

Date : May 22, 2018

CERTIFICATE OF ANALYSIS - GC PROFILING

SAMPLE IDENTIFICATION

**Internal code :** 18E09-VIV1-1-CC

**Customer identification :** Organic Eucalyptus - Portugal - 170626

**Type :** Essential oil

**Source :** *Eucalyptus globulus*

**Customer :** Viva Naturals

ANALYSIS

**Method:** PC-PA-014-17J19 - Analysis of the composition of an essential oil, or other volatile liquid, by FAST GC-FID (in French); identifications validated by GC-MS.

**Analyst :** Alexis St-Gelais, M. Sc., chimiste

**Analysis date :** May 21, 2018

Checked and approved by :

---

Alexis St-Gelais, M. Sc., chimiste 2013-174

*Note: This report may not be published, including online, without the written consent from Laboratoire PhytoChemia.*

*This report is digitally signed, it is only considered valid if the digital signature is intact.*

*PHYSICOCHEMICAL DATA*

**Physical aspect:** Faintly yellow liquid

**Refractive index:**  $1.4623 \pm 0.0003$  (20 °C)

*CONCLUSION*

No adulterant, contaminant or diluent has been detected using this method.

## ANALYSIS SUMMARY

| Identification                      | DB-5 (%) | DB-WAX (%) | Classe                 |
|-------------------------------------|----------|------------|------------------------|
| Isobutanol                          | tr       | 0.01       | Aliphatic alcohol      |
| Isovaleral                          | 0.13     | 0.14       | Aliphatic aldehyde     |
| 2-Methylbutyral                     | tr       | tr         | Aliphatic aldehyde     |
| Isoamyl alcohol                     | 0.02     | 0.06       | Aliphatic alcohol      |
| Toluene                             | 0.01     | 0.01       | Simple phenolic        |
| Hexanal                             | 0.01     | 0.01       | Aliphatic aldehyde     |
| (3Z)-Hexenol                        | 0.01     |            | Aliphatic alcohol      |
| Isovaleric acid                     | 0.05     |            | Aliphatic acid         |
| Hexanol                             | 0.01     | 0.01       | Aliphatic alcohol      |
| Isoamyl acetate                     | 0.01     | 0.02       | Aliphatic ester        |
| Hashishene                          | 0.04     | 15.15*     | Monoterpene            |
| Tricyclene                          | 0.02     | 0.03       | Monoterpene            |
| $\alpha$ -Thujene                   | 0.03     | 0.03       | Monoterpene            |
| $\alpha$ -Pinene                    | 14.99    | [15.15]*   | Monoterpene            |
| Camphene                            | 0.16*    | 0.12       | Monoterpene            |
| $\alpha$ -Fenchene                  | [0.16]*  | 0.04       | Monoterpene            |
| Thuja-2,4(10)-diene                 | 0.03     | 0.05*      | Monoterpene            |
| $\beta$ -Pinene                     | 0.33*    | 0.31       | Monoterpene            |
| Sabinene                            | [0.33]*  | [0.05]*    | Monoterpene            |
| <i>trans</i> -para-Menthane         | 0.01     | 0.01       | Monoterpene            |
| Myrcene                             | 0.28     | 0.26       | Monoterpene            |
| $\alpha$ -Phellandrene              | 0.22     | 0.17       | Monoterpene            |
| $\alpha$ -Terpinene                 | 0.06     | 0.05       | Monoterpene            |
| para-Cymene                         | 2.70     | 2.81       | Monoterpene            |
| Limonene                            | 68.44*   | 4.81       | Monoterpene            |
| 1,8-Cineole                         | [68.44]* | 63.30      | Monoterpenic ether     |
| (Z)- $\beta$ -Ocimene               | 0.04     | 0.04       | Monoterpene            |
| (E)- $\beta$ -Ocimene               | 0.03     | 0.03       | Monoterpene            |
| $\gamma$ -Terpinene                 | 1.00     | 1.10       | Monoterpene            |
| Unknown                             | 0.08     | 0.08       | Oxygenated monoterpene |
| <i>cis</i> -Linalool oxide (fur.)   | 0.03     | 0.03       | Monoterpenic alcohol   |
| Isoterpinolene                      | 0.01     | 0.01       | Monoterpene            |
| Terpinolene                         | 0.33*    | 0.19       | Monoterpene            |
| para-Cymenene                       | [0.33]*  | 0.13       | Monoterpene            |
| <i>trans</i> -Linalool oxide (fur.) | 0.03     | 0.02*      | Monoterpenic alcohol   |
| Linalool                            | 0.08     | 0.09       | Monoterpenic alcohol   |
| Unknown                             | 0.02     | 0.02       | Unknown                |
| Isoamyl isovalerate                 | 0.03     | 0.03       | Aliphatic ester        |
| endo-Fenchol                        | 0.07     | 0.06       | Monoterpenic alcohol   |
| $\alpha$ -Campholenal               | 0.04     | 0.03       | Monoterpenic aldehyde  |
| <i>trans</i> -Pinocarveol           | 0.75     | 0.77       | Monoterpenic alcohol   |
| Isopulegol                          | 0.04     | 0.02       | Monoterpenic alcohol   |
| Citronellal                         | 0.02     | [0.02]*    | Monoterpenic aldehyde  |
| Pinocarvone                         | 0.19     | 0.19       | Monoterpenic ketone    |
| Borneol                             | 0.08     | 1.76*      | Monoterpenic alcohol   |
| $\delta$ -Terpineol                 | 0.08     | 0.10       | Monoterpenic alcohol   |
| Isopinocampone                      | 0.02     | 0.30*      | Monoterpenic ketone    |
| Terpinen-4-ol                       | 0.23     | 3.00*      | Monoterpenic alcohol   |

