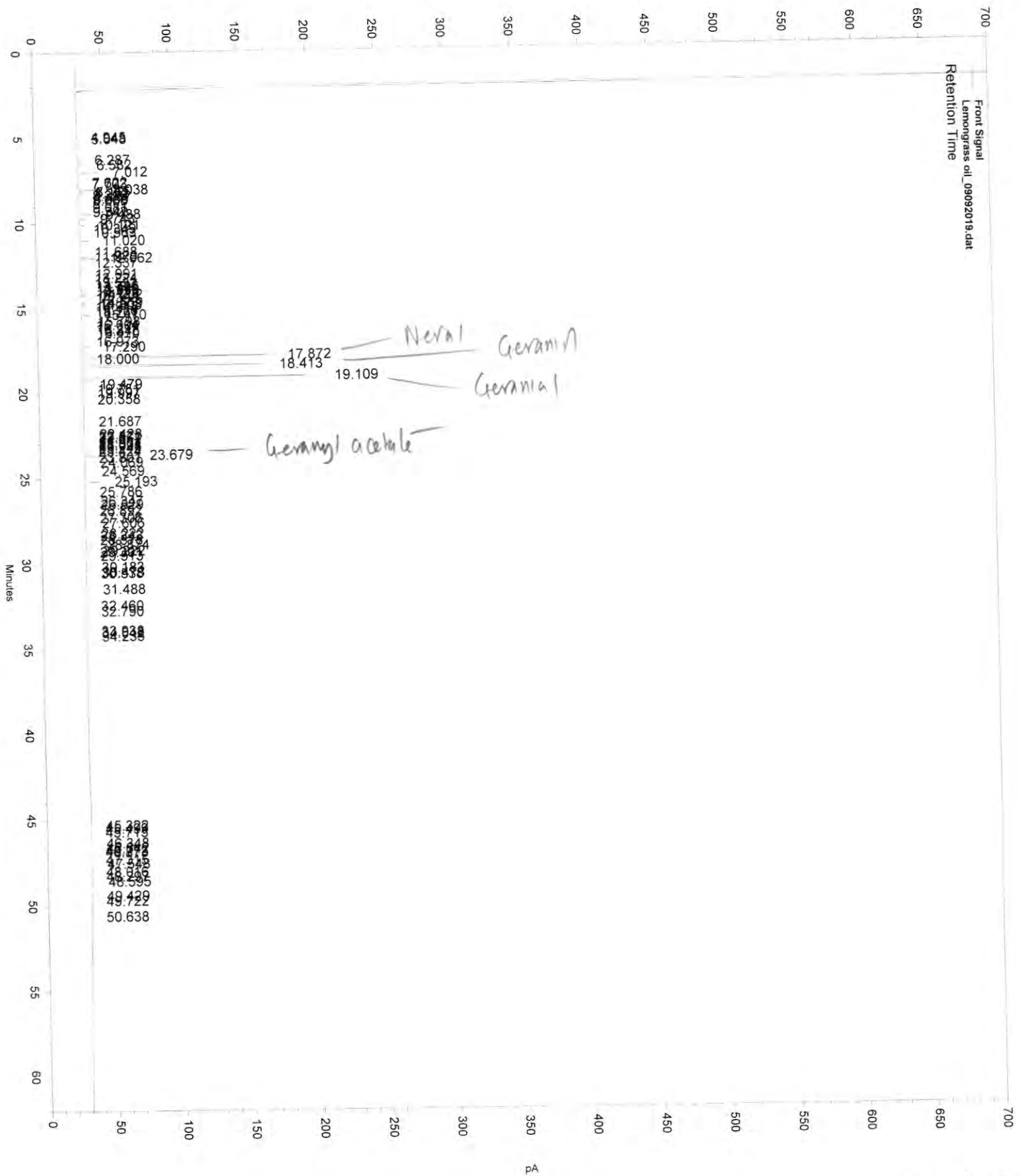
Isopulegol	10.2%
Citronellal	55.9%
Neo-isopulegol	5.9%
Citronellol	4.4%

~~Angu Yadav~~  
17/9/19

CIF Angu Yadav  
Chemical Sciences STOC(I)  
CIF.

