

# BIO-CYCLE BIKE SEAT

bar bendet

A photograph of a cyclist from behind, riding a bicycle on a paved road that curves through a dense, green forest. The cyclist is wearing a dark helmet and a dark cycling jersey with light-colored stripes on the shoulders. The scene is set during the day with natural sunlight filtering through the trees.

how might we implement  
**biomaterials**  
in our everyday life?

A close-up photograph of several mushrooms with white caps and yellowish-orange gills, growing from a brown, textured substrate. The lighting is soft, creating a natural and organic feel.

# MATERIALS

A photograph of a bicycle leaning against a dark, curved surface, possibly a car or a wall. The background shows a scenic landscape with mountains and a clear sky. The bicycle frame has "EDCILLI" printed on it.

# ERGONOMICS



# KOMBUCHA

# GELATINE

# MYCELIUM

# KOMBUCHA LEATHER ALTERNATIVE

## 3/4 TRIAL

### Measurements:

- 12 cups water
- $\frac{3}{4}$  cup sugar
- 5 bags of black tea
- 4 tbsp of apple cider vinegar
- Full bottle of kombucha

### Process:

- 16 day processing
- Washed with dish soap + baking soda
- 3 days to dry fully

**3/4 TRIAL**



**3/4 TRIAL**



**3/4 TRIAL**



**3/4 TRIAL**



# 3/4 TRIAL



## 2/14 TRIAL

### Measurements:

- 8 cups water
- $\frac{1}{2}$  cup sugar
- 4 bags of black tea
- 2 tbsp apple cider vinegar
- $\frac{1}{2}$  bottle of kombucha

### Process:

- 35 day processing
- Washed with dish soap + baking soda
- 5 days to dry fully

**2/14 TRIAL**



**2/14 TRIAL**



**2/14 TRIAL**



**2/14 TRIAL**



**2/14 TRIAL**



**\*FAILED\***

**2/20 TRIAL**

**\*FAILED\***

Measurements:

- 12 cups water
- $\frac{3}{4}$  cup sugar
- 5 bags of black tea
- 4 tbsp of apple cider vinegar
- $\frac{1}{2}$  bottle of one kombucha bottle, with a full bottle of expired kombucha

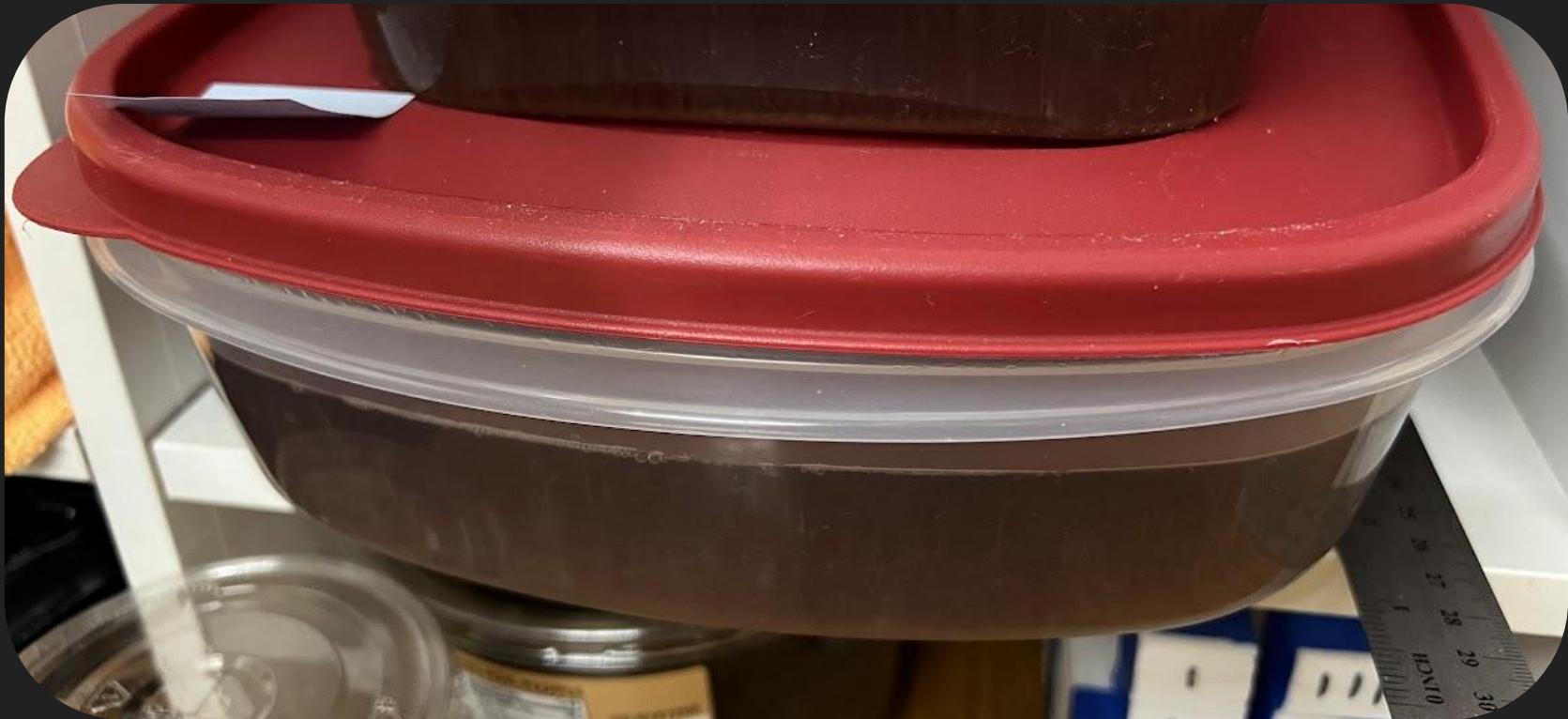
Process:

- Ended up not having enough air to create a sheet
- Put in jars to see if it would still grow, and it did

**\*FAILED\***

**2/20 TRIAL**

**\*FAILED\***



**\*FAILED\***

**2/20 TRIAL**

**\*FAILED\***



**\*FAILED\***

**2/20 TRIAL**

**\*FAILED\***



# GEELATIN FOAM ALTERNATIVE

## 2/21 TRIAL

### Measurements:

- 3 tbsp gelatine
- 4 tbsp water
- 3 tbsp glycerin
- 1 tbsp dish soap

### Process:

- Mixed dish soap when sample was cooling
- Some places hardened faster
- 5 days to dry fully (not sticky)

**2/21 TRIAL**



## 3/11 TRIAL

### Measurements:

- 6 tbsp gelatine
- 8 tbsp water
- 6 tbsp glycerin
- 2 tbsp dish soap

### Process:

- Power whisked dish soap when sample was on medium heat
- Some parts were burnt, then solidified faster
- 4 days to dry fully (not sticky)

**3/11 TRIAL**



## 3/11 TRIAL



### OBSERVATIONS:

#### Layering:

- **Bubbles** rose to the top of the sample
- Film of gelatine sunk, at the very bottom of the sample  
**(strongest part)**

# **3/13 TRIALS**

## Measurements:

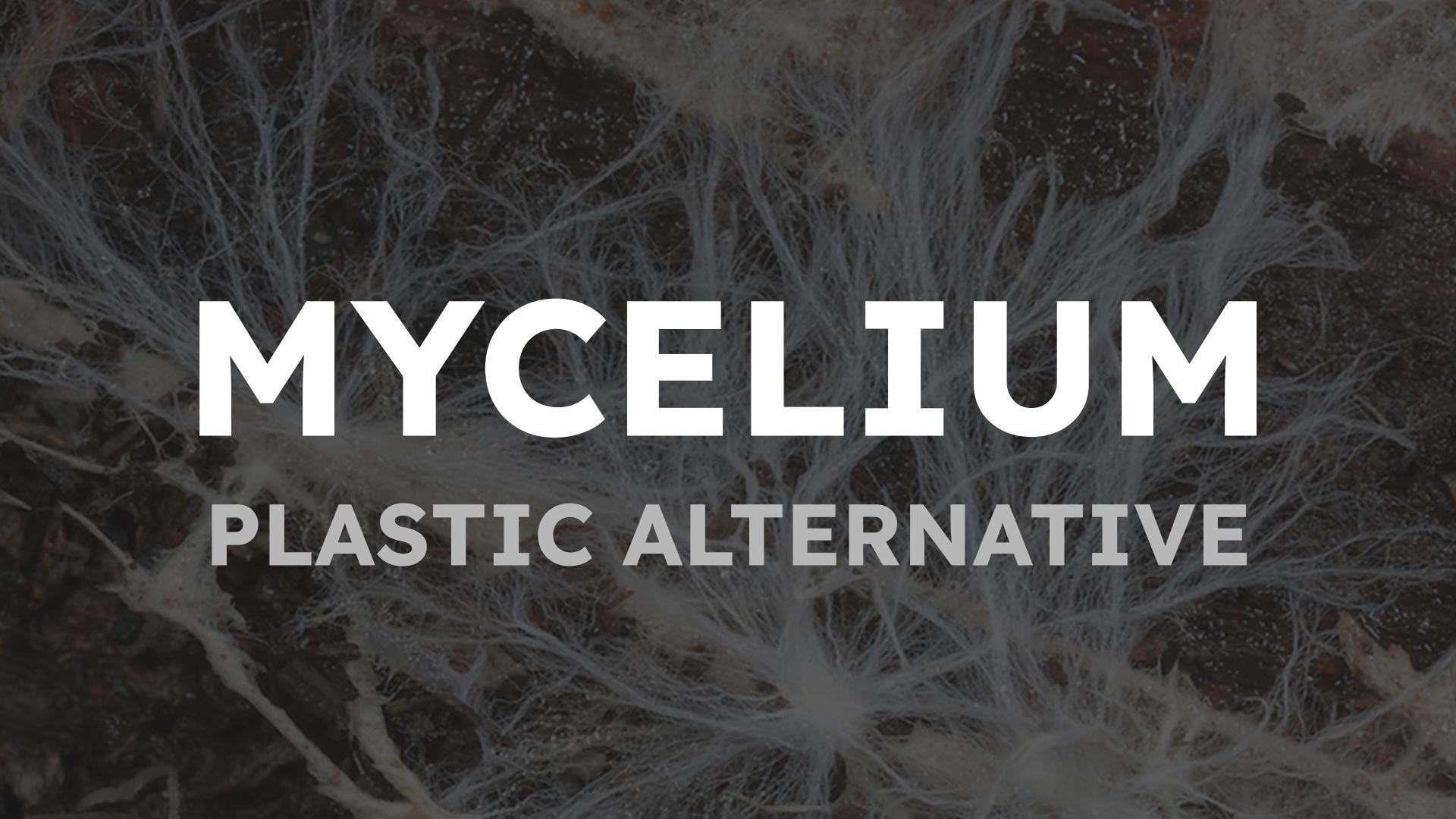
- 2 tbsp gelatine
- 3 tbsp water
- 2 tbsp glycerin
- 1 tbsp dish soap
- Yellow or Green food coloring

## Process:

- Yellow: hand whisked dish soap until bubbles plateaued
- Green: Power whisked dish soap until stiff peaks (like meringue)
- 4 days to dry fully (not sticky)

**3/13 TRIALS**



The background of the image is a close-up, low-angle shot of a dense, intricate network of white mycelium (fungal threads) growing on a dark, granular substrate. The mycelium forms a complex, branching structure that covers the entire frame.

# MYCELIUM PLASTIC ALTERNATIVE

## 2/21 TRIAL

### Substrates:

- Cotton balls
- Sawdust

### Process:

- Tried to layer substrates together with premade mycelium
- After two days, everything was mixed together and compacted to add pressure
- Water was sprayed in about every week

