The Effect of Calcium Lactate Concentrations on the Process of Frozen Reverse Spherification

Spradley, Reece

The purpose of this project was to test the effect of Calcium Lactate concentrations on the process of frozen reverse spherification. The hypothesis of this experiment was that higher concentrations of Calcium Lactate would last longer. This experiment involved the use of several objects including Calcium Lactate, Sodium Alginate, a slotted spoon, a scale, an ice tray, a freezer, distilled water, 3 bowls, a microwave, a freezer, and a timer. The experiment began with 250g of distilled water measured into a bowl. A specified amount of Calcium Lactate was added, mixed, placed into an ice cube tray and frozen. 1000g of distilled water and 5g Sodium Alginate were mixed using an emersion blender. This was set aside until the bubbles disappeared. Then it was microwaved for 30 seconds. The ice was then dropped into the Sodium Alginate, and slowly stirred with a slotted spoon for three minutes before being moved into a clean bowl of water. The ice was allowed to finish melting before the spheres were placed a paper towel covered plate. For the next 24 hours, the spheres are rated hourly on a 10-1 scale. 10 is perfect condition and 1 is completely flat. This was repeated 2 more times for 3 trials with 4 different Calcium concentrations. The results collected support my hypothesis that higher concentrations will last longer. In all 3 rounds of testing 7g of Calcium Lactate (the most in the experiment) lasted the longest, while 1g lasted the least amount of time.

Awards Won: