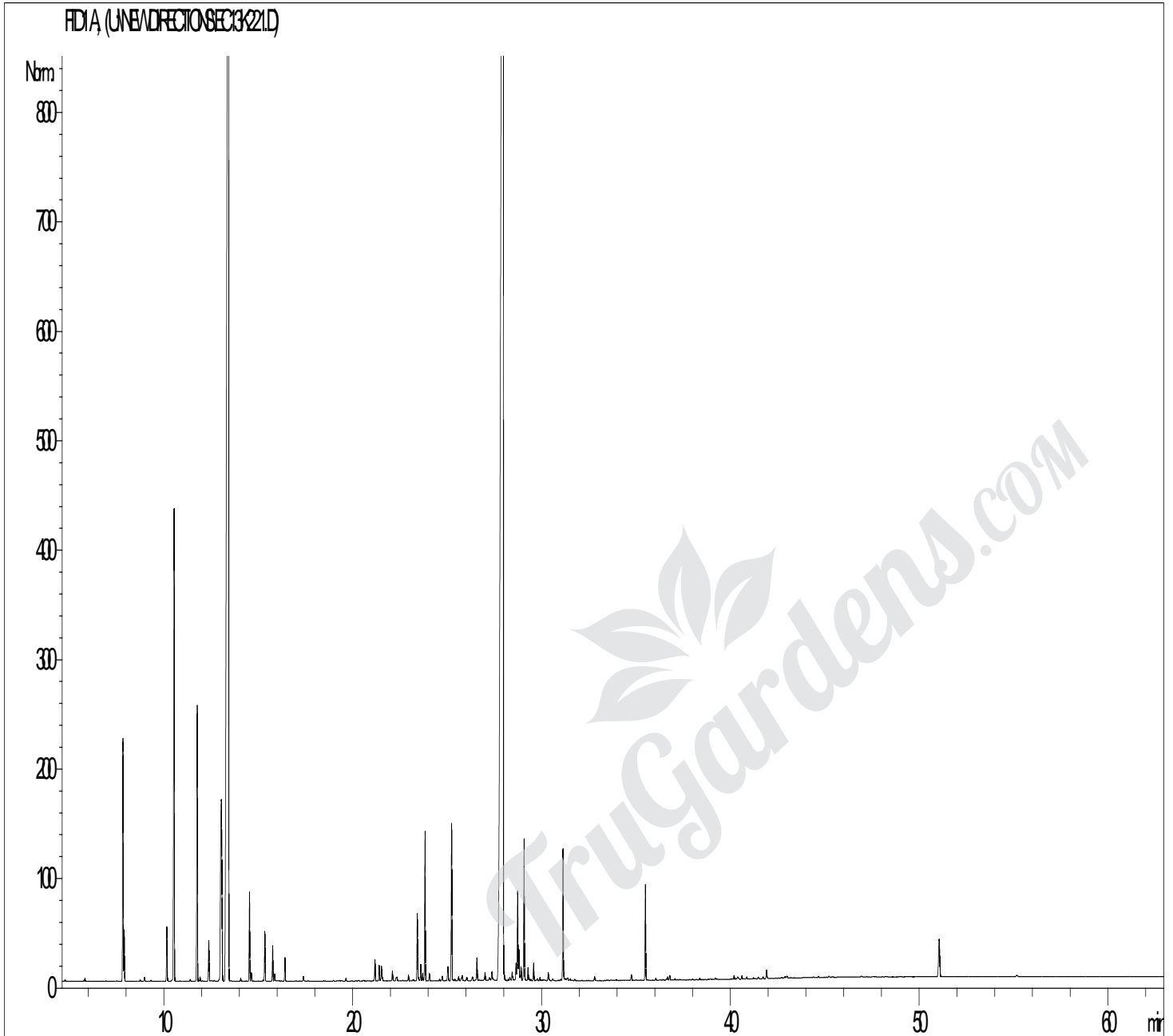


GCMS ANALYSIS

PRODUCT NAME: CARDAMOM ESSENTIAL OIL - 11020

DATE: February 2, 2017



*Due to volume turnover, this report is not lot specific. It is representative of the quality of this oil produced by the manufacturer of this product. Specific lots may vary slightly as is the case in natural products.*

GCMS ANALYSIS (cont'd.)

