

What are Flavourings? How are they used?

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Spring Conference 20th April 1999

The UK Flavourings in Food Regulations of 1992 (based on EEC Flavours Directive 88/1388) defines flavourings as "materials used or intended for use in or on food to impart odour, taste or both" except "any edible substance (including herbs and spices) or product, intended for human consumption as such, with or without reconstitution" or "any substance which has exclusively a sweet, sour or salt taste".

Each member state of the EU has similar flavourings legislation. Food labelling law, on the other hand, is not harmonised throughout Europe and this often brings confusion which I will attempt to address later in my paper.

In a beverage product, flavouring is often the only ingredient that gives the end product character and definition - water, sugar, acid and flavouring - but in baked goods, which derive some of their taste and flavour from the basic raw material matrix, the role of the flavouring is generally that of a blender, rounder or improver although it can be more than that, especially in bakery filling applications. Whatever, it is my proposition today that the true job of a flavouring is to press the "I like it" button in the consumer's head and to give identity and appeal to a product to make it stand out in the market place and be preferred. The quicker that response and the better that recognition, in my opinion, the better is that flavouring.

Other regulations, or proposed regulations, to concern us are many but today I will concentrate on just three of them which have or will have some impact on the baking industry. Firstly, the Food Labelling Regulations of 1996. Secondly, the proposed new EU Additives for Flavouring Legislation (a maximum level announced for propylene glycol (PG), the universal flavouring solvent) and thirdly, any forthcoming Environmental Legislation based on ISO14000, etc.

The EU splits flavourings into five categories - Natural, Nature Identical, Artificial, Process and Smoke flavourings. Process flavourings can be used to add brown notes to baked goods but today I will concentrate on the two categories most widely used in the baking industry - Natural and Nature Identical. Using vanilla as an example - one of my Company's strongest selling flavour types - these are defined as follows.

Natural = pure vanilla extract or oleoresin with or without the addition of other natural flavouring substances.

Nature identical = vanilla extract with the addition of one or more flavouring components identical to substances occurring in nature or simple mixtures of these nature identical flavouring components. This means all the components are identified in nature - part of the food chain - but are produced as synthetic chemicals from petrochemical feed stock. The main component of NI vanilla flavourings is vanillin.

Artificial vanilla flavourings, to complete the picture, have components that taste like vanilla but have never been identified in nature - for example, ethyl vanillin, a cheaper alternative to vanillin.

When it comes to naming and labelling food products in the UK, many people believe a natural flavouring is required but that is not always the case. Some natural flavourings may be "UK depictable" whereas others may not and certain NI flavourings can also be food depictable - it depends on the amount of natural material from the named source the product contains and how much of it is perceived in the end product.

Natural flavourings come in three different types but only two are fully recognised in EU law. Firstly, 90:10 "Natural Vanilla flavourings" - derived at least 90% from natural vanilla with 0 to 10% of other

natural components added and, secondly, "Natural Flavourings Vanilla type" which are less than 90% vanilla derived. Indeed, economic versions of this second type may contain no real vanilla at all but only natural vanillin derived from a non-vanilla source such as turmeric. This latter class, of course, cannot be described as vanilla, only as "natural flavouring".

Another class of natural flavourings that allows for food depiction are the so called from the named fruit (FTNF) or from the named source (FTNS) flavourings. These are 100% derived from the named food without any other flavour addition. The 90:10 Natural Vanillas allow for pictures to be depicted and the naming of the product as vanilla rather than vanilla flavour when the majority of the perceived flavour - at least 51 % of it - is vanilla derived. This is a difficult subject to grasp but a handout is available that spells it out in detail. It is important to remember that the description and naming of products in the UK depends on the whole product composition, not just the flavouring, so one must look at the end product in its entirety when making such judgements.

My Company has a range of FTNF/FTNS natural flavourings, apart from their pure Vanilla Extracts, which are branded NATUROME(Tm) Essences and are available in fruit and brown forms, including tea and coffee. Such premium essences are excellent options when it comes to flavouring premium products but have one disadvantage - they lack heat stability. For this reason, we recently launched a new range of natural, heatstable NATUROME(TM) Flavourings in two versions. Firstly, a EU90:10 range which is food depictable for the UK and secondly, a more concentrated, lower dosage range which is extremely cost effective but not UK depictable unless used to boost the named food. Heat stability is conveyed to the original NATUROME Essences by adding relatively non volatile natural flavouring substances to them and by using more heat stable solvents such as propylene glycol (PG).

The range of applications for flavourings in bakery and starch based products is enormous - from bread and biscuits to toppings and truffles - but the factors to consider when choosing flavourings for a particular product are always the same. The type of application, the product composition - especially the fat and sugar content, the process including the baking temperature and the baking time and whether the flavouring is required in liquid or in powder form.

There is a current trend towards the use of flavourings and other food ingredients in encapsulated or granular powder form - fat, wax, sugar or emulsifier coated - to release at a certain temperature or to be protected from a hostile environment until very near the end of the manufacturing process but that is a subject large enough for a separate lecture and cannot be considered in depth here.