2/21 TRIAL



2/29



4/25

## 2/22 TRIAL

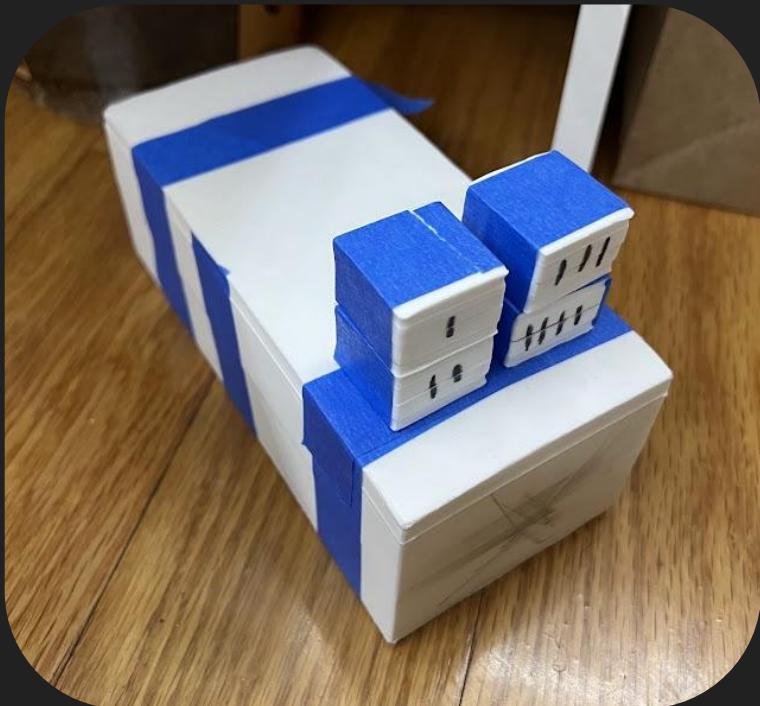
### Substrates:

- Sawdust

### Process:

- Layered sawdust with the existing substrate, with water
- Closed and taped the mold together
- No adjustments made after sealed

**2/22 TRIAL**



**2/29**



**3/18**

**2/22 TRIAL**



**3/22**



**4/4**

# FULL TEST RUN: MATERIALS

## COMBINING MYCELIUM WITH GELATINE



# COMBINING MYCELIUM WITH GELATINE

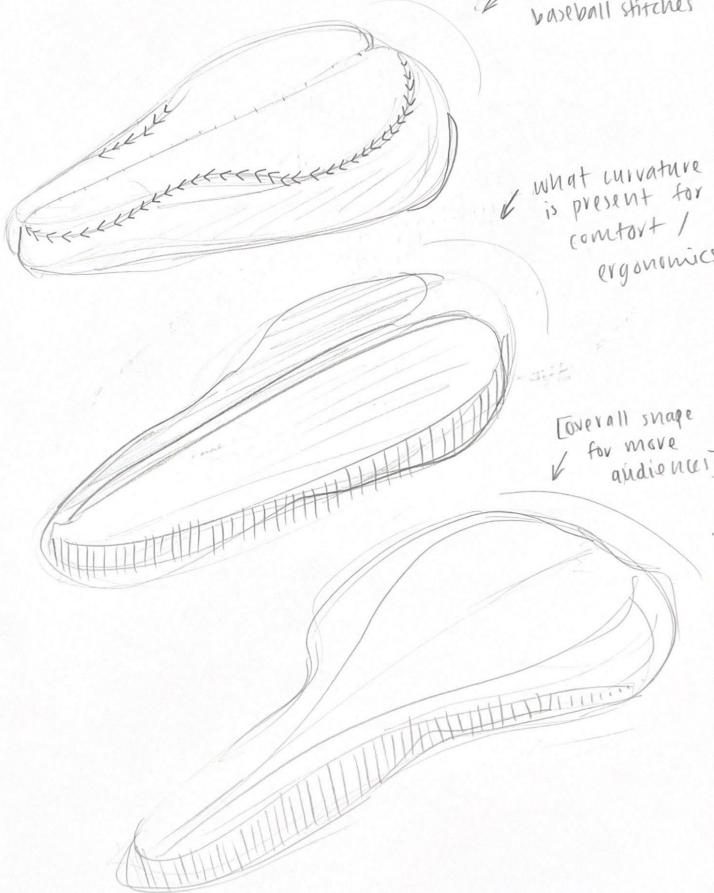


## COMBINING MYCELIUM WITH GELATINE



A cyclist in a dark suit is riding a road bike on a paved road. The background shows a range of mountains under a clear sky. The cyclist is positioned in the center of the frame, with the text overlaid.

