The Food Commission Guide to Food

Additives

Fooling the senses

Food additives can be used to disguise the true quality of the food you are eating. For instance, these Richmond sausages contain the following additives:

● **E450** – You wouldn't expect sausages to contain added water but these low-meat (51%) sausages are practically dripping with it. The water is held in place by E450, a chemical which 'solidifies' the mixture; ● **E412** – an emulsifier which helps to hold fat and water together (the meat in these sausages is almost half fat); ● **E300 and E307 -** antioxidant vitamins which stop the fat content turning rancid. This gives the product a long shelf life before it becomes unpalatable; ● **E223** – a sulphite preservative which keeps the sausages safe to eat and prolongs their shelf life. Some people find that sulphites provoke shortness of breath and asthma; ● **E128** – to disguise the low meat content these sausages have been coloured with a synthetic chemical Azo Dye called Red 2G.

Tip – It's not just the cheaper sausages that use food additives to disguise a shortage of real ingredients. These Wall's Lean Recipe Sausages also contain added water, held in place by three different stabilisers. Unlabelled flavouring compounds have been added to top up the flavour, the sulphite E221 is used as a preservative and E120 gives a fake, meaty colour.

Who needs artificial sweeteners?

Over thousands of years our tastebuds have evolved to enjoy the sweet taste of nutritious, ripe fruits and vegetables, packed with valuable nutrients, vitamins and minerals.

Food manufacturers play on this in-built desire by adding sweetness to many processed foods – including savoury snacks, baked beans, soups, sauces, ready meals and flavoured waters.

Although sugar is cheap (it costs about 6p to sweeten a litre of soft drink) – artificial sweeteners are cheaper. Officially these sweeteners are safe for most people, but they encourage us to eat more of the processed foods which can be unhealthy for us. They also encourage a sweet tooth and condition our tastebuds to prefer highly sweetened, processed products rather than the natural sweetness of ripe fruit and vegetables.

Two artificial sweeteners and unlabelled artificial flavourings mimic fruit juice in Coca Cola's '5 Alive' five fruit squash. Despite claiming to be 'bursting with fruitiness!' this five fruit squash contains only 4% real juice once diluted. Five other additives regulate acidity, boost the colour and act as preservatives.

Tip **– Artificial sweeteners are added to thousands of everyday foods, even foods where you wouldn't expect them – such as savoury products like these Walkers crisps and Heinz Instant Noodles.**

Acesulfame–K, E950 has been linked to adverse neurological symptoms such as blurred vision and nausea, but most tests have given it a clean bill of health. ● 200 times sweeter than sugar. ● Typical cost: 3p to sweeten a litre of soft drink.

Aspartame, E951 is known to be a danger to sufferers of the rare condition phenylketonuria, and so carries a warning. It is otherwise presumed safe. ● About 200 times sweeter than sugar. ● Typical cost: 2p to sweeten a litre of soft drink.

Saccharin, E954 has been linked to cancer in animal tests but experts disagree on whether there is any risk to humans. ● 350 times sweeter than sugar. ● Typical cost: 0.2p to sweeten a litre of soft drink

What are additives used for?

540 food additives and over 4,500 un-named flavouring agents are permitted in the foods we eat. On average we each eat about 14 pounds (6.5kg) of food additives every year.

Additives are used in a wide range of processed foods to make the food look and taste more attractive, and to prevent the food going mouldy or stale. Some additives are used to make dough rise quickly, or to blend oil and water to make a creamy sauce. Some are used to squeeze extra water or air into food, or to make fatty meat appear lean. Very few of these additives have any nutritive value at all.

Health experts recommend that we eat more fresh fruit and vegetables, lean meat and fish, but food additives undermine this good advice. Most additives are used to make unhealthy, processed foods cheaper and more attractive than healthy, fresh foods. Overall, about 90% of all additives are used for cosmetic purposes, changing a food's colour, flavour, appearance or texture.

In addition, there are question marks about the safety of some additives, particularly for children. Yet children's foods are the products most laden with the colourings and preservatives which cause concern.

Colourings

Before we even taste a food we judge it by its appearance. We expect kippers to be yellow, blackcurrant drinks to be purple and pork sausages to be pink. But many of these products have added colourings which deliberately deceive us. Some colourings are natural and safe, but some are synthetic compounds with questionable side-effects (see The Questionable Additives).

