Handbook of Molecular Gastronomy
Scientific Foundations, Educational Practices, and Culinary Applications
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The Monthly INRAE-AgroParisTech Seminars on Molecular Gastronomy

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Is it true that the inner skin of lemons imparts a bitter flavour to caipirinha? Is it true that massaging meat with butter can make the meat more tender? Is it true that pouring the raka over ice cubes gives a different result than adding the ice cubes into raka? Is it true that roasted suckling pigs have a crisper skin when the head is cut immediately after cooking? Such traditional prescriptions, i.e., “culinary precisions”, deserve testing, and this can be done in many different environments, from labs to schools.

Indeed, molecular gastronomy can be used as an important tool for education at many levels, from primary school to professionals, as this second part of the book demonstrates. Depending on the particular context, various educational activities can be proposed. In Paris, since September 2000 (Figure 108.1), seminars of molecular gastronomy have been organized every month, with various audiences: these meetings last for two hours every third Monday of the month (except July and August) (Figure 108.1). They have also been introduced or performed in various cities of the world, including Montreal (Canada), Athens (Greece), Nantes (France), La Havane (Cuba), London (UK), New York (USA), Poligny (France), and Sao Paulo (Brazil).

Many Questions

The following list indicates some questions already explored during the Paris seminars:

- Is there a difference in bitterness between artichokes of which the tails were cut with a knife or torn apart?
- Is it true that cooked asparagus becomes firmer when stored in hot water?
- Is it true that tiny brilliant spots can be observed on oversalted sauces?
- Do almonds really thicken sauces?
- For a bearnaise (or hollandaise) sauce, is there a difference if the yolk is cooked alone first, or if the sauce containing egg yolk and emulsified butter is cooked after emulsification of butter?
- Is it true that fried products are crisper when oil is added to the batter into which the pieces are dipped before frying?
- Can we distinguish sensorially between solutions of citric acid and lemon juice?
- Is it possible to make hot and cold emulsions with cooked egg yolk?
- Do apples taste different when peeled with a knife or with a peeler?
- Does the presence of sugar influence the poaching of eggs?
- Is it possible to make a mayonnaise sauce from eggs that were once frozen?
- Does an overcooked hard-boiled egg lose its sulfurous odour after one night of storage?
- Is it possible to whip egg whites following freezing?
- Do strawberries lose their flavour when washed with water?
- Is it useful to heat the genoise batter when preparing the genoise?
- How can blue garlic be produced?

This is a very small sample, but one can see that almost any topic of culinary technique can be studied. Also, in terms of techniques discussed, one should indicate that the needed equipment is very simple: ordinary kitchen equipment, a balance, pH paper and thermocouples are generally enough. And having at hand a sufficient number of participants can make sensory tests possible. In our seminar in Paris, we very often use triangular tests for such studies. Finally, these seminars help to, inter alia:

- clear up culinary practices
- promote scientific modelling of culinary practices
- explore culinary “precisions” (all the details that are added to the “definitions” of dishes given through recipes)
- modernize culinary teaching
- add research activity to culinary teaching
- present to the culinary world new ingredients, methods, and hardware
Over the last 20 years, the Paris seminars have been organized in different ways, but the latest ones took place on Monday (because this day is often free for French professional cooks) between 4 and 6 PM (because this is between duties) in a culinary school (Lycée Guillaume Tirel, Paris). Anyone is accepted after applying by email, and in practice, the participants are interested people, chefs, teachers, and scientists.

A typical seminar includes:
1. an introduction, discussing news about molecular gastronomy activities in the world;
2. the experimental study of the month;
3. a discussion about note by note cooking, i.e., presenting a particular product, demonstrating how to use it, and discussing food safety matters;

**FIGURE 108.1** In this seminar (October 2000), various equipment for whipping egg whites were compared.

**FIGURE 108.2** Do corks prevent beans fracturing during cooking? Statistically, no.
4. choosing the topic of the next seminar: participants vote for a particular culinary precision from a long list that is given.

Shortly after the seminar, a report is sent by email using a large distribution list.

Of course, the results that are obtained after such short sessions are preliminary, scientifically speaking, but it should be remembered that one goal of the seminars is only to get an idea of real phenomena that can be studied correctly later. This being said, it can be seen that the past results (one per month!) make it worth the effort of organizing and performing these seminars (Figure 108.2).

**REFERENCE**

Available on application to icmg@agroparistech.fr. The reports of the seminars (in French) can be found at www2.agroparistech.fr/Les-Seminaires-de-gastronomie.html