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Chantillys: The Cousins of Whipped Cream

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Whipped cream is a traditional preparation obtained through the introduction of air bubbles in “cream”, i.e., the emulsified system obtained by the creaming of milk from *Bos taurus*. After October 1995, I introduced a series of aerated food preparations of the same kind, the first one being “chocolate Chantilly” (This, 1996).

Chocolate Chantilly

In the early years of molecular and physical gastronomy, there was a time when an (inappropriate) programme for this scientific discipline was to focus on “culinary definitions” and “culinary precisions” (see the chapter “Culinary Precisions and Robustness of Recipes”), but it also included looking for applications of molecular gastronomy to the improvement of the culinary art, what was named later “molecular cooking” or “molecular cuisine” (This, 2002; Burke *et al.*., 2016). Chocolate Chantilly, in particular, was proposed as a generalization of the classic process of whipping cream: first, the application was made using chocolate emulsions.

At that time (1995), it was considered that, as cream is obtained from milk (said then to be a “dilute oil in water emulsion”) by creaming (because fat has a lower density than water), and whipped cream is obtained by foaming this concentrated emulsion, other emulsions could be foamed as well, making “foamy emulsions”. Chocolate was first considered as a candidate for fat replacement of milk fat, and it was proposed to make an emulsion by simply heating chocolate in water and then whipping the obtained emulsion (Figure 17.1).

It is useful to recall now that such a proposal then seemed heretical, because water added to melted chocolate can lead to “seizing”, i.e., the formation of a clumpy mass. However, heating chocolate in water can make an emulsion, and indeed, the prediction that one would get a foam by whipping a chocolate emulsion was a success; I demonstrated the “chocolate Chantilly” during a lecture at the Chocolate Fair in Paris in December 1995.

At that time, a mechanism for this process was proposed (Figure 17.2), but the use of the disperse system formalism (DSF, see the chapter on this) shows why this picture is inaccurate.
Other Chantillys

The successful production of chocolate Chantilly led me immediately to test other emulsions made from other food ingredients containing fat, such as cheese, foie gras, butter, brown butter, and even olive oil, producing products such as cheese Chantilly, foie gras Chantilly, butter Chantilly, olive oil Chantilly, etc.

For example, I first demonstrated the “Roquefort cheese Chantilly” on a TV show (Toque à la loupe, France 5), and then I helped the French chef Didier Clément to produce a “crottin de Chavignol Chantilly” for a public lecture in Orleans, France. Also, I first showed a “foie gras Chantilly” on German TV: this food system was used by the chef Pierre Gagnaire in many dishes (Figure 17.3).

Finally, it can be observed that experiments show clearly that a sufficient solid fat network is needed, which is particularly true for the production of olive oil Chantilly, which needs a very efficient cooling system to be used (we used liquid nitrogen in a public experiment).

REFERENCES


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