|                              |       |         |                        |
|------------------------------|-------|---------|------------------------|
| Cryptone                     | 0.02  | 0.02    | Normoterpenic ketone   |
| para-Cymen-8-ol              | 0.03  | 0.03*   | Monoterpenic alcohol   |
| trans-Isocarveol             | 0.12  | 0.13    | Monoterpenic alcohol   |
| α-Terpineol                  | 1.68  | [1.76]* | Monoterpenic alcohol   |
| Myrtenal                     | 0.04  | 0.04*   | Monoterpenic aldehyde  |
| Myrtenol                     | 0.02  | 0.04    | Monoterpenic alcohol   |
| α-Phellandrene epoxide       | 0.02  | 0.01    | Monoterpenic ether     |
| Verbenone                    | 0.01  | 0.01    | Monoterpenic ketone    |
| Unknown                      | 0.01  |         | Oxygenated monoterpene |
| trans-Carveol                | 0.04  | 0.04    | Monoterpenic alcohol   |
| Unknown                      | 0.09  |         | Oxygenated monoterpene |
| cis-Isocarveol               | 0.04  |         | Monoterpenic alcohol   |
| Unknown                      | 0.01  |         | Oxygenated monoterpene |
| Carvone                      | 0.03  | 0.05    | Monoterpenic ketone    |
| Carvotanacetone              | 0.01  | 0.01    | Monoterpenic ketone    |
| Piperitone                   | 0.02  | 0.02    | Monoterpenic ketone    |
| Geraniol                     | 0.03  | [0.03]* | Monoterpenic alcohol   |
| trans-Pinocarvyl acetate     | 0.01  | 0.01*   | Monoterpenic ester     |
| δ-Terpinyl acetate           | 0.01  | [0.01]* | Monoterpenic ester     |
| exo-2-Hydroxycineole acetate | 0.02  | 0.02    | Monoterpenic ester     |
| α-Terpinyl acetate           | 0.30  | 0.30    | Monoterpenic ester     |
| Isoledene                    | 0.06  | 0.06    | Sesquiterpene          |
| α-Copaene                    | 0.03  | 0.03    | Sesquiterpene          |
| 7-Cubebene                   | 0.01  | 0.02    | Sesquiterpene          |
| Geranyl acetate              | 0.03  | 0.02    | Monoterpenic ester     |
| Unknown                      | 0.03  |         | Sesquiterpene          |
| α-Gurjunene                  | 0.28  | [0.30]* | Sesquiterpene          |
| Unknown                      | 0.02  |         | Sesquiterpene          |
| β-Caryophyllene              | 0.03  | 0.02    | Sesquiterpene          |
| γ-Maaliene                   | 0.07  | 0.06    | Sesquiterpene          |
| β-Gurjunene                  | 0.17  | 0.17    | Sesquiterpene          |
| α-Maaliene                   | 0.02  | [0.04]* | Sesquiterpene          |
| Aromadendrene                | 2.85  | [3.00]* | Sesquiterpene          |
| Selina-5,11-diene            | 0.08  | 0.10    | Sesquiterpene          |
| α-Humulene                   | 0.03  | 0.02    | Sesquiterpene          |
| allo-Aromadendrene           | 0.63  | 0.62    | Sesquiterpene          |
| Valerena-4,7(11)-diene       | 0.02  | 0.03    | Sesquiterpene          |
| γ-Gurjunene                  | 0.05  | 0.04    | Sesquiterpene          |
| Unknown                      | 0.02  |         | Sesquiterpene          |
| γ-Murolene                   | 0.02  | 0.02    | Sesquiterpene          |
| β-Selinene                   | 0.06  | 0.06    | Sesquiterpene          |
| allo-Aromadendr-9-ene        | 0.08  | 0.09    | Sesquiterpene          |
| Phenylethyl isovalerate      | 0.01  | 0.01    | Phenolic ester         |
| Viridiflorene                | 0.33  | 0.33    | Sesquiterpene          |
| α-Murolene                   | 0.02  | 0.04    | Sesquiterpene          |
| γ-Cadinene                   | 0.04  | 0.04    | Sesquiterpene          |
| Unknown                      | 0.05  | 0.04    | Sesquiterpene          |
| trans-Calamenene             | 0.01  |         | Sesquiterpene          |
| δ-Cadinene                   | 0.03  | 0.02    | Sesquiterpene          |
| α-Cadinene                   | 0.01  | 0.01    | Sesquiterpene          |
| Epiglobulol?                 | 0.14  | 0.14    | Sesquiterpenic alcohol |
| Palustrol                    | 0.05* | 0.02    | Sesquiterpenic alcohol |