CENTRAL LABORATORY, CIMAP

SYSTEM: GC (Offline) Method: D:\Method\ELITE\_5\_BLANK\_09092019.met  
 Data File: D:\CIF\_2019\September 2019\09092019002.rslt\Lemongrass oil\_09092019.dat  
 Acquired: 09-Sep-19 10:15:43 AM (GMT +05:30) Printed: 11-Sep-19 11:08:08 AM (GMT +05:30)  
 pA




Chromatogram: Lemongrass oil

Peak Results:

Front Signal Results

Peak Number	Retention Time	Area	Area Percent	Description
1	4.945	1046	0.006	
2	5.048	3362	0.020	
3	6.287	42153	0.248	
4	6.582	65509	0.385	
5	7.012	279480	1.643	
6	7.622	6179	0.036	
7	7.703	2579	0.015	
8	8.038	299656	1.762	
9	8.165	50864	0.299	
10	8.252	33444	0.197	
11	8.390	7246	0.043	
12	8.555	24366	0.143	
13	8.666	6606	0.039	
14	9.081	1988	0.012	
15	9.342	5226	0.031	
16	9.488	209965	1.234	
17	9.743	108926	0.640	
18	10.121	65557	0.385	
19	10.349	5251	0.031	
20	10.563	3480	0.020	
21	11.020	151187	0.889	
22	11.688	17897	0.105	
23	11.970	11245	0.066	
24	12.062	271198	1.594	
25	12.337	13380	0.079	
26	12.991	26912	0.158	
27	13.224	11586	0.068	
28	13.532	4446	0.026	
29	13.706	36546	0.215	
30	13.870	36635	0.215	
31	13.956	39327	0.231	
32	14.128	30040	0.177	
33	14.202	97917	0.576	
34	14.398	19218	0.113	
35	14.669	94050	0.553	
36	14.808	86394	0.508	
37	14.918	12379	0.073	
38	15.136	4446	0.026	
39	15.267	12823	0.075	
40	15.410	180780	1.063	
41	15.798	39409	0.232	
42	16.004	19492	0.115	
43	16.217	6403	0.038	
44	16.343	22144	0.130	
45	16.470	22791	0.134	
46	16.973	8499	0.050	
47	17.290	133650	0.786	
48	17.872	3658456	21.509	
49	18.000	3842	0.023	
50	18.413	3615268	21.255	
51	19.109	4794569	28.189	
52	19.479	46151	0.271	
53	19.751	2916	0.017	
54	19.997	3265	0.019	
55	20.358	2622	0.015	
56	21.687	19807	0.116	
57	22.428	27731	0.163	
58	22.571	7772	0.046	
59	22.667	15265	0.090	
60	22.901	6243	0.037	
61	23.007	14319	0.084	
62	23.098	13214	0.078	
63	23.243	6578	0.039	
64	23.424	7670	0.045	
65	23.679	934479	5.494	
66	23.801	6862	0.040	

 49%

Chromatogram: Lemongrass oil

67	24.069	42232	0.248
68	24.569	58258	0.343
69	25.193	319643	1.879
70	25.786	18428	0.108
71	26.347	35179	0.207
72	26.529	35081	0.206
73	26.892	3533	0.021
74	27.306	4905	0.029
75	27.606	46491	0.273
76	28.222	27832	0.164
77	28.343	6319	0.037
78	28.578	14286	0.084
79	28.874	144188	0.848
80	29.222	52349	0.308
81	29.301	2111	0.012
82	29.513	26280	0.155
83	30.183	28275	0.166
84	30.473	30964	0.182
85	30.538	9430	0.055
86	31.488	50908	0.299
87	32.460	3540	0.021
88	32.790	3897	0.023
89	33.938	7167	0.042
90	34.042	10863	0.064
91	34.235	14442	0.085
92	45.322	13749	0.081
93	45.499	5742	0.034
94	45.715	6302	0.037
95	46.348	21215	0.125
96	46.642	13197	0.078
97	46.773	6522	0.038
98	46.873	4803	0.028
99	47.315	4453	0.026
100	47.548	34122	0.201
101	48.016	4407	0.026
102	48.297	6066	0.036
103	48.595	51218	0.301
104	49.429	13817	0.081
105	49.722	3493	0.021
106	50.638	2233	0.013

