Handbook of Molecular Gastronomy
Scientific Foundations, Educational Practices, and Culinary Applications
Róisín M. Burke, Alan L. Kelly, Christophe Lavelle, Hervé This vo Kientza

Using Liquid Nitrogen to Prepare Ice Creams in the Restaurant

Publication details
Christophe Lavelle, Hervé This vo Kientza
Published online on: 09 Jun 2021

How to cite: Christophe Lavelle, Hervé This vo Kientza. 09 Jun 2021, Using Liquid Nitrogen to Prepare Ice Creams in the Restaurant from: Handbook of Molecular Gastronomy, Scientific Foundations, Educational Practices, and Culinary Applications CRC Press
Accessed on: 11 Oct 2023

PLEASE SCROLL DOWN FOR DOCUMENT

Full terms and conditions of use: https://www.routledgehandbooks.com/legal-notices/terms

This Document PDF may be used for research, teaching and private study purposes. Any substantial or systematic reproductions, re-distribution, re-selling, loan or sub-licensing, systematic supply or distribution in any form to anyone is expressly forbidden.

The publisher does not give any warranty express or implied or make any representation that the contents will be complete or accurate or up to date. The publisher shall not be liable for an loss, actions, claims, proceedings, demand or costs or damages whatsoever or howsoever caused arising directly or indirectly in connection with or arising out of the use of this material.
Using Liquid Nitrogen to Prepare Ice Creams in the Restaurant

Christophe Lavelle and Hervé This vo Kientza
with chefs André Daguin, Noël Gutrin and Philippe Labbé

Although liquid nitrogen has been used for more than a century to make “instant” ice cream, relatively few of the general public know about it, and even fewer have had the opportunity to taste the result in a restaurant. Because liquid nitrogen is very cold (−196 °C), it can be hazardous to work with, and one needs to be quite cautious when using it in the kitchen, and even more cautious when using it in front of customers!

To get all the details about the history, how it works and what can be done, the reader should refer to the chapter “Cryogenics in the kitchen” by Peter Barham in this book. Here, we will illustrate three different preparations.

Before cooking, it must not be forgotten that one should respect the safety instructions: store liquid nitrogen in a well-ventilated room, only use approved containers, and never try to keep liquid nitrogen in a closed bottle/vessel (it will explode!); when using the liquid, it is advised to wear spectacles and also work in a well-ventilated room. More generally, when using a tool in the kitchen (knife, stove, liquid nitrogen …), one has to learn how to use it in order to avoid the risks associated with all tools (there is always danger, but we have to be prepared and avoid the risks).

The Brandy Sorbet by André Daguin

In the 1970s, the late chef André Daguin had engineering contacts at the centre for beef artificial insemination in Aubiet (France), and this led him to use liquid nitrogen for making ice creams. An example is this recipe, which is published in his book (André Daguin, Le nouveau cuisinier gascon, Stock, 1982).

Ingredients:

- ½ L white Armagnac
- ½ L sugar syrup
- 1 L liquid nitrogen

Preparation:
Mix in a metallic vessel ½ L of white Armagnac (60°) with ½ L of syrup (500 g of sugar and 0.6 L of water, which you boil together and cook with a lid on for about 20 minutes). Pour on it 1 L of liquid nitrogen, slowly, while moving it with a wooden spoon and without being afraid of the dramatic vapour formation. Less than one minute later, the sorbet is made.

Fruit Sorbet by Noël Gutrin

For more than 20 years, Noël Gutrin has been head chef of Le Crystal, a restaurant located in the middle of the Futuroscope (Poitiers, France), a leisure park dedicated to new technologies. So, it makes sense to propose to the visitors/customers some “molecular cuisine” preparations, including sorbets made at the table. This is a very simple and straightforward application, but customers always enjoy it.

Ingredients:

- 500 g of fruit puree
- 0.5 L liquid nitrogen

Preparation:
Mix fruit puree in a metallic vessel, pour on it 0.5 L of liquid nitrogen, slowly, while moving it with a whisk until done (you...
don’t see anything due to the vapour … but you feel the “resistance” of the liquid becoming solid).

**Crêpes Mademoiselle by Philippe Labbé**

Philippe Labbé has been head chef of La Tour d’Argent, one of the oldest restaurants in Paris, with a remarkable view on Notre-Dame cathedral. Among “traditional” dishes, the “Canard au sang” in three services is undoubtedly the most famous and has been numbered since the first one: the Prince of Wales (who should have become Edward VII) had no. 328 in 1890, King Alphonse XIII had no. 40,312 in 1914, Japanese Emperor Hirohito had no. 53,211 in 1921 … and today, we have passed the 1,200,000 mark! But beside keeping some historical dishes on the menu, chef Philippe Labbé also injected some modernity, including this Crêpes Mademoiselle recipe, which provides more than a 10 minute show at the table, with “extra-cold” (liquid nitrogen) and “extra-hot” (flaming) at the same time!

**Ingredients:**

- 30 g butter
- 30 g sugar
- 2 lemons
- 2 oranges
- Some candied orange peel
- 3 pancakes (per person)
- A mix of Grand-Marnier, Cointreau and Mandarine Impériale
- 300 g fresh curdled milk

**Preparation:**

For the pancakes (Figures 116.3 and 116.5): heat a metal tray, add the sugar and wait until caramelisation, then add the butter, some orange and lemon zest, and the pancakes. Flambé with alcohols.

For the ice cream (Figures 116.4 and 116.5): put the curdled milk in a special bucket designed with a transparent rim to
Using Liquid Nitrogen to Prepare Ice Cream

prevent splattering and whisk energetically while pouring the liquid nitrogen until done.

Serving (Figure 116.6):

Add some orange juice, candied orange peel and orange segments, arrange nicely on a plate, add the ice cream and grate some lemon zest on the top.

**FIGURE 116.5** Ice cream and pancakes are prepared at the same time in front of the customers, here with Virginie Reynaud, sommelier and Stéphane Trapier, restaurant manager.

(©Marco Strullu)

**FIGURE 116.6** Grating the citrus zest as a final touch.

(©Marco Strullu)