

FlavourSpec®: Your Olive Oil Testing Device

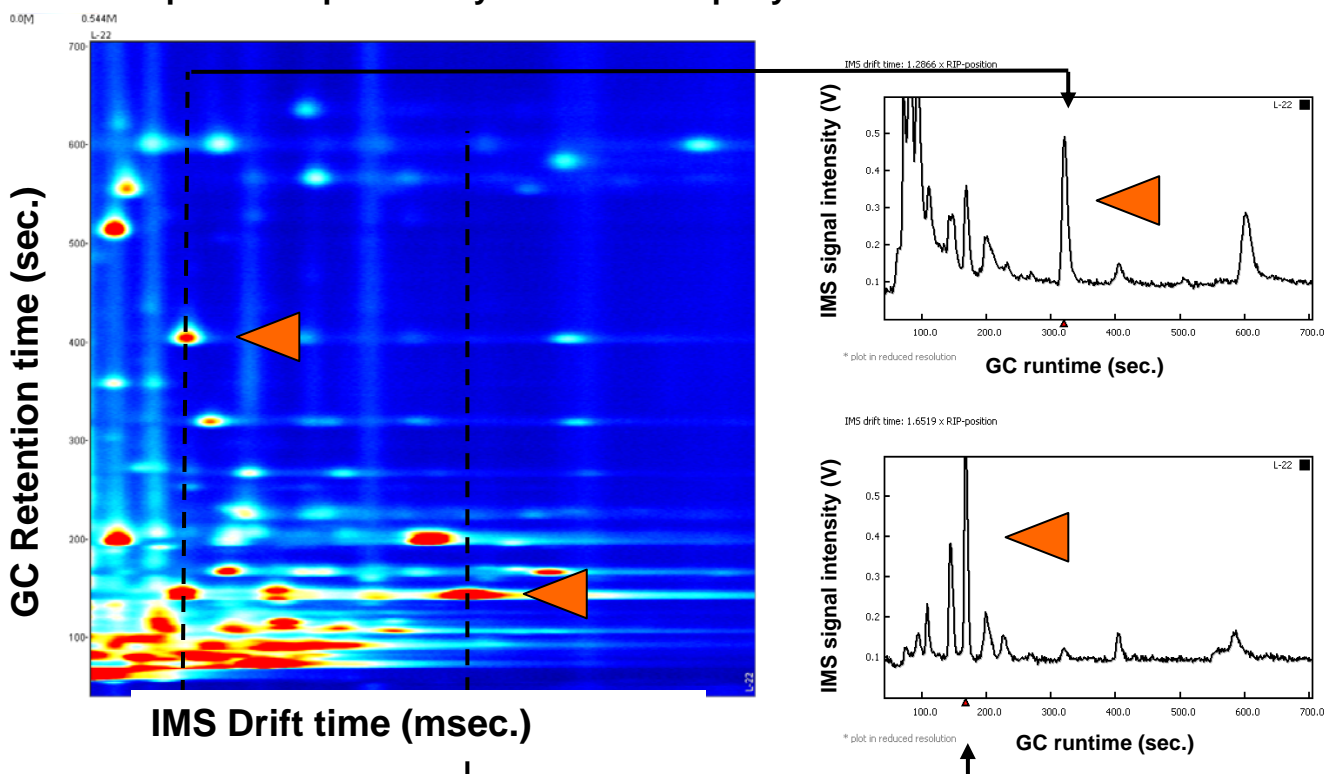
High quality native olive oils is a pure and healthy natural product that stands out due to a complex and rich flavour. To authenticate and assure the best quality is of outmost importance for every party of its supply chain.

The **FlavourSpec®** combines a fast Gas Chromatograph (GC) with an Ion-Mobility-Spectrometer (IMS) which offers:

- an easy use through direct headspace sampling
- 2-dimensional separation of GC plus IMS
- selective detection of specific compounds in complex matrices
- quantification of individual volatiles down to the low ppb_v level
- fingerprint analysis for product authentication
- impartial flavour documentation