Totals		17008646	100.000
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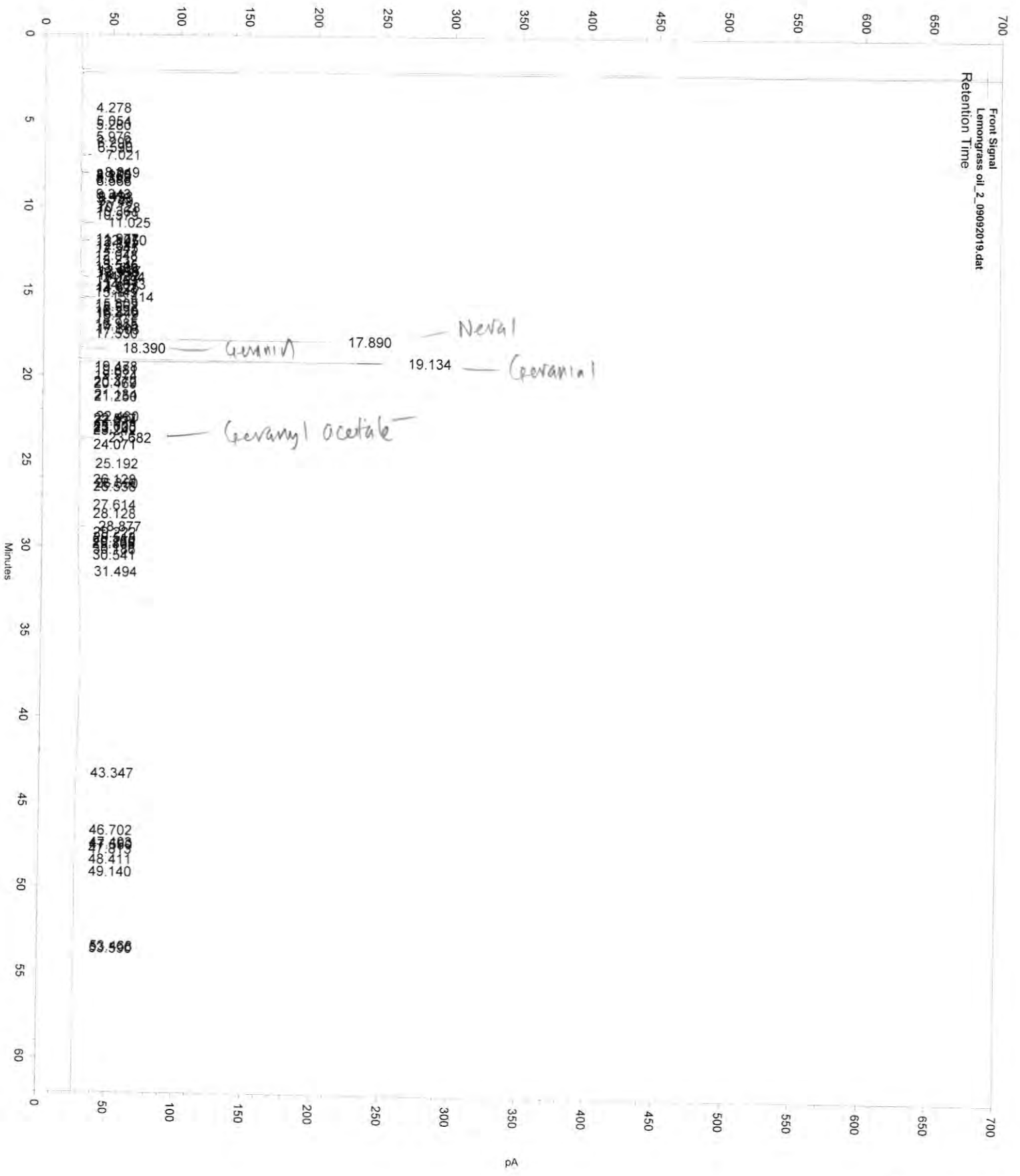
CENTRAL LABORATORY, CIMAP

SYSTEM: GC (Offline)

Method: D:\Method\ELITE\_5\_BLANK\_09092019.met

Data File: D:\CIF\_2019\September 2019\09092019003.rsl\Lemongrass oil\_2\_09092019.dat

Printed: 11-Sep-19 11:04:04 AM (GMT +05:30)  
pA



Chromatogram: Lemongrass oil\_2

Peak Results:

Front Signal Results

Peak Number	Retention Time	Area	Area Percent	Description
1	4.278	2156	0.014	
2	5.054	4018	0.025	
3	5.280	1382	0.009	
4	5.976	4382	0.028	
5	6.296	20270	0.128	
6	6.590	25313	0.160	
7	7.021	143329	0.909	
8	8.049	132001	0.837	
9	8.170	7097	0.045	
10	8.260	12768	0.081	
11	8.398	4178	0.026	
12	8.568	16160	0.102	
13	9.343	7301	0.046	
14	9.498	38264	0.243	
15	9.576	5589	0.035	
16	9.749	41175	0.261	
17	10.128	29303	0.186	
18	10.361	9009	0.057	
19	10.579	4284	0.027	
20	11.025	197164	1.250	
21	11.977	10631	0.067	
22	12.070	145491	0.922	
23	12.145	13286	0.084	
24	12.347	28435	0.180	
25	12.545	8320	0.053	
26	12.948	2404	0.015	
27	13.232	4519	0.029	
28	13.545	3722	0.024	
29	13.708	20436	0.130	
30	13.877	62198	0.394	
31	13.958	27626	0.175	
32	14.132	41213	0.261	
33	14.204	141930	0.900	
34	14.403	18419	0.117	
35	14.673	151835	0.962	
36	14.825	37361	0.237	
37	14.937	5842	0.037	
38	15.149	3542	0.022	
39	15.414	323089	2.048	
40	15.809	9779	0.062	
41	15.962	17675	0.112	
42	16.220	11351	0.072	
43	16.349	30801	0.195	
44	16.472	16791	0.106	
45	16.985	6043	0.038	
46	17.115	9593	0.061	
47	17.303	43159	0.274	
48	17.530	8770	0.056	
49	17.890	5164227	32.736	
50	18.390	538948	3.416	
51	19.134	7053197	44.711	
52	19.478	16460	0.104	
53	19.681	23400	0.148	
54	19.974	12712	0.081	
55	20.372	5509	0.035	
56	20.469	6352	0.040	
57	21.134	13169	0.083	
58	21.250	12662	0.080	
59	22.430	64288	0.408	
60	22.557	5947	0.038	
61	22.674	11066	0.070	
62	23.008	6828	0.043	
63	23.100	5252	0.033	
64	23.242	2900	0.018	
65	23.682	285369	1.809	
66	24.071	9979	0.063	