PRODUCT NAME: CARDAMOM ESSENTIAL OIL - 11020

Peak	RT (min)	Compound	%
1	4,7	ACETONE	0,01
2	5,7	BUTANAL, 2-METHYL-	0,01
3	5,8	ISOVALERALDEHYDE	0,01
4	7,8	<b><math>\alpha</math>-PINENE</b>	<b>1,70</b>
5	7,9	$\alpha$ -THUYENE	0,31
6	8,7	$\alpha$ -FENCHENE	0,01
7	8,9	CAMPHENE	0,03
8	9,3	HEXANAL	0,01
9	10,1	$\beta$ -PINENE	0,42
10	10,4	ISOAMYL ACETATE	0,01
11	10,5	<b>SABINENE</b>	<b>3,95</b>
12	11,4	$\Delta$ 3-CARENE	0,01
13	11,7	<b><math>\beta</math>-MYRCENE</b>	<b>2,18</b>
14	11,9	$\alpha$ -PHELLANDRENE	0,03
15	12,4	$\alpha$ -TERPINENE	0,33
16	12,6	2,3-DEHYDRO-1,8-CINEOLE	0,01
17	12,9	ALIPHATIC ALCOHOL	0,01
18	13,0	<b>LIMONENE</b>	<b>3,00</b>
19	13,4	<b>1,8-CINEOLE</b>	<b>29,78</b>
20	14,0	Cis- $\beta$ -OCIMENE	0,02
21	14,5	$\gamma$ -TERPINENE	0,64
22	14,6	trans- $\beta$ -OCIMENE	0,06
23	15,2	ACETIC ACID	0,01
24	15,3	p-CYMENE	0,36
25	15,7	TERPINOLENE	0,25
26	15,8	OCTANAL	0,05
27	16,4	1,3,7-NONATRIENE, 4,8-DIMETHYL-	0,16
28	17,4	6-METHYL-5-HEPTEN-2-ONE	0,03
29	19,6	ALIPHATIC ESTER	0,02
30	19,9	PERILLENE	0,01
31	20,3	LINALOOL cis-OXIDE	0,01
32	20,6	ACETIC ACIDE	0,01

**Disclaimer & Caution**

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GCMS ANALYSIS (cont'd.)

PRODUCT NAME: CARDAMOM ESSENTIAL OIL - 11020

Peak	RT (min)	Compound	%
33	21,2	Trans-THUYANOL	0,16
34	21,4	Z-SOLANONE	0,12
35	21,5	OCTYL ACETATE	0,11
36	21,6	δ-ELEMENE	0,02
37	22,1	ALIPHATIC ALCOHOL	0,08
38	22,2	DECANAL	0,03
39	22,3	ALIPHATIC ESTER	0,03
40	22,9	2-HYDROXY-4-METYL METHYL	0,04
41	23,1	ALIPHATIC ESTER	0,01
42	23,2	E-SOLANONE	0,01
43	23,4	<b>LINALOOL</b>	<b>0,50</b>
44	23,5	Cis-4-DECENAL	0,03
45	23,6	Cis-THUYANOL	0,13
46	23,7	1-OCTANOL	0,06
47	23,8	<b>LINALYL ACETATE</b>	<b>1,12</b>
48	24,0	Trans-p-MENTH-2-EN-1-OL	0,06
49	24,6	ALIPHATIC ESTER	0,01
50	24,7	BORNYL ACETATE	0,04
51	25,0	β-ELEMENE	0,14
52	25,2	<b>TERPINENE-4-OL</b>	<b>1,25</b>
53	25,4	β-CARYOPHYLLENE	0,01
54	25,6	β-TERPENYL ACETATE	0,04
55	25,8	Cis-p-MENTH-2-EN-1-OL	0,06
56	26,0	GURJUNENE ISOMER	0,04
57	26,3	GERMACRENE B	0,05
58	26,5	SESQUITERPENE	0,01
59	26,6	δ-TERPENYL ACETATE	0,20
60	26,7	ISOVALERIANIC ACID	0,02
61	27,0	δ-TERPINEOL	0,09
62	27,2	Cis-PIPERITOL	0,05
63	27,4	NERAL	0,11

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GCMS ANALYSIS (cont'd.)

