PURDUE UNIVERSITY | Agricultural and Biological Engineering

DIRECT SPHERIFICATION PROTOCOL

Materials

- Sodium alginate
- Calcium Chloride
- Juice
- Tall containers
- Slotted or Spherification spoons
- Droppers/pipettes
- Shallow containers
- Immersion blender

Sodium Alginate juice solution (best if made a bit in advance):

1. In a tall container (pitcher or beaker that is much taller than the amount of juice), add 1 cup juice and ¼ - ½ tsp sodium alginate powder
2. Mix using immersion blender
3. Let sit so the air bubbles can disperse

Calcium Chloride Bath (can be made in advance, not required):

1. In a tall container (pitcher or beaker that is much taller than amount of water), add 2 cups distilled water and 1 tsp calcium chloride
2. Mix using immersion blender

Procedure for producing beads

1. 2 two shallow containers, 1 with calcium chloride bath, 1 with distilled water
2. Using a dropper, drop alginate juice solution in calcium chloride container – careful not to touch the tip of the dropper to the bath or it will get clogged
3. Use a spoon to gently swirl
4. Carefully remove the boba with the strainer spoon
5. Place boba into distilled water bath, gently swirl
6. Using strainer spoon, remove boba and taste!

Links to materials (any brand will work)

- Sodium alginate (https://www.amazon.com/Alginate-Molecular-Gastronomy-Non-GMO-Certified/dp/B00BLPNHLW/ref=sr_1_6?crid=PED01U5RJ5TQ&keywords=sodium+alginate&qid=1684182541&sprefix=sodium+alginate%2Caps%2C98&sr=8-6)
- Calcium chloride https://www.amazon.com/Calcium-Chloride-Molecular-Gastronomy-Certified/dp/B00BLPNJLK?crid=ULCX8H05T0NZ&dib=eyJ2IjoiMSJ9.pf8Rm5iLkZe2bLOXe9gVj1mTQjxXZvX7tKFKl0HLhVySG1Tm68tmfxGW9koZoh-e099G6nnIxOoh400oiaMSPyVOc5yh7Wxmyn_sixD_oNdW9iPsID5lW5SbUh0Iqtyv7UTeL5jFIidB61NytsvCWSr3YzjLWllxsRytr8Np7NRI9b87wBRnf6gJEecddy6HRxXLFu8UpS6kqj8ERl0n24VMcZDGFr2IYP9hsD-sN74nRnOGQ4in_onmpcVqU35cugcYjYSNQKj7qLQcqbIFC1WbnzsQjNTzoEAX_0cCe1Tb1z51V5-xFbXuHNUkrPRID_MzWnLA3ja8sL_H1fYLRlX3zjKMpkRClwVKlES7ePqK7g6htS0tk0F5US9tSFKPmeT8YKDfDluWvUoJVEX1XIxerwiQHJln74I7jXwy2eVZKqH3Osd4DULDcannGOKe.gDcAhIWXhoHknANMicf9aRcIE7ChCpd-nd7yfB9JD6c&dib_tag=se&keywords=calcium+chloride&qid=1741207784&sprefix=calcium+chloride%2Caps%2C112&sr=8-6
- Spherification spoons (https://www.amazon.com/DEAYOU-Perforated-Spherification-Mixologist-Multi-Color/dp/B0BFKB5QKZ/ref=sr_1_10?crid=1RXLD7D62PIYK&keywords=spherification+spoon&qid=1684182765&sprefix=spherification+spoon%2Caps%2C90&sr=8-10)
- Droppers/pipettes (https://www.amazon.com/Disposable-Transfer-Calibrated-Essential-Laboratory/dp/B08CMPRNC3/ref=sr_1_9?crid=3NP13MKUNVUU3&keywords=transfer+pipettes&qid=1684182867&sprefix=transfer+pipettes%2Caps%2C112&sr=8-9)
- Shallow containers (https://www.amazon.com/Tosnail-Pack-Plastic-Storage-Containers/dp/B07T2HQYK5/ref=sr_1_16?crid=3A7V51ZUD9SNV&keywords=clear+plastic+food+containers&qid=1684182982&sprefix=clear+plastic+food+containers%2Caps%2C97&sr=8-16)
- Immersion blender (https://www.amazon.com/Bonsenkitchen-Handheld-Electric-Immersion-Stainless/dp/B09SH9XH37/ref=sr_1_11?crid=3A021FNXKMDGI&keywords=immersion+blender&qid=1684183161&sprefix=immersion+blender%2Caps%2C102&sr=8-11)