Chromatogram: Lemongrass oil\_2

67	25.192	52733	0.334
68	26.128	4899	0.031
69	26.350	43109	0.273
70	26.538	4254	0.027
71	27.614	3886	0.025
72	28.128	5708	0.036
73	28.877	131103	0.831
74	29.222	17924	0.114
75	29.513	28057	0.178
76	29.760	1846	0.012
77	29.868	4406	0.028
78	30.186	8614	0.055
79	30.541	6280	0.040
80	31.494	37001	0.235
81	43.347	3976	0.025
82	46.702	8889	0.056
83	47.403	12591	0.080
84	47.550	18685	0.118
85	47.813	4053	0.026
86	48.411	11117	0.070
87	49.140	9352	0.059
88	53.468	147302	0.934
89	53.590	61732	0.391

Totals		15775186	100.000
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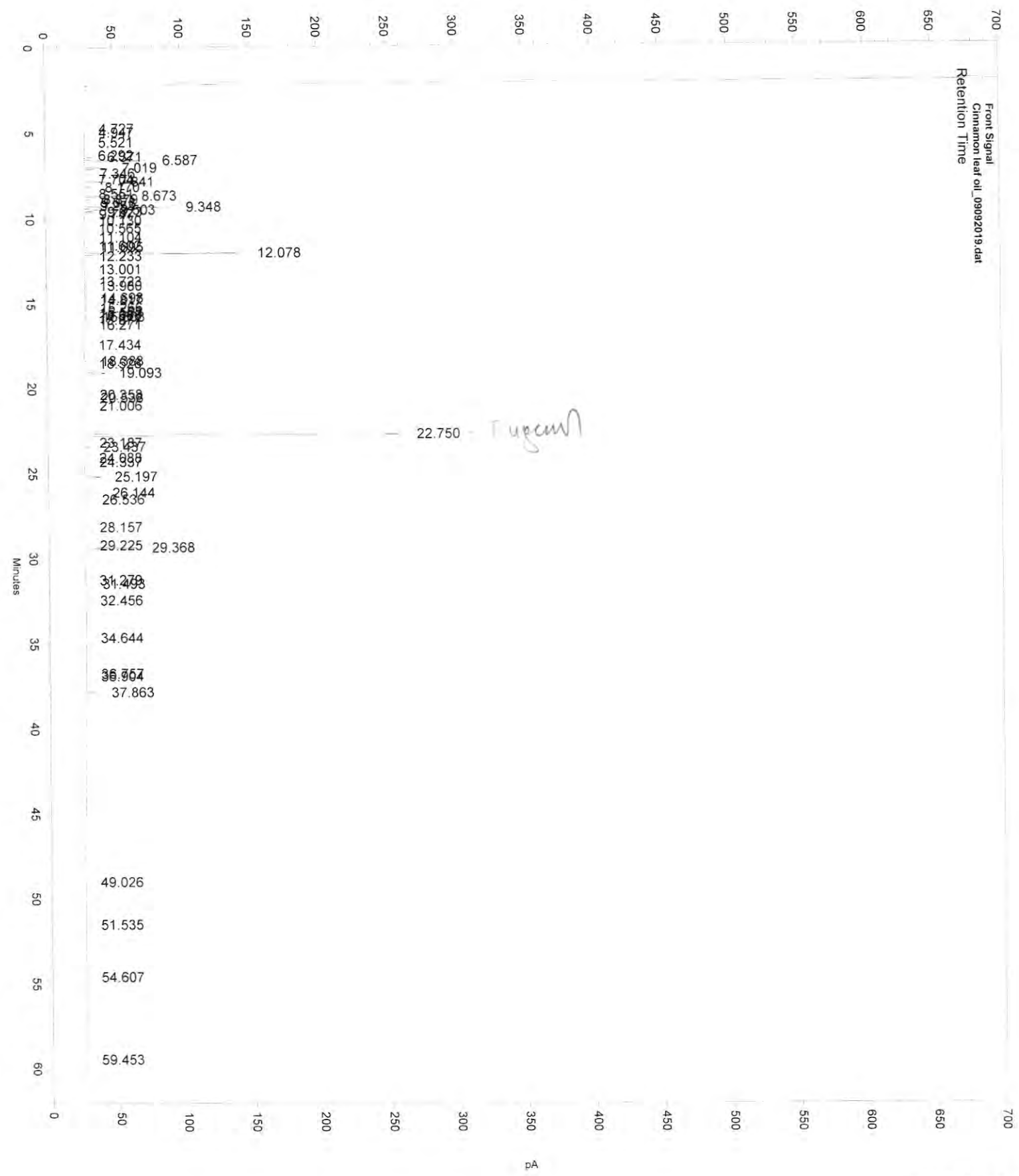
CENTRAL LABORATORY, CIMAP