PRODUCT NAME: CARDAMOM ESSENTIAL OIL - 11020

Peak	RT (min)	Compound	%
64	27,7	<b>α-TERPINEOL</b>	<b>1,45</b>
65	27,9	<b>TERPENYL ACETATE</b>	<b>44,48</b>
66	28,0	AROMADENDRENE	0,06
67	28,1	SESQUITERPENE	0,01
68	28,2	SESQUITERPENE	0,01
69	28,3	NERYL ACETATE	0,03
70	28,4	GERMACRENE D	0,09
71	28,6	GERANIAL	0,15
72	28,7	β-SELINENE	0,75
73	28,8	α-SELINENE	0,25
74	28,9	CARVONE	0,12
75	29,0	GERANYL ACETATE	1,13
76	29,2	α-TERPENYL PROPIONATE	0,10
77	29,4	δ-CADINENE	0,01
78	29,6	γ-CADINENE	0,14
79	29,7	FARNESENE ISOMER	0,03
80	29,9	TERPENIC ALCOHOL	0,02
81	30,3	E-DENDROLASIN	0,08
82	30,6	NEROL	0,02
83	31,0	Trans-CARVEOL	0,01
84	31,1	GERANIOL	1,06
85	31,2	p-CYMENE-8-OL	0,03
86	31,4	E-GERANYLACETONE	0,04
87	31,5	Cis-CARVEOL	0,02
88	31,7	5,9-UNDECADIEN-5-ONE, 6,10-DIMETHYL	0,01
89	32,8	ALIPHATIC ESTER	0,03
90	34,7	ALIPHATIC ESTER	0,05
91	35,5	<b>NEROLIDOL</b>	<b>0,73</b>
92	36,0	ALIPHATIC ESTER	0,02
93	36,6	ALIPHATIC ESTER	0,04
94	36,8	CINNAMATE METHYL	0,04
95	37,0	METHYL ACETOXY METHYLETHYL CYCLOHEXENOL	0,01

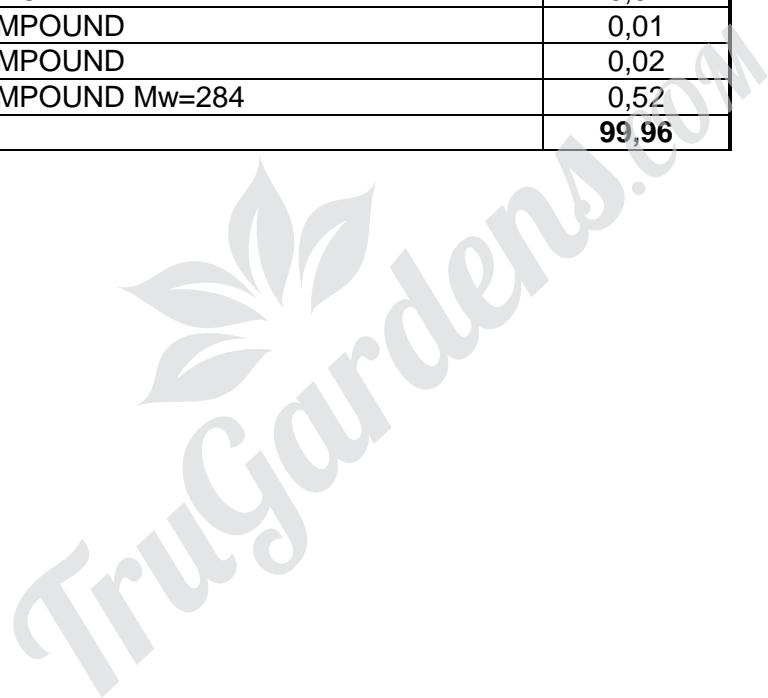
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GCMS ANALYSIS (cont'd.)

PRODUCT NAME: CARDAMOM ESSENTIAL OIL - 11020

Peak	RT (min)	Compound	%
96	38,0	ALIPHATIC ALCOHOL	0,01
97	38,4	ALIPHATIC ALCOHOL	0,01
98	39,2	ALIPHATIC ALCOHOL	0,01
99	40,2	FARNESYL ACETATE	0,03
100	40,4	AROMATIC COMPOUND	0,04
101	40,6	CARVONE ACETATE	0,03
102	40,8	ALIPHATIC ESTER	0,02
103	41,2	HYDROXY- $\alpha$ -TERPENYL ACETATE	0,01
104	41,5	AROMATIC COMPOUND	0,02
105	41,7	ALIPHATIC ESTER	0,01
106	41,9	FARNESOL	0,08
107	42,9	AROMATIC COMPOUND	0,02
108	43,0	SESQUITERPENOL	0,02
109	44,6	AROMATIC COMPOUND	0,01
110	45,2	AROMATIC COMPOUND	0,02
111	51,0	AROMATIC COMPOUND Mw=284	0,52
		<b>TOTAL</b>	<b>99,96</b>



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