**Supplementary Table S6**. Identification of distinctive odour-active compounds detected from garlic cloves infected with *Ditylenchus destructor* using GC-O, GC-F, GC-MS and databases.

|  |  |  |  |
| --- | --- | --- | --- |
| Step | Procedure | Identification method | Fraction number |
| 1 | 2 | 3-1 | 3-2 | 4 |
| Step 1 |  |  |  |  |  |  |  |  |
|  | Measurement | GC-O (DB-5MS) a | Observed RI g) | 930 | 1113 | 1167 | 1167 | 1372 |
|  |  |  | Observed odour character | Garlic/fishy/metal | Garlic | Fishy/metal | Fishy/metal | Spicy |
|  |  | GC-O (InertCap Pure-WAX) b | Observed RI | 1292 | 1501 | 1563 | 1617 | 2183 |
|  |  |  | Observed odour character | Garlic/fishy/metal | Garlic | Fishy | Fishy | Spicy/seasoning |
|  | Database search | AroChemBase c | Candidate | Allyl methyl disulfide | (E)-1-Allyl-2-(prop-1-en-1-yl)disulfane | 2-Ethyl[1,3]dithiane | Allyl methyl trisulfide | Eugenol |
|  |  |  | Molecular weight | 120 | 146 | 148 | 152 | 164 |
|  |  |  | Registered RI (DB-5MS) | 920 | 1103 h | 1130 i | 1142 | 1380 |
|  |  |  | Registered RI (DB-WAX) | 1282 | Not available | Not available | 1592 | 2169 |
|  |  |  | Registered odour character | Onion/garlic | Not available | Not available | Onion/garlic/cream | Camphor/spicy/woody |
|  |  |  |  |  |  |  |  |  |
| Step 2 |  |  |  |  |  |  |  |  |
|  | Measurement | GC-MS (InertCap Pure-WAX/EI) b, d | Observed RI | 1298 | 1506 | 1556 | 1617 | 2174 |
|  | Database search | NIST library | Candidate | Allyl methyl disulfide | (E)-1-Allyl-2-(prop-1-en-1-yl)disulfane | 2-Ethyl[1,3]dithiane | Allyl methyl trisulfide | Eugenol |
|  |  |  | Similarity | 91% | 92% | 91% | 93% | 77% |
|  |  |  | Molecular weight | 120 | 146 | 148 | 152 | 164 |
|  | Measurement | GC-MS (InertCap Pure-WAX/CI) b, e | Ion detected | 121 | 147 | 149 | 153 | 165 |
|  |  |  | Chemical form | [*M*+H]+ | [*M*+H]+ | [*M*+H]+ | [*M*+H]+ | [*M*+H]+ |
|  |  |  |  |  |  |  |  |  |
| Step 3 |  |  |  |  |  |  |  |  |
|  | Confirmation | Authentic standard f | Compound | Allyl methyl disulfide | (E)-1-Allyl-2-(prop-1-en-1-yl)disulfane | 2-Ethyl[1,3]dithiane | Allyl methyl trisulfide | Eugenol |
|  |  |  | Availability | Available | Not available | Available | Not available | Available |
|  |  | GC-O (DB-5MS) | Observed RI | 932 |  | 1233 |  | 1367 |
|  |  |  | Observed odour character | Fishy/vegetable/garlic |  | Bitter, garlic |  | Spice |
|  |  | GC-MS (InertCap Pure-WAX/EI) | Observed RI | 1294 |  | 1763 |  | 2171 |
|  |  |  | Mass spectra | Matched |  | Not matched |  | Matched |
|  |  |  | Matching | Matched |  | Not matched |  | Matched |
|  |  |  |  |  |  |  |  |  |
| Step 4 |  |  |  |  |  |  |  |  |
|  | Identification |  | Status | Identified | Tentatively identified | Unknown | Tentatively identified | Identified |
|  |  |  | Compound | Allyl methyl disulfide | (E)-1-Allyl-2-(prop-1-en-1-yl)disulfane | – | Allyl methyl trisulfide | Eugenol |
|  |  |  | CAS number | 2179-58-0 | 122156-02-9 | – | 34135-85-8 | 97-53-0 |
|  |  |  | Reference j | Suarez *et al*. (1999) | Wang *et al*. (2019) | – | Harmita *et al*. (2020) | Abe *et al*. (2020) |

a Analytical result of direct injection.

b Analytical result of enriched fraction.

c Information in odour compound database search (AroChemBase).

d Ion detected by electron impact (EI) mode.

e Ion detected by chemical ionisation (CI) mode.

f Authentic standard attempted to obtain.

g Retention index.

h RI with HP-5 registered in NIST library.

i RI with DB-1.

j Reference reporting the chemicals in garlic.