



Essential Oil University

GC/MS Report

Item	Lot
Lemongrass EO <i>Cymbopogon flexuosus</i>	2S
Date	Analyst
5/22/2024	Dr. Robert S. Pappas

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The analysis of this batch sample, Lemongrass EO, meets the expected chemical profile for authentic essential oil of *Cymbopogon flexuosus*. No contamination or adulteration was detected. The results provided in this GCMS quality analysis reflect the chemical composition of the oil and lot referenced above on the date of analysis.



Sample Information

Company: Revive**Sample Name:** Lemongrass EO**Botanical Name:** Cymbopogon flexuosus**Lot Number:** 2S**Production Method:** Steam distilled**Sample Type:** EO - Single**Country of Origin:** India**Analysis Date:** 5/22/2024**Date of Distillation:** May 2024

GC/MS

Inst. ID: Shimadzu GCMS-QP2010Ultra**Injection Type:** Split**Split Ratio:** 24.4**Column Type:** ZB-5**Injection Volume:** 0.1 µL**Temperature Program:** 2C/min

Physical Data

ANALYSIS

Optical Rotation @20°C

Refractive Index @20°C

Specific Gravity @20°C

METHOD

USP[781]

USP[831]

USP[841]

RESULTS

-1.60

1.48550

0.89747



Ret. Time	Component	Ret. Idx.	Conc. %	
3.068	Unidentified	552	0.04%	
3.632	2-Methyl 3-buten-2-ol	607	0.03%	
4.058	3-Methylbutanal	649	0.01%	
4.167	2-Methylbutanal	660	0.01%	
4.384	trans-3-Penten-2-ol	681	0%	
5.192	1-Pentanol	729	0.01%	
7.737	Unidentified	826	0.01%	
9.315	4-Heptanone	867	0.01%	
11.762	Tricyclene	922	0.13%	
12.319	alpha-Pinene	932	0.22%	
13.219	Camphene	948	1.09%	
14.484	Sabinene	971	0.01%	
14.782	beta-Pinene	977	0.01%	
15.097	6-Methyl hept-5-en-2-one	983	1.88%	
15.425	Myrcene	989	0.05%	
15.475	para-Cymenene	989	0.06%	
15.608	6-Methyl hept-5-en-2-ol	992	0.01%	
15.877	trans-Dehydroxylinol oxide	997	0.02%	
16.263	Octanal	1003	0.04%	
17.612	para-Cymene	1024	0.03%	
17.915	Limonene	1028	1.56%	IFRA
18.010	beta-Phellandrene	1030	0.02%	
18.089	1,8-Cineole	1031	0.03%	
18.308	cis-beta-Ocimene	1034	0.19%	
18.989	trans-beta-Ocimene	1045	0.13%	
19.105	Unidentified	1047	0.01%	
19.414	Bergamot	1051	0.02%	
19.779	gamma-Terpinene	1057	0.03%	
20.625	4-Nonanone	1070	1.26%	
21.587	Terpinolene	1085	0.05%	
21.909	4-Nonanol	1090	0.03%	
22.004	Rosefuran	1091	0.11%	
22.206	Unidentified	1094	0.01%	
22.465	Perillene	1098	0.06%	
22.532	Linalool	1099	1.16%	IFRA
22.755	Unidentified	1102	0.02%	
22.926	alpha-Pinene oxide	1105	0.1%	
23.173	Unidentified	1109	0.03%	
24.035	Unidentified	1121	0.01%	
24.141	Unidentified	1123	0.01%	



Ret. Time	Component	Ret. Idx.	Conc. %	
24.485	allo-Ocimene	1128	0.01%	
25.161	Epiphotocitral A	1137	0.12%	
25.503	exo-Isocitral	1142	0.06%	IFRA
25.873	trans-Chrysanthemal	1148	0.25%	
26.124	Citronellal	1151	0.21%	IFRA
26.752	Isoneral	1160	0.4%	IFRA
26.900	Unidentified	1163	0.01%	
27.310	Isoborneol	1169	0.15%	
27.474	Borneol	1171	0.2%	
27.896	Menthhol	1177	0.03%	
28.051	Isogeranial	1179	0.76%	IFRA
28.110	Unidentified	1180	0.12%	
28.993	Unidentified	1193	0.04%	
29.087	alpha-Terpineol	1194	0.15%	
29.435	Unidentified	1199	0.03%	
29.878	Decanal	1206	0.17%	
30.651	trans-Isopiperitenol	1217	0.02%	
31.090	Nerol	1224	0.12%	
31.284	Citronellol	1227	0.09%	IFRA
32.146	Neral	1239	29.49%	IFRA
32.894	Geraniol	1250	6.58%	IFRA
33.092	Piperitone	1253	0.11%	
34.204	Geranial	1269	40.4%	IFRA
34.413	4-Undecanone	1272	0.06%	
34.968	trans-Carvone oxide	1281	0.28%	IFRA
35.162	Isobornyl acetate	1283	0.01%	
36.093	Geranyl formate	1297	0.05%	
37.106	Neranic acid	1312	0.01%	
37.620	Methyl geranate	1320	0.03%	
38.466	Unidentified	1333	0.02%	
39.274	Geranic acid + Unidentified	1345	0.1%	
39.485	Citronellyl acetate	1349	0.01%	IFRA
39.587	Eugenol	1350	0%	
40.069	Neryl acetate	1358	0.03%	
40.218	Unidentified	1360	0.03%	
40.745	Cyclosativene	1368	0.09%	
40.786	Isolatedene	1369	0.19%	
41.205	alpha-Copaene	1375	0.03%	
41.359	Geranyl acetate	1377	4.53%	
41.720	beta-Bourbonene	1383	0.03%	



Ret. Time	Component	Ret. Idx.	Conc. %	
41.990	beta-Cubebene	1387	0.04%	
42.100	beta-Elemene	1389	0.12%	
42.238	Sativene	1391	0.02%	
43.397	Dodecanal	1409	0.02%	
44.005	beta-Caryophyllene	1419	2.24%	
44.641	beta-Copaene	1429	0.03%	
45.365	Guaia-6,9-diene	1440	0.02%	
45.663	trans-Isoeugenol	1445	0.26%	IFRA
45.847	trans-Muurolo-3,5-diene	1448	0.04%	
46.243	alpha-Humulene	1454	0.17%	
46.661	cis-Cadina-1(6),4-diene	1461	0.02%	
47.275	cis-Murrola-4(14),5-diene	1471	0.03%	
47.831	Germacrene D	1480	0.1%	
47.989	Unidentified	1482	0.01%	
48.502	gamma-Amorphene	1491	0.03%	
48.595	Unidentified	1492	0.02%	
48.730	epi-Cubebol	1494	0.12%	
48.921	alpha-Muurolene	1497	0.03%	
49.187	delta-Cadinene	1502	0.01%	
49.365	alpha-Chamigrene	1505	0.02%	
49.495	Cuparene	1507	0.02%	
49.799	gamma-Cadinene	1512	1.18%	
49.915	Cubebol	1514	0.2%	
50.105	delta-Cadinene	1517	0.35%	
50.304	trans-Calamenene	1520	0.05%	
50.603	trans-gamma-Bisabolene	1526	0.15%	
50.797	10-epi-Cubebol	1529	0.03%	
50.955	trans-Cadina-1,4-diene	1531	0.03%	
51.062	Unidentified	1533	0.02%	
51.205	alpha-Cadinene	1536	0.04%	
51.870	Hedycaryl	1547	0.05%	
52.330	Geranyl butyrate	1555	0.07%	
52.495	Germacrene B	1557	0.02%	
53.859	Caryophyllene oxide	1580	0.57%	
54.677	Unidentified	1594	0.01%	
55.479	Humulene epoxide II	1608	0.04%	
55.802	1,10-di-epi-Cubenol	1614	0.02%	
56.510	Epicubenol	1626	0.03%	
57.372	Unidentified	1642	0.02%	
58.593	Unidentified	1664	0.01%	



Ret. Time	Component	Ret. Idx.	Conc. %	
77.143	Unidentified	2025	0.01%	
78.686	Unidentified	2058	0.05%	
80.368	Unidentified	2095	0.09%	
80.592	Unidentified	2099	0.04%	
82.024	Unidentified	2132	0.01%	

Total Identified Compounds **99.21 %**