|                                      |               |               |                          |
|--------------------------------------|---------------|---------------|--------------------------|
| Maaliol                              | [0.05]*       | 0.02          | Sesquiterpenic alcohol   |
| Spathulenol                          | 0.03          | 0.03          | Sesquiterpenic alcohol   |
| Globulol                             | 0.42          | 0.40          | Sesquiterpenic alcohol   |
| Viridiflorol                         | 0.06          | 0.07          | Sesquiterpenic alcohol   |
| Cubeban-11-ol                        | 0.04          | 0.03          | Sesquiterpenic alcohol   |
| Ledol                                | 0.04          | 0.12          | Sesquiterpenic alcohol   |
| Unknown                              | 0.03          |               | Oxygenated sesquiterpene |
| Rosifoliol                           | 0.06          | 0.05          | Sesquiterpenic alcohol   |
| Muurola-4,10(14)-dien-1 $\beta$ -ol? | 0.02          |               | Sesquiterpenic alcohol   |
| $\gamma$ -Eudesmol                   | 0.01          | 0.01          | Sesquiterpenic alcohol   |
| $\beta$ -Eudesmol                    | 0.02          | 0.03          | Sesquiterpenic alcohol   |
| $\alpha$ -Eudesmol                   | 0.01          | 0.01          | Sesquiterpenic alcohol   |
| Selin-11-en-4 $\alpha$ -ol           | 0.01          |               | Sesquiterpenic alcohol   |
| <b>Total identified</b>              | <b>99.00%</b> | <b>98.74%</b> |                          |

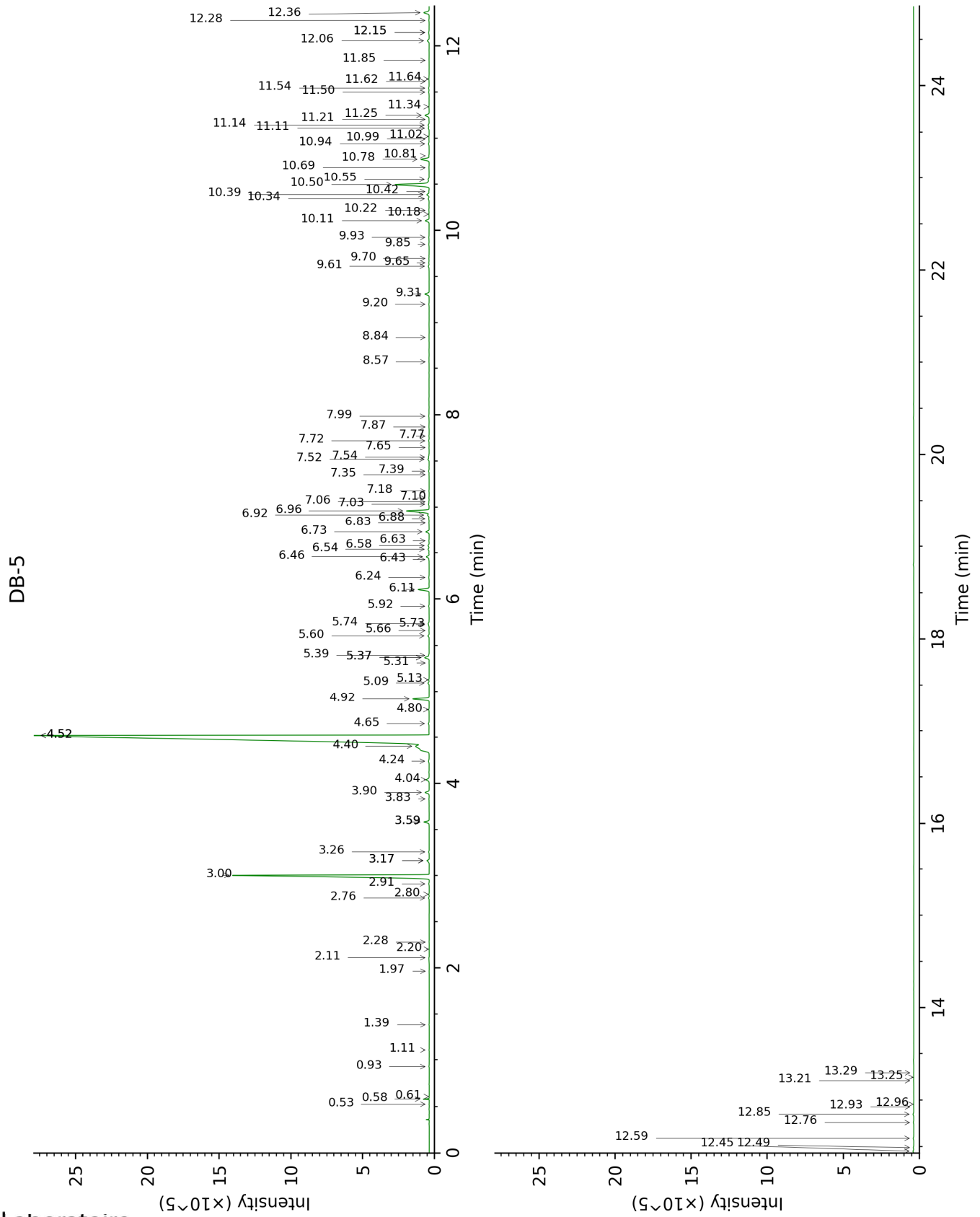
\*: Two or more compounds are coeluting on this column

