

What is spirulina doing in my sweets?

From the sweeties.net wiki

If the ingredients of a blue sweet include spirulina, that is where the blue comes from. Spirulina is a kind of blue green alga, and it contains a bright blue pigment that sweet makers use in place of artificial colours.

What spirulina is

Spirulina is the dried mass of cyanobacteria, tiny organisms often called blue green algae. The name comes from Spirulina, the group these species used to be classified in. They grow naturally in tropical and subtropical lakes where the water is very alkaline, in Africa, Asia and the Americas. Most spirulina is now farmed, in long open ponds where paddle wheels keep the water moving. Like plants, the organisms make their own food from light.

People have eaten it for centuries. The Aztecs harvested it from Lake Texcoco in Mexico and sold it as cakes, which one of Cortés's soldiers described, and they called it tecuitlatl. Around Lake Chad in Africa, the Kanembu people still harvest it from small lakes and ponds and dry it into cakes called dihe, used to make broths.

Where the blue comes from

Spirulina contains a pigment called phycocyanin, a light blue colour that absorbs orange and red light. It helps the organisms gather light, alongside their green chlorophyll. Extracted from spirulina, phycocyanin is used by the food and drink industry as a natural blue, and you will find it in sweets and ice cream.

It has one weakness. Phycocyanin struggles to keep its blue at high temperatures, unless sugars or preservatives are added. Happily for sweet makers, it is stable when there is plenty of sugar.

The blue Smarties story

In Britain, spirulina is behind the blue in Smarties. In 2006 Nestlé announced it was removing all artificial colourings from Smarties in the United Kingdom. The trouble was blue: there was no natural blue it could use at first, so blue Smarties were replaced with white ones. In February 2008 the blue ones returned, coloured with spirulina instead of the artificial colour brilliant blue FCF, E133.

The move away from artificial colours gathered pace after the Southampton study of 2007, which linked six artificial colours to hyperactivity in some children. The trade magazine Food Manufacture called that study the catalyst for the growth of natural colours in most European markets: see [why do some sweets have a warning about children?](#)

Why there is no E number

You might expect a colour to have an E number, but spirulina usually does not. Under European guidance adopted in 2013, which came into force in November 2015, a colour made from a food that was eaten in Europe before 1997, using simple physical processes and without selectively extracting the pigment, counts as a colouring food. Colouring foods are treated as ingredients rather than additives, so they are named in the ingredients list instead of being given an E number. Black carrot concentrate is another example: see [what is black carrot concentrate?](#)

In the United States, the Food and Drug Administration first approved spirulina extract as a colour additive in August 2013, for sweets and chewing gum. Its use has since been extended to many other foods and drinks.

Is it vegan?

Spirulina does not come from animals, so it suits vegans. That makes it a useful alternative to carmine, the red colour made from insects: see [what is carmine?](#)

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