FlavourSpec headspace Analysis of an exemplary Olive Oil



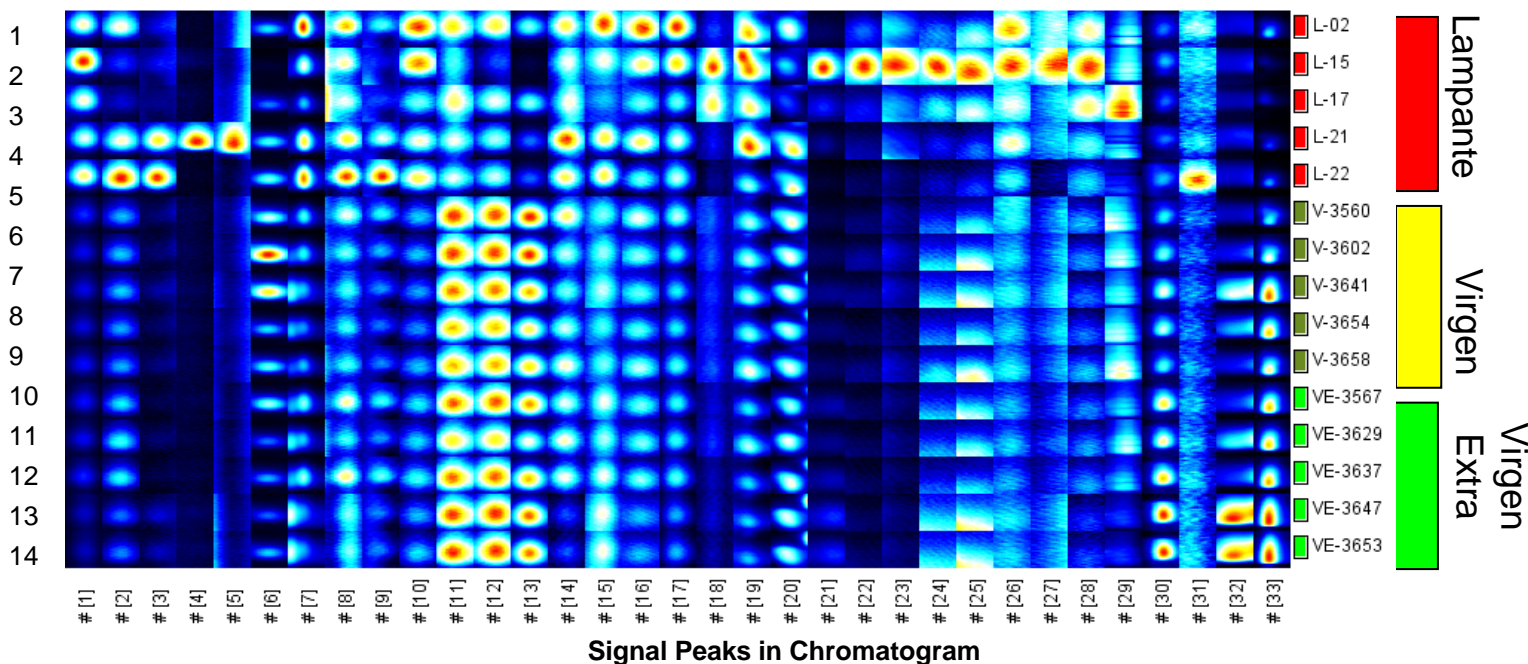
Workflow FlavourSpec®:

- Equipped with an auto-sampler of up to 96 positions so that samples can be tested automatically.
- No sample pre-treatment needed. Just fill 5ml of the oil sample into a vial. Conditioning for headspace equilibration is carried out by the auto sampler.

Result:

The following figure visualizes the results of a measurement series from different olive oils as signal peak gallery of individual VOCs. Each row represents the set of selected signals of one measurement / sample, while the columns show the same signal peak at a specific retention and drift time for all samples.

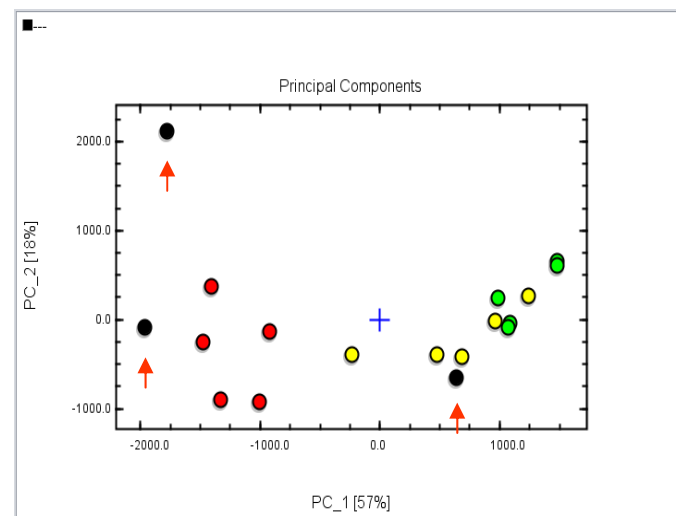
This allows to set up a data base according to specific criteria and reliably categorize unknown samples.



Classification:

Besides its analytical software 'LAV' (scientific user), G.A.S. offers a fully automated data interpretation tool 'FlavourMatch' (quality control) that are applicable according to the user's focus.

Concerning the olive oil analysis the occurrence or absence of specific compounds or an overall comparative pattern analysis will classify unknown samples. On the right the signal pattern was analyzed by Principal Component Analysis (PCA), revealing that two of the not-classified samples can be assigned as *lampante* and one as *virgen* olive oil.



Categorization of unclassified samples

Further Applications:

- Quality and purity monitoring of commodities
- Assure a distinctive flavour
- Supervising a constant blending