Looking at the subject of flavourings for baked goods in more detail, let us consider the European Cake market as an example. Current trends are luxury items, low fat versions, miniatures, confectionery style cake bars and home style products. Already here flavourings can help position the products and give them the right image. Natural flavourings can be used in luxury cakes; butter, cream and associated functional flavourings can be used in low fat products and brown flavourings can help give that home style, batch process taste to modern, continuous production methods. Trends in flavour types - whether to be added to the base or to be used in fillings - are brown flavourings (coffee, chocolate, vanilla, caramel and the like), fruit flavourings - especially new combinations and American and Italian styles (again brown flavourings are important here). We conduct consumer surveys on a regular basis to obtain this sort of information.

I spoke earlier of the proposed restriction on the use of the flavouring solvent PG. This is not so important in the drinks and dairy area where dosage rates are typically 0.1% or less but it will certainly have an impact in the baked goods area where use rates are typically higher and dosages of 0.3-0.4%, as consumed, are not uncommon. Given that the proposed maximum is 2000 ppm (and in some EU countries it is already restricted to just 1000 ppm) there will be the need for stronger, reduced solvent, NI flavourings. Such flavourings will also fit the needs of any forthcoming environmental legislation since more concentrated flavourings will use less solvent and that will mean less packaging, lower production and transportation costs and cleaner and greener all round.

Our range of such concentrated NI flavourings are called "PERFORMAROME" flavourings because they perform well in a wide variety of different applications, including baked goods, and due to reduction in solvent and associated lower energy costs they represent excellent value for money, another important industry trend. Using up to date raw materials that not only taste good but are cost

effective, the modern flavourist can create authentic, high impact, long lasting flavourings that work in a number of different products. Moreover, extensive sensory testing has made sure they will perform well in the strenuous processes of today's manufacturing environment. PERFORMAROME flavourings are currently available in fruit and brown versions and soon to be launched are an exotic and a citrus range - both flavour types currently in vogue.

These flavouring ranges are deliberately limited to keep them cost effective but are designed to be extremely versatile. They can be treated as individual flavourings in their own right or as modular building blocks that allow product developers to create their own tastes - coffee and chocolate to make Cappuccino, banana and toffee to make Banoffee, honey, almond and vanilla to make Nougat and so on. This "building block" approach to flavourings is a general theme in today's fast moving world of product development. Flavourings become tools that can be used in a wide number of different applications, helping the manufacturer create interesting new products without proliferating the number of flavourings used, keeping both NPD groups and purchasing managers satisfied. Also, highly concentrated flavourings based on PG are often compatible with chocolate and other high fat applications which traditionally have required a solvent change to oil.

Flavourings are a key factor in determining the consumer appeal of any new product and as consumer needs change so must flavourings change - it is a symbiotic relationship. Today the focus is on exotics, innovative new combinations, Italian and other ethnic styles, fantasy flavourings, seasonal products - making traditional products such as spice flavoured Easter Hot Cross an all year round treat by introducing them in revamped bun spice versions, or by releasing limited edition and seasonal versions of already well established brands to help maintain consumer interest in them in this information rich world we live in.

Another trend is towards the introduction of alcoholic style flavourings to cakes and fillings - amaretto and the like - to help convey a quality image to such products. Also an opportunity for champagne flavoured, millennium celebration, special editions. Quality is certainly on the consumers' mind as we approach year 2000 but so also is value for money, convenience, health, the environment and animal welfare. So, as consumers' needs change, so must the products they are offered for purchase change. We see increasing segmentation of the market place, with products designed to appeal to a focused group of consumers, increased levels of vitamin and mineral enrichment, reduced levels of fat, cholesterol, salt and caffeine, umbrella branding of well know brands and clean labelling natural claims.

An interesting case history of how flavourings can help establish new products is our NI Milk Flavouring Portfolio. Introduced on the back of our reputation for second to none Butter flavourings - and following extensive analysis of milk and milk fat - these were originally designed in modular form to add fresh, cooked, creamy, top-note or base- note milk flavours to a wide variety of dairy and baked products. But it soon became clear to both flavour house and manufacturer alike that calcium enrichment with an Orange flavouring, say, didn't communicate the right message to the consumer whereas calcium enrichment with a Milk or Milkshake flavouring not only tasted good but was innovative and clearly defined and reinforced the calcium rich message. So flavourings are not only designed for good taste, they can also be an integral part of the overall message delivered to the consumer since they can convey health, luxury, lifestyle or any other message desired.

In conclusion, I make this plea to all of you who work with flavourings. A flavour house's response to your flavouring needs can only be as good as the information received from you. You are assured of complete confidentiality when working with a reputable company - they are in it for the long term, after all - and when you relay all product information to them - country, labelling, cost, application, process conditions, desired shelf life, etc., etc. - you are much more likely to get the desired response first time around, making NPD a fast, efficient process for all concerned. Remember, we depend on you and the success of your products for our own success and from concept product to product launch we are there to help you.