

AROMA DISCUSSION* – GFL'S¹ POINT OF VIEW

Of late – and instigated by published test results on orange juices and apple drinks of Stiftung Warentest² in July 2006 and May 2007 as well as by the published test results on apple schorle published in Öko-Test³ in July 2007 – an increasing number of voices argue that a sufficient aroma restoration in fruit juices from concentrate has to be judged by the concentrations of various flavour components or by specific quantity parameters. This concept deviates from the hitherto common procedure whereby a sensory test performed by skilled taster staff forms the basis for this judgement.

As this development is unsettling the fruit-juice industry, we think it necessary to clearly articulate our point of view on this matter. Also, we hope to get a broad discussion going in this way.

First of all the question arises to what degree an analytical approach is appropriate. Also, there is the need to establish whether such an approach is at all required according to the stipulations of the Fruit-Juice Directive (Council Directive 2001/112/EC of 20. December 2001 relating to fruit juices and certain similar products intended for human consumption) respectively the according national regulations.

The Fruit-Juice Directive (see above) says that a fruit juice from concentrate “must display organoleptic and analytical characteristics at least equivalent to those of an average type of juice obtained from fruits of the same kind”.

Accordingly, there is the need to clarify: What is an ‘average’ juice? In case of an analytical interpretation, the following questions arise. Are there any regions of origin or fruit varieties relating to the aroma that have to be taken into consideration? Are there any differences between naturally cloudy juice and clear juice? In what way do various processing technologies, different packagings and best before dates influence the aroma? Which components should be selected for the evaluation, and how do they at all influence the aroma? It is only with these pieces of information that a sound, scientifically secured body of data may be compiled to attempt the analytical

assessment of aroma quality. Such a body of data, however, does not exist. And even if it was compiled, the question remains whether it would be suitable. The upshot would be that ‘correct’ aromatization is determined in relation to the content of certain aromatic components in an ‘average’ juice. This, however, means that – given an ideal Gaussian distribution – half of the products need to be ‘over-aromatized’. Is it sensible to standardize a natural product in such a way? Would not then the requirements for juice from concentrate be higher than for ‘true-to-nature’ juice not made from concentrate?

So far, we think it does not seem appropriate to forsake the current practice of judging similar organoleptic properties – without prejudice to the issue of lacking data. Unrelated to that is the question whether the Fruit-Juice Directive (see above) at all requires such a procedure.

The currently valid Fruit-Juice Directive (see above) no longer equates fruit juice not from concentrate (NFC) with fruit juice from concentrate (no analogy anymore). Thus, the legislator takes into account that a concentrate can only to a certain extent be reconstituted to an original single-strength fruit juice. This is expressed in the definition for fruit juice from concentrate, where the final product has to ‘at least show similar organoleptic and analytical properties’ compared to not-from-concentrate juice of the same kind. The distinction made between ‘organoleptic’ and ‘analytical’ only makes sense if the assessment of ‘similar organoleptic properties’ is not based on ‘similar analytical properties’. If it were based on the latter, the simple requisite ‘similar analytical properties’ would suffice. Thus, to judge the ‘similarity’ of aromas, nothing but sensorics are relevant – and not ‘analytical properties’.

In this respect, the term ‘similar’ means nothing less than ‘the same properties in the main’. This is equal to: this product is to display the fruit-specific smell and taste, in fact unrelated to the amounts of certain specific aromatic substances.

Accordingly, also the stipulations of the Fruit-Juice Directive (see above) do not require any analytical data

* (Translation from German original by Otto Vriend; also published in FLÜSSIGES OBST No. 11/2007)

but exclusively skilled sense of taste to ascertain 'similar organoleptic properties':

This road of action also avoids scarcely practical test results, e.g. the ones of the orange-juice test by the Stiftung Warentest dated July 2006. These results downgrade products judged favourably by official tasters and consumers alike just because of missing 'aromatic components', which obviously had no bearing what so ever on any organoleptic properties.

To avoid any misunderstanding, we want to clearly state that this statement is in no way at all intended to question aroma analysis as such. For it is and has been an indispensable part in authenticity checks. It is only that an analytical procedure should not be stretched beyond what it can offer, and taking it to replace sensorics is doing just that. Something the example of the orange-juice test mentioned above reveals in all its distinctness.

- 1 Gesellschaft für Lebensmittelforschung mbH (Foodstuff Research Ltd. Company)
- 2 Stiftung Warentest
(Foundation for Comparative Product Testing and title of the magazine issued)
- 3 Öko-Test (Eco-Test Publishing House Ltd and title of the magazine issued)

www.gfl-berlin.com

GfL – Gesellschaft für Lebensmittelforschung

GfL was founded in 1984 as a private counselling and service company which is autonomously and independently active for the entire food industry. The objective target is to provide comprehensive services beyond analytical measurements but to give professional solutions for bordering fields.

Key activities:

GfL is one of the world wide leading laboratories in the field of fruit and vegetable juice. We analyse about 15.000 samples per year on adulterations and authenticity. Since 1990 another main focus of GfL is the residue analysis, where we center on pesticides and mycotoxines in baby food and organic food. Analysis of soft drinks, spirituous beverages, jams and meat products come in third place.

Customer profile:

GfL as a service enterprise is active for the entire food industry. In the field of fruit juice our clientele is naturally global. The percentage of international customers is near 40%. We work for growers and distributors in all major fruit exporting countries. Ranging from Brasil and Argentina to Florida, from Finland to Greece, Northern Africa, Middle East via China, Vietnam, Thailand to Australia. Furthermore the processing and bottling industry makes use of our services throughout Europe and other parts of the world. In national terms we are also operating as quality assurance for several trade chains. These activities do not only cover juices but almost the entire pallet of foods.

www.fruit-processing.com

INTAKE OF JUICE AND NECTAR FORECAST 2007
Percentage of world total

