

Testing services – Chemistry

Flavour and fragrance analysis

Whether you need to assure safety and quality of your products, develop a new ingredient formulation or identify organoleptic defects, Silliker can help you with analysis and studies on aromatizing substances and volatile compounds in foodstuffs, non-food and packaging materials.



Quality and conformity assessment of food and non food products

To assess your product's quality, Silliker performs shelf-life studies to address flavour or aromatic variations over time in food, cosmetics and detergents and can help you verify the authenticity of fragrances in natural raw material used in cosmetics or foodstuffs.

Flavour stability studies are used to verify whether a flavouring or a semi-finished product retains the aromatic profile during production processes (eg. sterilization, heating, pasteurization).

Furthermore, Silliker performs quantification of regulated volatile compounds in officinal plants, medicinal plants extracts and their derivatives (e.g. herbal and dietary products) by means of validated internal methods in conformity with Regulation (EC) 1334/2008 on flavourings and certain food ingredients with flavouring properties for use in food and on foods and Cosmetic Directives 76/768/CEE related to aromatic substances used in cosmetic products and detergents that may cause allergies.

Moreover analysis are performed to detect flavour changes within the same batch or between different batches to assist your production quality controls.

Product development

Developing flavour formulations can be a challenging task. Silliker, in partnership with clients, monitors flavour performance in new ingredient formulations and can give recommendations on how to improve the aromatic profile.

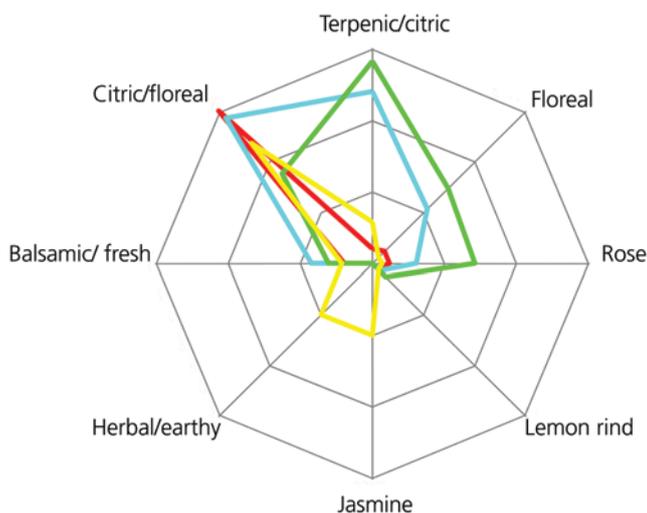


Table 1: Example of Descriptive chemical analysis of a lemon tea sample (chemical-sensory correlation according to the quantitative distribution of the aromatizing compounds).

Application field:

- ▷ Food matrices raw materials, beverages, all kind of foods, flavourings and flavouring preparations
- ▷ Non-food products fragrances, cosmetic products, household products, textiles, toys etc.

Correlation table

Descriptive note	Compound/s
Terpenic/citric	Phellandrenes
Floreal	Linalool
Rose	Terpene alcohols
Lemon rind	Citral/aldehydes
Jasmine	Jasmone
Herbal/earthy	Linalool oxides
Balsamic/fresh	Volatile oxigenated
Citric/floreal	Terpineols

- A (Leader)
- B
- C
- D

Instrumental analysis of the volatile composition is also a complementary tool to descriptive sensory analysis. The flavour lab can decipher the flavour profile both qualitatively and quantitatively, identify the organoleptically interesting flavours and distinguish them from less relevant volatile compounds.

Evaluation of product defects

In order to identify the nature of off-flavours, Silliker can help you by performing organoleptic analysis and volatile compounds screening in all kind of food products and non-food products such as textiles, paperware and toys. During such investigations, microbiological spoilage processes may also be identified and if requested, additional micro testing is available. Once the defect cause is recognized, our experts can advise further investigation steps or indicate possible sources for clients to put corrective actions in place.

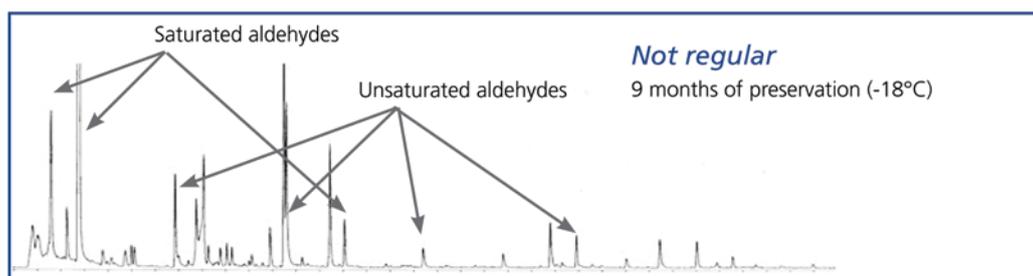
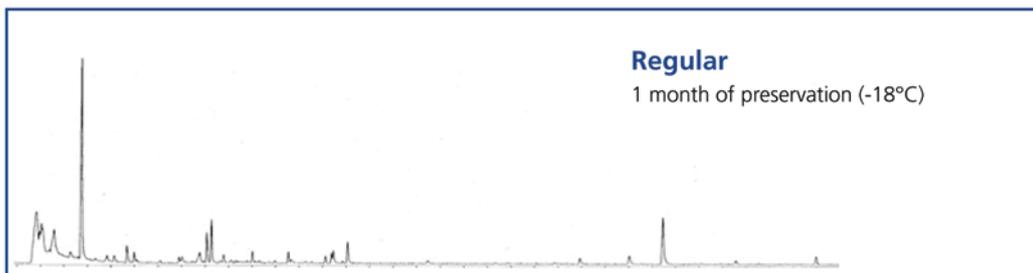


Table 2 & 3: Shelf-life study: oxidative degradation of the lipidic fraction in frozen lasagne (18 months). After 9 months the screening of volatile compounds revealed the presence of aldehydes which, in this case, were related to the direct contact with the plastic film used for sealing that also did not provide adequate protection from elements which causes oxidation; light, heat and air.

Technical information

Silliker adopts different analytical techniques such as GC/FID, GC/FPD, GC/MS and chiral gas chromatography to determine volatile compounds and/or aromatizing substances. The studies on aromatizing substances and volatile compounds are performed on the basis of extraction protocols/analysis specifically developed according to the matrices, and the aromatizing substances.

Swift Silliker can courier samples to Italy on your behalf.

To learn how our ISO 17025 accredited laboratories can support your safety and quality programs, contact Megan Smith on +27 21 83 8436 or email Megan at megan@swift.co.za with your specific queries and for shipment of your samples to our Global Network.

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