SYSTEM: GC (Offline)

Method: D:\Method\ELITE\_5\_BLANK\_09092019.met

Data File: D:\CIF\_2019\September 2019\09092019003.rslt\Cinnamon leaf oil\_09092019.dat

Printed: 11-Sep-19 10:58:08 AM (GMT +05:30)  
pA



## Chromatogram: Cinnamon leaf oil

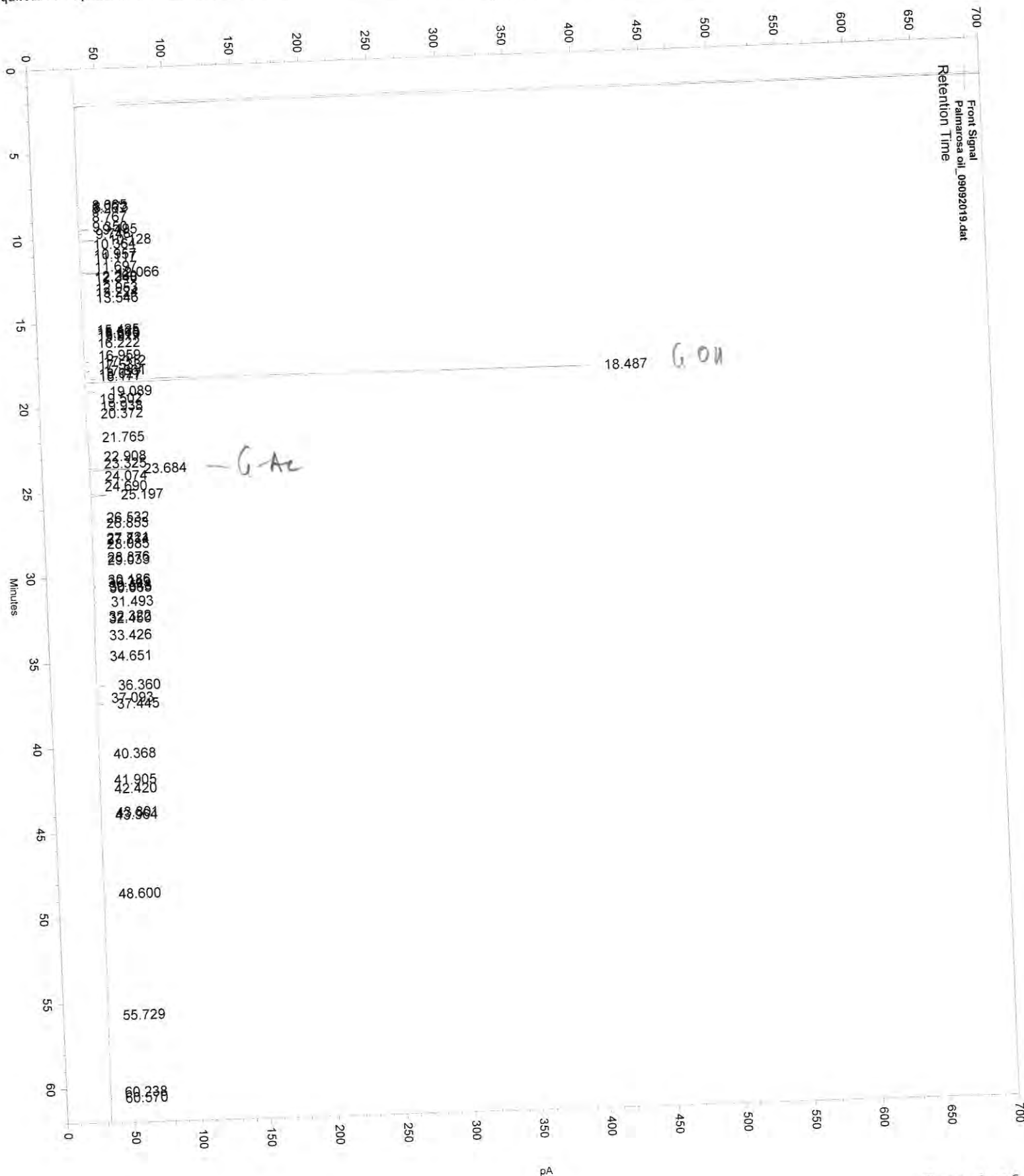
## Peak Results:

## Front Signal Results

Peak Number	Retention Time	Area	Area Percent	Description
1	4.727	5781	0.031	
2	4.947	8742	0.047	
3	5.521	1622	0.009	
4	6.292	3588	0.019	
5	6.371	117584	0.636	
6	6.587	833409	4.505	
7	7.019	332827	1.799	
8	7.346	22973	0.124	
9	7.704	6199	0.034	
10	7.841	304032	1.643	
11	8.170	88987	0.481	
12	8.551	2290	0.012	
13	8.673	633548	3.425	
14	8.879	72457	0.392	
15	9.078	43188	0.233	
16	9.253	26318	0.142	
17	9.348	1323127	7.152	
18	9.503	532497	2.878	
19	9.623	165071	0.892	
20	9.747	8291	0.045	
21	10.130	7674	0.041	
22	10.565	2755	0.015	
23	11.104	12570	0.068	
24	11.602	6257	0.034	
25	11.695	45575	0.246	
26	12.078	2628107	14.207	
27	12.233	11880	0.064	
28	13.001	2861	0.015	
29	13.723	6004	0.032	
30	13.980	10205	0.055	
31	14.698	48910	0.264	
32	14.817	20400	0.110	
33	15.266	27489	0.149	
34	15.563	15666	0.085	
35	15.688	12754	0.069	
36	15.803	71782	0.388	
37	15.977	7253	0.039	
38	16.271	19726	0.107	
39	17.434	7521	0.041	
40	18.388	53457	0.289	
41	18.528	8819	0.048	
42	19.093	405348	2.191	
43	20.358	13259	0.072	
44	20.538	33087	0.179	
45	21.006	14576	0.079	
46	22.750	8271237	44.711	
47	23.187	15399	0.083	
48	23.437	92921	0.502	
49	24.088	8538	0.046	
50	24.337	10432	0.056	
51	25.197	318638	1.722	
52	26.144	252611	1.366	
53	26.536	50864	0.275	
54	28.157	2901	0.016	
55	29.225	8019	0.043	
56	29.368	1055088	5.703	
57	31.279	4986	0.027	
58	31.493	67587	0.365	
59	32.456	7934	0.043	
60	34.644	4737	0.026	
61	36.757	10287	0.056	
62	36.904	10319	0.056	
63	37.863	225688	1.220	
64	49.026	3655	0.020	
65	51.535	8219	0.044	
66	54.607	13350	0.072	

CENTRAL LABORATORY, CIMAP

SYSTEM: GC (Offline)  
Data File: D:\CIF\_2019\September 2019\09092019003.rslt\Palmarosa oil\_09092019.dat  
Acquired: 09-Sep-19 11:22:32 AM (GMT +05:30)  
Method: D:\Method\ELITE\_5\_BLANK\_09092019.met  
Printed: 11-Sep-19 11:05:57 AM (GMT +05:30)  
pA



Chromatogram: Palmarosa oil

Peak Results:

Front Signal Results

Peak Number	Retention Time	Area	Area Percent	Description
1	8.065	12650	0.072	
2	8.173	33637	0.192	
3	8.267	5407	0.031	
4	8.767	3275	0.019	
5	9.350	1818	0.010	
6	9.495	156837	0.897	
7	9.748	46877	0.268	
8	10.128	239954	1.372	
9	10.364	866	0.005	
10	10.957	3033	0.017	
11	11.117	5127	0.029	
12	11.697	8819	0.050	
13	12.066	367001	2.099	
14	12.260	2042	0.012	
15	12.348	2303	0.013	
16	12.953	6779	0.039	
17	13.224	2075	0.012	
18	13.546	7632	0.044	
19	15.425	2853	0.016	
20	15.568	2370	0.014	
21	15.670	9628	0.055	
22	15.817	9849	0.056	
23	16.222	2231	0.013	
24	16.959	7559	0.043	
25	17.312	99309	0.568	
26	17.533	4935	0.028	
27	17.861	94542	0.541	
28	18.027	3064	0.018	
29	18.177	6196	0.035	
30	18.487	14486882	82.860	
31	19.089	184629	1.056	
32	19.502	5669	0.032	
33	19.938	10453	0.060	
34	20.372	11426	0.065	
35	21.765	5303	0.030	
36	22.908	11866	0.068	
37	23.325	7724	0.044	
38	23.684	734382	4.200	
39	24.074	15202	0.087	
40	24.690	4418	0.025	
41	25.197	317515	1.816	
42	26.532	18119	0.104	
43	26.853	6135	0.035	
44	27.721	13219	0.076	
45	27.814	6035	0.035	
46	28.085	3943	0.023	
47	28.876	7994	0.046	
48	29.033	8680	0.050	
49	30.186	6942	0.040	
50	30.349	8624	0.049	
51	30.548	28313	0.162	
52	30.663	26183	0.150	
53	31.493	56498	0.323	
54	32.322	4536	0.026	
55	32.450	1733	0.010	
56	33.426	5116	0.029	
57	34.651	2715	0.016	
58	36.360	146467	0.838	
59	37.093	2500	0.014	
60	37.445	104039	0.595	
61	40.368	8059	0.046	
62	41.905	5533	0.032	
63	42.420	3473	0.020	
64	43.801	21444	0.123	
65	43.964	3058	0.017	
66	48.600	6827	0.039	

Chromatogram: Palmarosa oil

67	55.729	2033	0.012
68	60.238	3928	0.022
69	60.570	27264	0.156

Totals		17483547	100.000	
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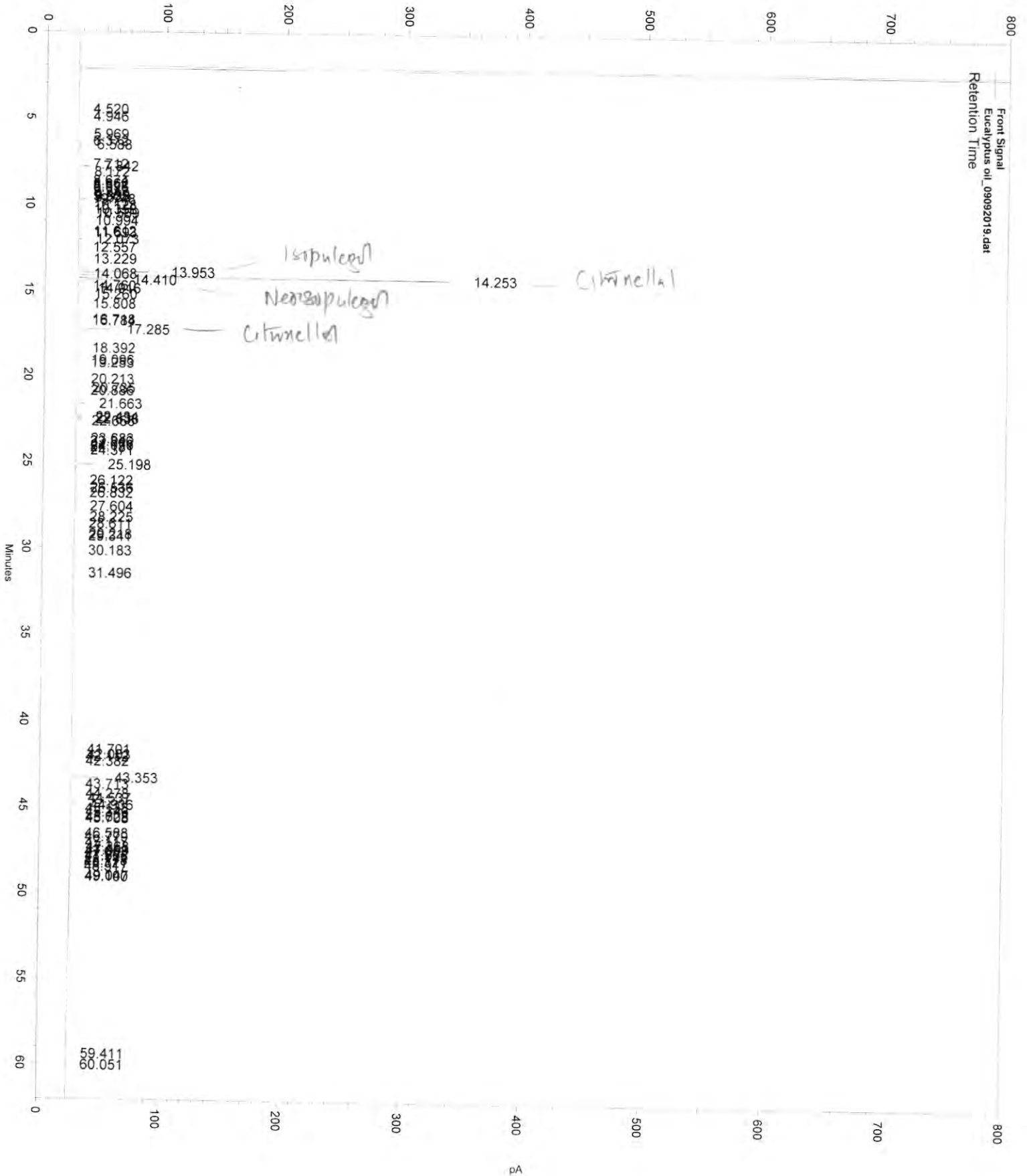
CENTRAL LABORATORY, CIMAP

