

FACTSHEET No. 14

ADDITIVES IN BREAD

Background

Since ancient times, bread has been made from cereals and water, and a variety of other ingredients which have been added to make it more palatable or to help preserve it. Over time, certain ingredients have been discovered to enhance other characteristics of bread, and to make it safer to eat. For example, salt, vinegar and sugar are traditional methods of preservation, and adding a little fat to a recipe makes the product more tender to eat and helps to keep it soft.

Baking in the home often includes simple ingredients e.g. cream of tartar and baking powder that make scones and cakes rise - but these are seldom recognized as food additives. Many additives commonly used in food also occur naturally, e.g. citric acid in fruits.

All additives must pass rigorous approval procedures before they are deemed safe for use in food. In the European Union this is the responsibility of the European Food Safety Authority (EFSA). Additives must be shown to be both necessary and safe. Each permitted additive has a unique E Number-the 'E' simply means the additive is approved for use across the EU. This stringent testing procedure means that more is known about their biological, physiological and toxicological effects than about many of the natural foods we commonly eat. Consumers can therefore be confident that approved additives are safe and serve a useful purpose.

Bread, as our staple food, has always been very closely governed by law. The use of additives in bread is controlled by general additives legislation, while The Bread and Flour Regulations 1998 require the addition of certain nutrients to flour. The baking industry continues to respond by keeping the number of additives to a minimum.

The Food Information Regulation requires that all additives used in food are individually listed in the ingredients declaration; and all bread wrappers carry this list. In shops where bread is sold unwrapped or pre-packed for direct sale (eg. supermarket in-store bakery bread) there is no legal requirement to display this information.

Processing Aids

Various enzymes and processing aids are used throughout the food manufacturing industry. Any enzymes used in bread are deactivated by heat and therefore there is no requirement for these to be listed on the label.

The following additives would commonly be included among the ingredients listed on bread wrappers:

Flour Treatment Agents

These are used to ensure good loaf volume and improve the crumb structure. Ascorbic acid (E300 otherwise known as vitamin C), is the most common flour treatment agent used in breadmaking. Some bakers also use L-cysteine Hydrochloride (E920) exclusively from vegetarian sources.

Emulsifiers

All emulsifiers are based on vegetable oils. They are used to provide dough stability in addition to improving loaf volume and crumb structure, and in maintaining softness:

- E471 :Mono- and di-glycerides of fatty acids
- E472(e): Mono- and di-acetyltartaric acid esters of mono- and di-glycerides of fatty acids
- E481 :Sodium stearoyl-2 lactylate
- E482 :Calcium stearoyl-2-lactylate
- E322 :Lecithin.

Preservatives

Preservatives are used to prevent the growth of micro-organisms that would make food unwholesome to eat. The preservatives used in bread fall in to two broad categories: natural and artificial. They work by either increasing the acidity of the bread or by directly acting on the micro-organisms themselves. The use of preservatives is regulated and controlled by the EU.

Vinegar and naturally fermented wheat flour can both function as preservatives. They are natural ingredients so they do not have a designated E number.

Commonly used artificial preservatives include Calcium Propionate (E282) and Potassium Sorbate (E202).

All these act by making the bread more acidic in the same way as the fermentation does in sour doughs.