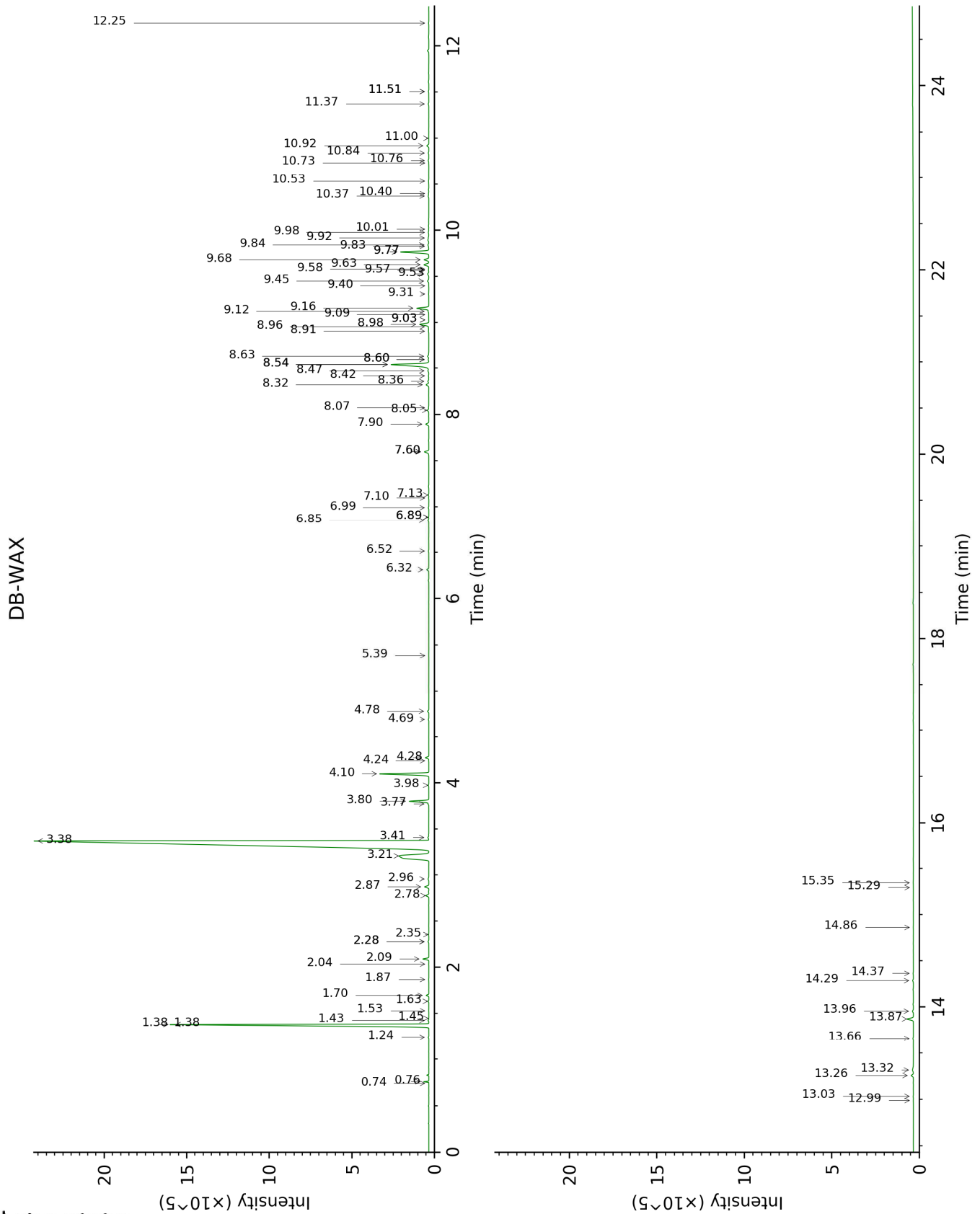
[xx]: Duplicate percentage due to coelutions, not taken account in the identified total

tr: The compound has been detected below 0.005% of total signal.

Note: no correction factor was applied

This page was intentionally left blank. The following pages present the complete data of the analysis.