Preservatives

These are used to inhibit the growth of harmful micro-organisms, reducing food poisoning and extending shelf life. Preservatives account for only 1% of the weight of the additives used in our food. The toxicity of preservatives makes them potentially harmful to humans.

Antioxidants

Used to stop oils and fats from going rancid, thereby increasing shelf-life.

Flavour enhancers

Chemicals that can trick the taste buds into perceiving that a food has more flavour than it really does. The best known, Monosodium Glutamate E621 is widely used to 'pep up' the flavour of many everyday processed foods.

Emulsifiers, stabilisers and thickeners

Emulsifiers and stabilisers ensure that water and oil remain mixed together. Thickeners are used to thicken a wide range of processed foods, improving texture and 'mouthfeel'. Some of these additives are used to bulk foods out with the very cheapest of ingredients – water and air.

Sweeteners

Cheaper sweetening agents than sugar, these are very widely used, even in products that already contain sugar. Their use must be indicated next to the product name, but this is often in small print and *not* on the front of the product (See Who Needs Artificial Sweeteners).

Hidden additives

Not all additives have to be listed on food and drink products. For example:

- Acids and alcohols are used to dilute or 'carry' other additives;
- 'Processing aids' are used in manufacturing;
- Genetically modified enzymes are added to speed up processes such as bread making;
- Chlorine washes are used to clean pre-packed salads.

None of these need be listed as ingredients, even though residues can remain in the food we eat.

The questionable additives

Additives can have a direct effect on health. For example, sulphur compounds (E220-228) can destroy vitamin B1 and may thus be a problem in the diets of poorly-nourished people. These sulphites can also trigger dangerous asthma attacks in susceptible people, but despite being widely used, no warning is given.

Tartrazine (E102), Sunset Yellow (E110), Carmoisine (E122) and Ponceau 4R (E124) are synthetic chemical colourings that were first used as fabric dyes. They are now used to colour numerous food and drink products. Government research has shown that these additives can cause behavioural problems in young children, along with the preservative Sodium Benzoate E211.

Many other colourings and preservatives have also been linked to intolerance and allergy-type reactions in sensitive people. They may also be linked to poor attention and hyperactivity in children.

But if you react to certain foods, don't simply assume it was an additive. Some foods themselves can cause intolerance reactions. If in doubt, try cutting back on the additives, or consult your doctor.

Tip **– Many wines and beers contain additives, including sulphites, but *don't* have to list any of their ingredients. For example, Carling don't list any of the ingredients in this can of lager so you cannot tell what you're actually drinking.**

Supermarket secrets

Here's a recipe for Bakewell Tart, as you might make it at home:

Puff Pastry (butter, plain flour, salt, lemon juice, water), Ground Almonds, Caster Sugar, Butter, Eggs, Raspberry Jam (raspberries, sugar) and Almond Essence.

And here's a recipe for Bakewell Tart, as a supermarket would make it. We've highlighted the cheaper and 'unexpected' ingredients:

Wheat flour, Sugar, **Plum** and Raspberry Jam (**Glucose Syrup, Plums,** Sugar, Raspberries, Gelling Agent: Pectin; **Citric Acid, Colour: Anthocyanin; Acidity Regulator: Sodium Citrate; Preservatives: Potassium Sorbate, Sulphur Dioxide; Flavouring: unknown**), **Vegetable Oil, Glucose Syrup, Hydrogenated Vegetable Oil,** Egg White, **Rice Flour, Sweetened Condensed Skimmed Milk, Lactose, Soya Flour, Salt, Flavouring: unknown; Colours: Annatto, Curcumin, Lutein; Emulsifiers: Polyglycerol Esters of Fatty Acids, Sorbitan Monostearate, Polysorbate 60;** Ground Almonds, **Raising Agents: Disodium Diphosphate, Sodium Hydrogen Carbonate; Milk Protein, Fat Reduced Cocoa Powder, Humecant: Vegetable Glycerine; Dried Egg White, Preservative: Potassium Sorbate.**

This recipe is typical of processed foods. Cheap or fake ingredients replace the ingredients you would expect to find. Additives provide fake colours and fake flavours and hold the mix together and also give the product a long shelf life. This means the food is cheap – but is it really as good as the real thing?

