

What are E-numbers and could we live without them?

By Claudia Parmis

There's a lot of mystery around *E-numbers*, like what they are and why we need them. In general, the perception of E-numbers is rather negative. Let's clear things up and find out if E-numbers are necessary for our food production.

What are E-numbers?

You can find E-numbers in food products where food additives were added. E-numbers are codes for substances that are used as food additives. These can be any substances

- that are not normally consumed as a food in itself
- but which are intentionally added to food for technological purposes during manufacturing, processing, preparing, treating, packaging, transporting and/or storing the food to achieve the end product you find in the store
- and that may or may not have any nutritional value as such.

Each additive gets its own unique number. There are over 300 of them!¹

The categorization of E-numbers goes as follows:

- The E100 series refers to food colours
- The E200 series refers to preservatives
- The E300 series refers to antioxidants

and so on.²

An E-number is given when, after having been submitted for safety tests, a particular food additive is approved for use in food products sold in the EU. As such, the 'E' simply stands for 'Europe'. Unlike the name of the used additive, which can change depending on the language, an E-number will be the same no matter where in the EU that food product is sold.³ The system is recognized worldwide, which makes it easier for manufacturers to indicate on the packaging which ones are included in the respective food product. For international numbers outside of the EU, just drop the 'E'.

Why do we need food additives?

When you buy food products, you have a certain expectation with regard to the taste, quality, texture, presentation, cost etc. of the product. Even though food additives are not a main ingredient of any recipe, they do play an important role in meeting your expectations.

Ageing and processing of foods can affect their natural colour. During processing, food ingredients' colour may change in such a way that is different or simply doesn't look appealing to consumers. The food industry is allowed to compensate by using a range of food colours. This helps to make up for colour losses, enhance naturally occurring colours and/or add or change the colour of a food.⁴

How do food additives work?

Food additives such as improving agents, emulsifiers, stabilisers, antioxidants, thickening agents, etc. are added to give certain physical qualities to food. Other additives such as flavour enhancers, sweeteners and colours improve or change the flavour of food products.

For example, the processing of strawberries can result in a loss of the red colour which consumers associate with fresh, delicious, nutritious strawberries. If any factor doesn't meet their expectations, they will not purchase these strawberries. That's why food colours are added that give a red colour to, in this case, the strawberries. Cochineal (E120) is a good example.

Other food additives such as antioxidants and preservatives increase the shelf-life of a food product.

Busting the myth: Are foods with E-numbers bad for you?

E-numbers are not as bad as you might think! There is a widespread suspicion towards E-numbers these days. The reason? There are ingredients used as food coloring, stabilizers and preservatives which actually can have harmful effects on your health. However, not all E-numbers (or additives) are bad for you! Even more so, as we explained before, each substance that has been given an E-number has been carefully considered and approved for use.

So, are there any E-numbers you should avoid?

You may want to look out for the following E-numbers as they could potentially cause side effects:

1. *E621 of MSG*: a flavor enhancer that's used to make food taste better.
Potential side effects: headaches, nausea, muscle pain...
2. *E951 or aspartame*: an artificial sweetener used in desserts, low-fat foods, low-sugar drinks, snacks and sweets.
Can cause headaches, and people suffering from PKU are advised to avoid this ingredient completely.
3. *E211 or sodium benzoate*: a food preservative found in margarine, salad dressing, soy sauce, sweets and soft drinks.
Potential side effects: hyperactivity in children, allergic reactions, asthma.
4. *E133 or brilliant blue FCF*: blue food coloring.
Potential side effects: allergic reactions. This E-number has already been banned in several European countries.
5. *E213 or calcium benzoate*: a preservative used to extend the shelf-life of (low-sugar) food and beverages.
Potential side effects: allergic reactions.

Why don't we use other preservation techniques?

Nowadays, consumers like to purchase food products sold in places all around the world. These foods have to travel quite a distance sometimes, which has created the need for a safe-for-longer shelf-life. Food preservation involves a continuous prevention of microorganisms spoiling food or making it unsafe for consumption.

Your favorite ways of preserving food using heat, refrigeration or freezing, which you apply to reduce the risk of food poisoning, are often also associated with other kinds of adverse changes. Foods may lose their quality, flavour or nutrients in any of these processes.

That's why the food industry is experimenting and investigating the replacement of these "traditional" food preservation techniques by "new" preservation techniques which comply with consumers' expectations for nutritious, tasty, natural food products.

Even though improvements in the cold distribution chain have made industrial trade of perishable foods more safe and convenient, refrigeration alone cannot ensure the quality and safety of all perishable foods.⁵

Conclusion

So, could we live in a world without E-numbers? I'd say: no. Food additives keep our food quality high. If only to be able to guarantee food safety, E-numbers are a must. As long as the approval of E-numbers remains strictly regulated as well as the standardization of how it is mentioned on food labels and food packaging, food additives will be a must-have for the food industry to enable transparency towards consumers.

Let us know what your thoughts are on E-numbers!

Sources:

- (1) "What you need to know... E-numbers." The Vegetarian Society. Accessed 24 September 2019. ([Source](#))
- (2) "Additives Explained: E-numbers." FAIA UK & Ireland. Accessed 24 September 2019. ([Source](#))
- (3) "Food Colour Resource." SafeFood. Accessed 24 September 2019. ([source](#))
- (4) "Food Colour Resource." SafeFood. Accessed 24 September 2019. ([source](#))
- (5) Ahmed et al. (2013) "Naturally Occurring Preservatives in Food and their Role in Food Preservation." Accessed 24 September 2019. ([source](#))