FULL ANALYSIS DATA

| Identification  | Column DB-5 |      |         | Column DB-WAX |      |         |
|---|-------------|------|---------|---------------|------|---------|
|   | R.T         | R.I  | %       | R.T           | R.I  | %       |
| Isobutanol  | 0.53        | 620  | tr      | 2.04          | 1065 | 0.01    |
| Isovaleral  | 0.58        | 640  | 0.13    | 0.76          | 890  | 0.14    |
| 2-Methylbutyral   | 0.61        | 650  | tr      | 0.74          | 883  | tr      |
| Isoamyl alcohol   | 0.93        | 728  | 0.02    | 3.41          | 1180 | 0.06    |
| Toluene   | 1.11        | 755  | 0.01    | 1.45          | 1007 | 0.01    |
| Hexanal   | 1.39        | 796  | 0.01    | 1.87          | 1049 | 0.01    |
| (3Z)-Hexenol  | 1.97        | 849  | 0.01    |               |      |         |
| Isovaleric acid   | 2.11        | 862  | 0.05    |               |      |         |
| Hexanol   | 2.20        | 870  | 0.01    | 5.39          | 1324 | 0.01    |
| Isoamyl acetate   | 2.28        | 876  | 0.01    | 2.36          | 1097 | 0.02    |
| Hashishene  | 2.76        | 914  | 0.04    | 1.38*         | 999  | 15.15   |
| Tricyclene  | 2.80        | 917  | 0.02    | 1.24          | 976  | 0.03    |
| $\alpha$ -Thujene   | 2.91        | 924  | 0.03    | 1.42          | 1005 | 0.03    |
| $\alpha$ -Pinene  | 3.00        | 931  | 14.99   | 1.38*         | 999  | [15.15] |
| Camphene  | 3.17*       | 942  | 0.16    | 1.70          | 1032 | 0.12    |
| $\alpha$ -Fenchene  | 3.17*       | 942  | [0.16]  | 1.63          | 1026 | 0.04    |
| Thuja-2,4(10)-diene   | 3.26        | 948  | 0.03    | 2.28*         | 1089 | 0.05    |
| $\beta$ -Pinene   | 3.59*       | 970  | 0.33    | 2.09          | 1071 | 0.31    |
| Sabinene  | 3.59*       | 970  | [0.33]  | 2.28*         | 1089 | [0.05]  |
| <i>trans</i> -para-Menthane   | 3.84        | 987  | 0.01    | 1.53          | 1015 | 0.01    |
| Myrcene   | 3.90        | 992  | 0.28    | 2.87          | 1138 | 0.26    |
| $\alpha$ -Phellandrene  | 4.04        | 1001 | 0.22    | 2.78          | 1131 | 0.17    |
| $\alpha$ -Terpinene   | 4.24        | 1014 | 0.06    | 2.96          | 1145 | 0.05    |
| para-Cymene   | 4.40        | 1024 | 2.70    | 4.10          | 1232 | 2.81    |
| Limonene  | 4.52*       | 1031 | 68.44   | 3.21          | 1165 | 4.81    |
| 1,8-Cineole   | 4.52*       | 1031 | [68.44] | 3.38          | 1178 | 63.30   |
| (Z)- $\beta$ -Ocimene   | 4.65        | 1040 | 0.04    | 3.78          | 1208 | 0.04    |
| (E)- $\beta$ -Ocimene   | 4.80        | 1049 | 0.03    | 3.98          | 1223 | 0.03    |
| $\gamma$ -Terpinene   | 4.92        | 1056 | 1.00    | 3.80          | 1210 | 1.10    |
| Unknown [m/z 79, 93 (60), 43 (40), 94 (35), 137 (33), 77 (26), 91 (20), 152 (18)] | 5.09        | 1068 | 0.08    | 4.78          | 1280 | 0.08    |
| <i>cis</i> -Linalool oxide (fur.)   | 5.13        | 1070 | 0.03    | 6.52          | 1406 | 0.03    |
| Isoterpinolene  | 5.31        | 1081 | 0.01    | 4.24          | 1242 | 0.01    |
| Terpinolene   | 5.37*       | 1085 | 0.33    | 4.28          | 1244 | 0.19    |
| para-Cymenene   | 5.37*       | 1085 | [0.33]  | 6.32          | 1391 | 0.13    |
| <i>trans</i> -Linalool oxide (fur.)   | 5.39        | 1087 | 0.03    | 6.89*         | 1434 | 0.02    |
| Linalool  | 5.60        | 1100 | 0.08    | 8.05          | 1520 | 0.09    |
| Unknown [m/z 43, 59 (37), 79 (33), 91 (32), 119 (31)...]                          | 5.66        | 1104 | 0.02    | 8.96          | 1591 | 0.02    |