# DESIGNING THE SEAT

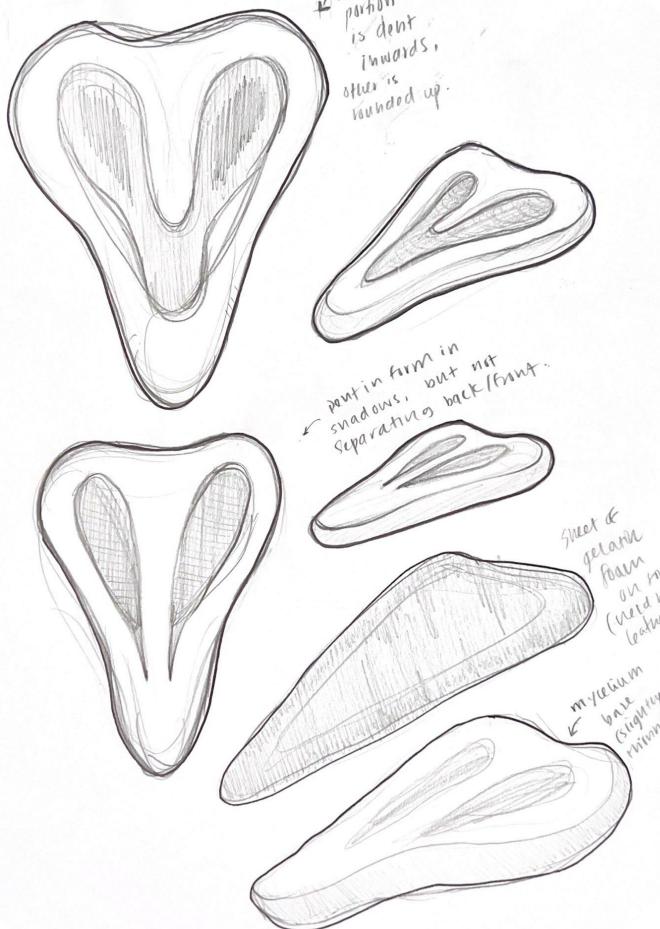


# FIRST CONCEPTS

Figuring out **stitching**

Overall **shapes**

Design language

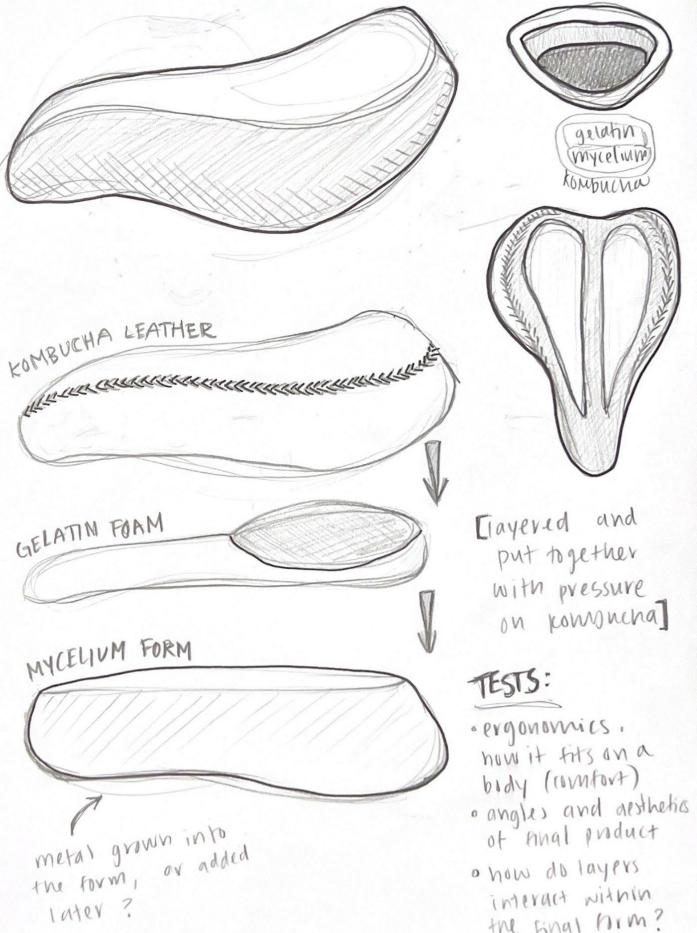


# ERGONOMICS

Target **audience**

Decreasing **pressure**

[ergonomics research link](#)



# MATERIALS X DESIGN

Putting together materials

**Interaction** between user and materials

Incorporating the **final design**























