

Let's Eat (bio)Plastic!

Priyanka Makin
Material Kitchen

What is a bioplastic?

- ★ A plastic that is derived from natural materials and is biodegradable
- ★ Plastic = able to be molded or made into specific shapes

What is a agar agar?

- ★ A plant-based gelatin made from seaweed, red algae
- ★ Used a lot to make the base of petri dishes

We are going to make a mango and coconut bioplastic

- ★ Ok, so it's actually a dessert recipe which I [found here](#) and modified a bit
 - But it's got a lot of the same ingredients as some common bioplastic recipes
 - Oh, and it is vegan!
- ★ Let's break into two groups to cook



Stuff you will need

Equipment needed:

- ★ Hot plate
- ★ Pot
- ★ Cupcake tray
- ★ Measuring cups
- ★ Measuring spoons
- ★ Spatula



And Ingredients:

- ★ Water
- ★ Mango puree
- ★ Coconut milk
- ★ Sugar
- ★ Lemon juice
- ★ Agar agar

Recipe part 1: Mango

- ★ Heat 1 cup of water in the pot
- ★ When it comes to a boil, reduce the heat and add ½ cup of sugar and 2 tablespoons agar agar powder
- ★ Mix well and make sure the sugar and agar agar is dissolved completely
- ★ Add half the can of mango puree. Mix and cook for another 5 minutes.
- ★ Add some lemon juice (~1 tbsp, but who's counting?!)
- ★ Once everything is well incorporated, pour into the cupcake tins only filling them halfway!

Cool down ~20 mins?

- ★ Let's wait for the mixture to solidify (I'll set a timer!)
- ★ Wash out pots
- ★ Let's talk about materials?

Bioplastic Cook Book by Margaret Dunne

- ★ Agar bioplastic base recipe came from this book
- ★ It is also a recipe (like we are cooking today!)

Ingredients

Recipe	Brittle		>		Flexible
Glycerine (g)	0.0	1.4	2.7	5.4	
Water (ml)	40	40	40	40	
Agar (g)	1.6	1.6	1.6	1.6	

Sound familiar to anyone?!



Bioplastic Cook Book

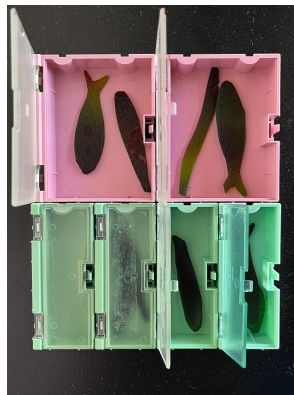
for **FABTEXTILES**
by Margaret Dunne

A catalogue of bioplastic recipes.

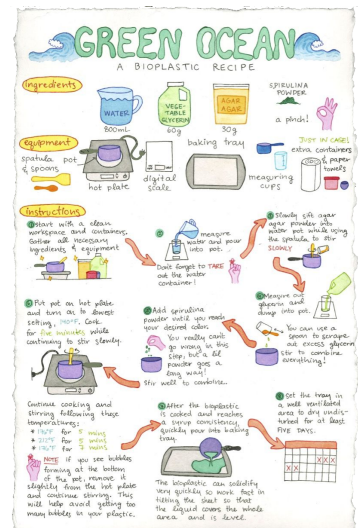
Material Kitchen with Yeseul Song



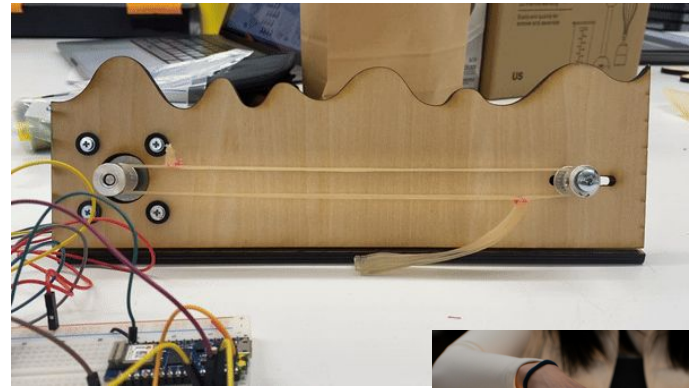
★ A sustainable material resource for ITP community and beyond



60g vegetable glycerin



Material Kitchen



Recipe part 2: Coconut

- ★ Heat $\frac{2}{3}$ cup of water in the pot
- ★ When it comes to a boil, reduce the heat and add $\frac{1}{4}$ cup of sugar and 1 teaspoon agar agar powder
- ★ Mix well and make sure the sugar and agar agar is dissolved completely
- ★ Add one cup of coconut milk. Mix and cook for 5 minutes.
- ★ Once everything is well incorporated, pour on top of the mango layer filling the cupcake tin

Resources

- ★ [Material Kitchen](#) (ITP servers currently down 🙄)
- ★ [Recipe](#)
- ★ [Bioplastic Cook Book](#)