|   |      |      |      |        |      |        |
|---|------|------|------|--------|------|--------|
| Isoamyl isovalerate   | 5.73 | 1108 | 0.03 | 4.69   | 1274 | 0.03   |
| endo-Fenchol  | 5.74 | 1108 | 0.07 | 8.36   | 1545 | 0.06   |
| $\alpha$ -Campholenal   | 5.92 | 1120 | 0.04 | 6.99   | 1441 | 0.03   |
| <i>trans</i> -Pinocarveol   | 6.11 | 1132 | 0.75 | 9.16   | 1607 | 0.77   |
| Isopulegol  | 6.24 | 1140 | 0.04 | 8.07   | 1523 | 0.02   |
| Citronellal   | 6.43 | 1153 | 0.02 | 6.89*  | 1434 | [0.02] |
| Pinocarvone   | 6.46 | 1155 | 0.19 | 7.90   | 1509 | 0.19   |
| Borneol   | 6.54 | 1160 | 0.08 | 9.77*  | 1657 | 1.76   |
| $\delta$ -Terpineol   | 6.58 | 1163 | 0.08 | 9.45   | 1631 | 0.10   |
| Isopinocampone  | 6.63 | 1166 | 0.02 | 7.60*  | 1486 | 0.30   |
| Terpinen-4-ol   | 6.73 | 1172 | 0.23 | 8.54*  | 1559 | 3.00   |
| Cryptone  | 6.83 | 1178 | 0.02 | 9.09   | 1602 | 0.02   |
| <i>para</i> -Cymen-8-ol   | 6.88 | 1182 | 0.03 | 11.51* | 1803 | 0.03   |
| <i>trans</i> -Isocarveol  | 6.92 | 1184 | 0.12 | 10.92  | 1753 | 0.13   |
| $\alpha$ -Terpineol   | 6.96 | 1187 | 1.68 | 9.77*  | 1657 | [1.76] |
| Myrtenal  | 7.03 | 1192 | 0.04 | 8.60*  | 1563 | 0.04   |
| Myrtenol  | 7.06 | 1194 | 0.02 | 10.84  | 1746 | 0.04   |
| $\alpha$ -Phellandrene epoxide                                    | 7.10 | 1196 | 0.02 | 11.00  | 1760 | 0.01   |
| Verbenone   | 7.18 | 1201 | 0.01 | 9.58   | 1642 | 0.01   |
| Unknown [m/z 107, 79 (99), 91 (57), 94 (54), 135 (44), 150 (44)]  | 7.35 | 1213 | 0.01 |        |      |        |
| <i>trans</i> -Carveol   | 7.39 | 1215 | 0.04 | 11.37  | 1792 | 0.04   |
| Unknown [m/z 43, 135 (82), 91 (68), 107 (58), 79 (55), 150 (49)]  | 7.52 | 1224 | 0.09 |        |      |        |
| <i>cis</i> -Isocarveol  | 7.54 | 1226 | 0.04 |        |      |        |
| Unknown [m/z 91, 92 (87), 137 (57), 81 (47)... 152 (17), 178 (1)] | 7.65 | 1232 | 0.01 |        |      |        |
| Carvone   | 7.72 | 1237 | 0.03 | 9.92   | 1669 | 0.05   |
| Carvotanacetone   | 7.77 | 1241 | 0.01 | 9.40   | 1627 | 0.01   |
| Piperitone  | 7.87 | 1247 | 0.02 | 9.83   | 1662 | 0.02   |
| Geraniol  | 7.98 | 1255 | 0.03 | 11.51* | 1803 | [0.03] |
| <i>trans</i> -Pinocarvyl acetate                                  | 8.57 | 1295 | 0.01 | 9.03*  | 1597 | 0.01   |
| $\delta$ -Terpinyl acetate  | 8.84 | 1314 | 0.01 | 9.03*  | 1597 | [0.01] |
| exo-2-Hydroxycineole acetate                                      | 9.20 | 1339 | 0.02 | 10.01  | 1677 | 0.02   |
| $\alpha$ -Terpinyl acetate  | 9.31 | 1347 | 0.30 | 9.68   | 1650 | 0.30   |
| Isoledene   | 9.61 | 1368 | 0.06 | 6.85   | 1431 | 0.06   |
| $\alpha$ -Copaene   | 9.65 | 1371 | 0.03 | 7.13   | 1451 | 0.03   |
| 7-Cubebene  | 9.70 | 1374 | 0.01 | 7.10   | 1449 | 0.02   |
| Geranyl acetate   | 9.85 | 1385 | 0.03 | 10.53  | 1720 | 0.02   |
| Unknown [m/z 93, 122 (98), 161                                    | 9.92 | 1390 | 0.03 |        |      |        |

|   |        |      |        |       |      |        |
|---|--------|------|--------|-------|------|--------|
| (98), 107 (86), 95<br>(46), 105 (72)...<br>204 (34)]  |        |      |        |       |      |        |
| α-Gurjunene   | 10.10  | 1403 | 0.28   | 7.60* | 1486 | [0.30] |
| Unknown [m/z<br>119, 107 (86), 105<br>(85), 93 (78), 189<br>(66), 81 (65), 121<br>(64)... 204 (23)] | 10.18  | 1408 | 0.02   |       |      |        |
| β-Caryophyllene   | 10.22  | 1411 | 0.03   | 8.42  | 1550 | 0.02   |
| γ-Maaliene  | 10.34  | 1420 | 0.07   | 8.47  | 1554 | 0.06   |
| β-Gurjunene   | 10.39  | 1424 | 0.17   | 8.32  | 1542 | 0.17   |
| α-Maaliene  | 10.42  | 1426 | 0.02   | 8.60* | 1563 | [0.04] |
| Aromadendrene   | 10.50  | 1432 | 2.85   | 8.54* | 1559 | [3.00] |
| Selina-5,11-diene   | 10.55  | 1436 | 0.08   | 8.63  | 1566 | 0.10   |
| α-Humulene  | 10.68  | 1446 | 0.03   | 9.31  | 1620 | 0.02   |
| allo-<br>Aromadendrene  | 10.78  | 1453 | 0.63   | 8.98  | 1593 | 0.62   |
| Valerena-4,7(11)-<br>diene  | 10.81  | 1456 | 0.02   | 8.91  | 1588 | 0.03   |
| γ-Gurjunene   | 10.94  | 1465 | 0.05   | 9.12  | 1604 | 0.04   |
| Unknown [m/z<br>189, 145 (96), 105<br>(87), 131 (87), 133<br>(73), 160 (70)...<br>204 (44)]         | 11.00  | 1469 | 0.02   |       |      |        |
| γ-Murolene  | 11.02  | 1471 | 0.02   | 9.57  | 1641 | 0.02   |
| β-Selinene  | 11.11  | 1478 | 0.06   | 9.84  | 1663 | 0.06   |
| allo-Aromadendr-<br>9-ene   | 11.14  | 1480 | 0.08   | 9.53  | 1637 | 0.09   |
| Phenylethyl<br>isovalerate  | 11.21  | 1485 | 0.01   | 12.99 | 1936 | 0.01   |
| Viridiflorene   | 11.25  | 1488 | 0.33   | 9.63  | 1646 | 0.33   |
| α-Murolene  | 11.34  | 1495 | 0.02   | 9.98  | 1674 | 0.04   |
| γ-Cadinene  | 11.50  | 1507 | 0.04   | 10.37 | 1706 | 0.04   |
| Unknown [m/z<br>159, 145 (91), 131<br>(67), 105 (46), 202<br>(43)]                                  | 11.54  | 1511 | 0.05   | 10.76 | 1740 | 0.04   |
| <i>trans</i> -<br>Calamenene  | 11.62  | 1516 | 0.01   |       |      |        |
| δ-Cadinene  | 11.64  | 1518 | 0.03   | 10.40 | 1708 | 0.02   |
| α-Cadinene  | 11.84  | 1534 | 0.01   | 10.73 | 1737 | 0.01   |
| Epiglobulol?  | 12.06  | 1551 | 0.14   | 13.26 | 1961 | 0.14   |
| Palustrol   | 12.15* | 1558 | 0.05   | 12.25 | 1869 | 0.02   |
| Maaliol   | 12.15* | 1558 | [0.05] | 13.03 | 1941 | 0.02   |
| Spathulenol   | 12.28  | 1568 | 0.03   | 14.37 | 2067 | 0.03   |
| Globulol  | 12.36  | 1575 | 0.42   | 13.87 | 2019 | 0.40   |
| Viridiflorol  | 12.45  | 1582 | 0.06   | 13.96 | 2027 | 0.07   |
| Cubeban-11-ol   | 12.49  | 1585 | 0.04   | 13.66 | 1999 | 0.03   |
| Ledol   | 12.59  | 1593 | 0.04   | 13.32 | 1967 | 0.12   |
| Unknown [m/z  | 12.76  | 1607 | 0.03   |       |      |        |

|  |       |      |               |       |      |               |
|--|-------|------|---------------|-------|------|---------------|
| 94, 91 (83), 105<br>(78), 79 (75), 107<br>(62), 120 (58)...<br>218 (11)] |       |      |               |       |      |               |
| Rosifoliol   | 12.85 | 1614 | 0.06          | 14.29 | 2059 | 0.05          |
| Muurola-4,10(14)-<br>dien-1 $\beta$ -ol?                                 | 12.93 | 1620 | 0.02          |       |      |               |
| $\gamma$ -Eudesmol   | 12.96 | 1623 | 0.01          | 14.86 | 2116 | 0.01          |
| $\beta$ -Eudesmol  | 13.21 | 1644 | 0.02          | 15.34 | 2164 | 0.03          |
| $\alpha$ -Eudesmol   | 13.25 | 1647 | 0.01          | 15.29 | 2159 | 0.01          |
| Selin-11-en-4 $\alpha$ -ol   | 13.29 | 1651 | 0.01          |       |      |               |
| <b>Total identified</b>  |       |      | <b>99.00%</b> |       |      | <b>98.74%</b> |
| <b>Total reported</b>  |       |      | <b>99.35%</b> |       |      | <b>98.88%</b> |

\*: Two or more compounds are coeluting on this column

[xx]: Duplicate percentage due to coelutions, not taken account in the identified total

tr: The compound has been detected below 0.005% of total signal.

Note: no correction factor was applied

R.T.: Retention time (minutes)

R.I.: Retention index