

LOOKS GOOD, TASTES GOOD

Chemicals have been added to food for most of human history to add flavouring or lengthen the time the food could be kept. Sodium chloride (common salt) was one of the earliest additives. When added to meat it would make it last through the winter without spoiling. Nowadays the range of food additives is enormous. It is estimated that 3500 food additives are in use. About 500 of these additives have been given an 'E' number. This shows they have been approved by the EEC.

Some food additives occur naturally, for example the green colouring chlorophyll (E140) is extracted from plant leaves. Most additives are made artificially in the laboratory.

Some chemicals have very little flavour by themselves but will bring out the flavour of foods to which they are added. Monosodium glutamate (MSG: E621) is a flavour enhancer commonly used in Chinese cooking. It is also added to a wide range of processed foods.

The bright colours of many foods such as tinned peas, orange squash and fish fingers are due to special chemical colourings. These additives were originally introduced to improve the appearance of the food. Recently manufacturers have brought out new brands that are free from artificial colouring. This is because many people became worried about possible side-effects.

Certain foods consist of a number of ingredients that do not normally mix, for example oil and vinegar in salad cream. Emulsifiers such as stearyl tartrate (E483) help the two ingredients to mix together. Stabilizers stop them from separating.

Some chemicals are added to many dried foods to slow down oxidation which might alter the substances that give the food its flavour. They therefore stop foods 'going off'. Biscuits have added anti-oxidants so that they can be kept on shop shelves for long periods.

Chemicals are commonly added to food to prevent the growth of microbes. Benzoic acid (E120) is a common preservative. It also occurs naturally in certain foods such as cranberries. This probably explains why they keep so well.

The distinctive flavours in many manufactured foods are produced by artificial flavourings. Caramel (E150) is a flavouring added to foods such as pickled onions, cola drinks, biscuits and scotch eggs. Many artificial flavourings produced by food chemists are copies of natural flavours. For example a 'cheese flavour' biscuit contains no cheese at all. All the flavour is artificial. If the label says 'cheese flavoured' it means that the biscuit does contain some real cheese.

(from Stone-Andrews-Williams, *Examining GCSE – Science*, Stanley Thornes Ltd)

1 In which order are these food additives dealt with in Food additives?

- | | | |
|---------------------------------------|--|--|
| <input type="checkbox"/> Antioxidants | <input type="checkbox"/> Emulsifiers and stabilizers | <input type="checkbox"/> Flavourings |
| <input type="checkbox"/> Colourings | <input type="checkbox"/> Flavour enhancers | <input type="checkbox"/> Preservatives |

2 Answer these questions about Food additives.

- a. What does the "E" in the "E" number of an additive mean? • b. What does MSG stand for? What is it used for? • c. Why are most artificial colourings no longer used? • d. What are emulsifiers used for? • e. What are stabilizers used for? • f. What is the function of antioxidants? • g. Why are chemical preservatives added to food? • h. What is the function of artificial flavourings? • i. What is the difference between a "... flavour" and a "... flavoured" food?