SYSTEM: GC (Offline)

Method: D:\Method\ELITE\_5\_BLANK\_09092019.met

Data File: D:\CIF\_2019\September 2019\09092019003.rslt\Eucalyptus oil\_09092019.dat

Printed: 11-Sep-19 11:00:45 AM (GMT +05:30)  
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Chromatogram: Eucalyptus oil

Peak Results:

Front Signal Results

Peak Number	Retention Time	Area	Area Percent	Description
1	4.520	2197	0.014	
2	4.946	7222	0.046	
3	5.969	8880	0.057	
4	6.372	6802	0.044	
5	6.588	60807	0.390	
6	7.712	6662	0.043	
7	7.842	174968	1.121	
8	8.172	24680	0.158	
9	8.674	5127	0.033	
10	8.862	5683	0.036	
11	8.998	3886	0.025	
12	9.076	5474	0.035	
13	9.347	13292	0.085	
14	9.499	32990	0.211	
15	9.565	5797	0.037	
16	9.633	35312	0.226	
17	9.748	132163	0.847	
18	10.128	11441	0.073	
19	10.358	25181	0.161	
20	10.569	64151	0.411	
21	10.994	48285	0.309	
22	11.612	8015	0.051	
23	11.693	23802	0.153	
24	12.073	62142	0.398	
25	12.557	4663	0.030	
26	13.229	18460	0.118	
27	13.953	1600201	10.254	Isopulegol
28	14.068	27644	0.177	
29	14.253	8734378	55.971	Citronellal
30	14.410	926708	5.938	Neoisopulegol
31	14.760	5638	0.036	
32	14.916	105728	0.678	
33	15.260	33672	0.216	
34	15.808	10974	0.070	
35	16.718	2407	0.015	
36	16.784	4002	0.026	
37	17.285	699958	4.485	
38	18.392	28380	0.182	
39	19.096	6264	0.040	
40	19.253	3546	0.023	
41	20.213	12555	0.080	
42	20.735	43326	0.278	
43	20.886	7327	0.047	
44	21.663	195740	1.254	
45	22.434	105904	0.679	
46	22.538	126829	0.813	
47	22.666	34891	0.224	
48	23.683	18842	0.121	
49	23.846	8172	0.052	
50	24.070	16583	0.106	
51	24.181	8568	0.055	
52	24.371	15405	0.099	
53	25.198	413155	2.648	
54	26.122	3484	0.022	
55	26.536	21127	0.135	
56	26.832	5587	0.036	
57	27.604	16477	0.106	
58	28.225	26173	0.168	
59	28.611	3694	0.024	
60	29.218	8605	0.055	
61	29.341	4147	0.027	
62	30.183	3477	0.022	
63	31.496	15472	0.099	
64	41.701	44703	0.286	
65	42.003	50745	0.325	
66	42.112	12254	0.079	



Chromatogram: Eucalyptus oil

67	42.382	16200	0.104
68	43.353	740363	4.744
69	43.713	12083	0.077
70	44.278	19602	0.126
71	44.537	73346	0.470
72	44.936	204751	1.312
73	45.138	5146	0.033
74	45.346	8372	0.054
75	45.628	9958	0.064
76	45.708	3836	0.025
77	46.588	3876	0.025
78	46.779	2884	0.018
79	47.117	13574	0.087
80	47.368	38972	0.250
81	47.553	85962	0.551
82	47.653	9951	0.064
83	47.862	20912	0.134
84	47.925	19910	0.128
85	48.173	7405	0.047
86	48.321	13855	0.089
87	48.517	10148	0.065
88	49.047	47843	0.307
89	49.100	18087	0.116
90	59.411	4263	0.027
91	60.051	2982	0.019

Totals		15605105	100.000
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