



SCIENCE MAKERS

Balsamic Vinegar Pearls

Balsamic vinegar is transformed into small jelly balls using agar agar and cold oil spherification.

Cold oil spherification method involves cooling droplets of a warm agar solution to below 35 °C by releasing them in cold oil using a syringe or pipette. Agar agar sets at a temperature of about 35-45 °C so if brought to a boil as a 1.5% solution, droplets cool down on contact with the cold oil and set before they reach the bottom of the container, allowing them to form a spherical shape.

Ingredients

- 100 g (7 oz) Balsamic Vinegar
- 1.5 g (1.5%) Agar Agar

Oil Bath

1 cup of oil, leave in the freezer for at least 30 min

Preparation

1. Place oil in a tall glass in the freezer for at least 30 minutes. Using a tall glass allows time for the droplets to get cold and gel before reaching the bottom.
2. Once the oil is cool, put 100 g balsamic vinegar in a saucepan, dissolve 1.5 g agar agar and bring it to the boil, stirring constantly. Take off the heat and skim to eliminate any impurities.
3. Wait a few minutes until the temperature drops to 50-55 °C. If the liquid is too hot, the droplets may not cool down enough and therefore not gel completely before reaching the bottom of the glass resulting in deformed spheres.
4. Fill a syringe or pipette with the hot balsamic agar solution and expel it drop by drop into the cold oil. The syringe needs to be high enough for the drops to sink when

they get in contact with the oil but not too high or the drops may break into smaller drops creating “baby” spheres.

5. Wait a few minutes and then carefully remove the pearls from the oil bath using a slotted spoon and rinse them in water. You can keep them in a container in the fridge for later use.

More references

- [Original recipe](#) at [molecularrecipes.com](#)
- [Video of making pearls](#) at [molecularrecipes.com](#)
- [Additional techniques using agar agar](#)

Other ideas

- [Sriracha Pearls](#)
- [Lemon ginger caviar](#)
- [Fruit juice caviar](#)