



Recipes – The chemistry we eat

Attraction chimique

Curdled milk

Heat 250 ml of milk during 50 seconds in the microwave

Add 40 ml of white vinegar to the milk

Stir gently and wait a few seconds that milk curdles

Sieve in a bowl

Rinse and salt before eating, if you're courageous enough!

Shell-less eggs

Submerge eggs in white vinegar for 1 or 2 days

Rinse eggs softly with water to remove the remainder of shell

To color eggs, submerge them into water containing food coloring during a couple of hours.

To dry them, submerge the shell-less eggs in corn syrup during a couple of days. Discard water extracted from the egg every day. After a week, you should have a small bag containing only a hard and dry yolk (yellow part) and the jelly white part of the egg.





Cold recipes

Ice cream

Basic ice cream mixture:

- 1 litre of whipping cream (35 %)
- 1 litre of milk
- 250 ml of sugar
- Flavors!
 - i.e. 2 tablespoon of vanilla extract or many tablespoon of chocolate flavor

Make ice cream!

- Put 250 ml of ice and 50 ml of cooking salt in an air-tight Ziploc[®] bag.
- In a smaller Ziploc[®] bag, add 100 ml of the ice cream mixture
- Tightly close the small bag and put it in the bigger one.
- Tightly close the bigger bag and vigorously shake it for 5 to 10 minutes¹.
- Enjoy your ice cream!

Gelification and spherification recipes

These recipes can be made using the R-evolution kit from Molecule-R (<http://molecule-r.com/>). These kits are sold for around 60 \$ on the internet.

Maple syrup and balsamic vinegar fake caviar

According to your taste, mix 100 ml of balsamic vinegar, 100 ml of maple syrup, 100 ml of water and 1 sachet of agar².

Bring to a boil

Keep hot and let the temperature cool to 60-70°C, making sure that agar doesn't freeze.³

Meanwhile, chill a bowl of canola oil in the freezer for 20 minutes. Canola oil has to be very cold, but not frozen.

¹ Prepare something to wash the possible messes! ;)

² 1 sachet \approx 1 teaspoon. Alternatively, you can use 200 ml of honey + 100 ml of water + food coloring to give it a "chemical" look!

³ Letting the mix cool to 60-70°C is essential. If the mix is too hot, the drops break before they freeze!





Let droplets of the 60-70°C caviar mix fall in the cold canola oil with a pipette (found in the R-evolution kit).

Pipetting notes:

- **Always hold the pipette straight**
- **Press on the pipette's hold using your thumb and your index finger**
- **Dip the pipette's tip in the caviar mix**
- **Let go the pressure, the liquid will go up.**
- **Keep straight and press the hold to let go drop 10 cm above the cold canola oil**

Sieve the caviar and rinse with water.

Put the caviar on small crackers. You can add Philadelphia cheese on the cracker if you like, or put the caviar on a tomato slice instead.

The cold temperature of canola oil and the 60-70°C temperature (after having boiled) of the agar-caviar mix are critical for the success of this experiment.

Rocket spaghettiis

Crush 500 ml of salad rocket in 250 ml of water and add parmesan according to your taste.

Mix with 1 sachet of agar and bring to a boil

Keep hot and let temperature cool to 60-70°C, making sure agar doesn't freeze.

Suck up the hot mix with a syringe to fill the food tubing provided by the R-evolution kit

Submerge the salad rocket mix filled food tubing in a bowl of cold water or in ice.

After 10 minutes, push the spaghetti contained in the food tubing by injecting air inside an air-filled syringe.⁴

Serve around a tomato with maple syrup and balsamic vinegar fake caviar on top.

⁴ Look out! The spaghetti is quite fragile!





Juicy caviar with alginate (grenadine flavored-fake caviar)

Mix 1 sachet (1.5 teaspoon) of calcium lactate (kit R-Evolution) in 500 ml of water in a bowl

Mix 200 ml of grenadine with 100 ml of **distilled water**⁵ and a sachet of sodium alginate **with a mixer**⁶.

Let droplets of the grenadine caviar mix fall in the calcium lactate solution with a pipette (found in the R-evolution kit).

Be aware! Most of the juices contain traces of calcium and make alginate freeze! Coca-Cola and carrot juice also work well.

Egg recipes

Mayonnaise

Ingredients

1 egg
250 ml of vegetable oil
1 pinch of cooking salt
2 tablespoon of fresh lemon juice
2 teaspoon of Dijon mustard

In a bowl, mix every ingredient, except vegetable oil. Ideally, ingredients should be at room temperature.

With a high speed electric mixer, mix ingredients while gradually adding vegetable oil until the texture is creamy.

Keep in the refrigerator.

⁵ Traces of calcium in tap water might make alginate freeze before you have time to make your caviar...

⁶ The mix is hard to make homogenous. Make sure you don't make too many bubble while mixing and let the mix rest for a few minutes and, ideally, for a couple of hours in the refrigerator.



Strawberry or chocolate mousse

Mix 250 ml of melted chocolate, 250 ml of water (or milk or cream)

Add 1 sachet of soy lecithin⁷ (or egg yolk)

Mix with an electric mixer

Lift the mousse on top of the liquid and put it in another bowl

Keep in the refrigerator where the mousse will freeze

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⁷ Lecithin is also found in egg yolk! It helps stabilize air, fat and water in the mousse.