Tip – If you want to eat real food that's not been mucked around with, always check the ingredients list. If you're not happy with what you see, choose a different product or try making your own!

Flavourings

The food industry uses over 4,500 different flavouring agents to disguise or improve the flavour of processed foods and drinks. Ingredient lists do *not* have to list flavourings as separate ingredients, but simply show their presence as 'flavourings' – so you cannot tell what you are really eating or drinking.

Artificial flavourings are much cheaper than real flavourings such as fresh fruit, but they have hardly any of the nutritional value of real ingredients. So if you want to eat good, wholesome food without fake flavours, always check the ingredients list.

There's no genuine fruit juice in these fruit flavour drinks – the 'fruitiness' comes from a cocktail of additives.

Tip **– If a food or drink is 'blackcurrant flavour' it doesn't have to contain any blackcurrant at all, and will be flavoured with artificial flavourings. If it is described as 'blackcurrant flavoured' it should contain some real blackcurrant but even then the actual blackcurrant content can be very, very low.**

The only way to check the real blackcurrant content is to look at the ingredients list – where the percentage of actual blackcurrant in the product should be listed.

Tip **– Manufacturers might use the term 'natural fruit flavouring'. You would expect this to come from real fruit, but many 'natural' flavourings are synthetic chemical compounds and are not 'natural' at all.**

Strawberries - yum!

Yum? Many strawberry flavour desserts don't use real strawberries at all, but rely on an artificial strawberry flavour, which can contain the following ingredients: **amyl acetate, amyl butyrate, amyl valerate, anethol, anisyl formate, benzyl acetate, benzyl isobutyrate, butyric acid, cinnamyl isobutyrate, cinnamyl valerate, cognac essential oil, diacetyl, dipropyl ketone, ethyl acetate, ethyl amyl ketone, ethyl butyrate, ethyl cinnamate, ethyl heptanoate, ethyl heptylate, ethyl lactate, ethyl methylphenylglycidate, ethyl nitrate, ethyl propionate, ethyl valerate, heliotropin, hydroxyphenyl-2-butanone, α-ionone, isobutyl anthranilate, isobutyl butyrate, lemon essential oil, maltol, 4-methylacetophenone, methyl anthranilate, methyl benzoate, methyl cinnamate, methyl heptine carbonate, methyl naphthyl ketone, methyl salicylate, mint essential oil, neroli essential oil, nerolin, neryl isobutyrate, orris butter, phenethyl alcohol, rose, rum ether, γ-undecalactone, vanillin and solvent.**

Now you know why food companies don't explain which artificial flavourings they've used in the ingredients list!

■ **Information from *Fast Food Nation* by Eric Schlosser, The Penguin Press, available from The Food Commission for £7.99 and all good bookshops.**

Water, water, everywhere

Adding water to milk was outlawed a century ago. But adding water to meat is still perfectly legal. Companies have developed a range of chemicals, called polyphosphates (E452), which help to bind extra water into products such as bacon, ham, fish fingers, scampi and chicken.

Starch, milk protein, sugar and salt are all also used to soak up water. Some chicken and fish products contain as much as 40% added water!

Bernard Matthews is a big fan of adding water to children's food. These Ham Sandwich Slices contain as much water as a wet flannel, soaked up by salt, sugar and starch. We think it's a rip-off to sell water instead of meat, but Bernard Matthews doesn't. These so-called ham slices are only 66% meat.

It's not just 'cheap' meats that contain extra water. Tesco's 'finest' Pork Loin Steaks are roughly one tenth added water, held in place by polyphosphates.

Tip **– Added water isn't dangerous to our health – but it is harmful to our pockets! Do you really want to be sold water when you're paying for meat or fish?**

Tip **– Manufacturers have found another way to add water to meat. Proteins are extracted from the remains of cow and pig carcasses, and then injected into chicken. The proteins make the flesh swell and retain extra water.**

The Food Commission was set up over fifteen years ago as the UK's first independent watchdog on food issues. It is a not-for-profit organisation and is dependent on public donations and subscriptions.

Our award-winning researchers expose the facts about modern food production and the secrets which the food industry tries to keep hidden. We aim to provide unbiased, accurate research which really helps people to eat a healthier diet.

Further copies of this poster are available from the address below for £2.50. You can keep up-to-date on food labelling and other food issues by reading the *Food Magazine*, published by The Food Commission every three months

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