

S-1



S-2



S-3

### Starch based samples

S1,2,3



G-1



G-2



G-3

### Gelatin based samples

G1,2,3

	S-1	S-2	S-3
	- 15gr Pineapple Leaves	- 10gr Corn Tessel	- 15gr Coconut Tessel
	- 50gr Starch	- 50gr Starch	- 50gr Starch
	- 60ml Water	- 60ml Water	- 60ml Water
	- 5ml Vinegar	- 5ml Vinegar	- 5ml Vinegar
	- 5ml Glycerin	- 5ml Glycerin	- 5ml Glycerin
oven:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
air fryer:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
air dry:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Temperature	30°C	30°C	30°C
Time period	120 Hours	100 Hours	100 Hours

	G-1	G-2	G-3
	- 90ml Oat Milk	- 90ml Coconut Milk	- 90ml Almond Milk
	- 18gr Gelatin	- 18gr Gelatin	- 18gr Gelatin
	- 13gr Oatmeal	- 13gr Coconut	- 13gr Almond
	- 3ml Glycerin	- 3ml Glycerin	- 3ml Glycerin
oven:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
air fryer:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
air dry:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Temperature	30°C	30°C	30°C
Time period	60 Hours	60 Hours	60 Hours



### Observations about the materials and their effects (starch based)

- 1) Due to the fine and dry structure of corn silk, its opacity and strength were high.
- 2) Coconut rind is in powder form, so it has a soft, slightly rough and soft texture.
- 3) As the pineapple leaf becomes puree, the water and fiber in it are released and become a shiny and soft form.
- 4) When the starch and fibers are combined, the materials are better bonded together.

### Observations about the materials and their effects: (gelatin based)

- 1) When the oatmeal and gelatin came together and dried, they bonded well.
- 2) Coconut oil reduced opacity when bound with gelatin and glycerin.
- 3) When almond and almond milk combined with gelatin, a hard texture with high opacity was formed.
- 4) Vegetable milks released their starches with the support of their pulp and bonded well with gelatin.



# RECIPE 01

## Ingredient List



Pineapple Leaves



Starch



Water



Vinegar



Glycerin



## Preperation Steps



1- Blend pineapple leaves.



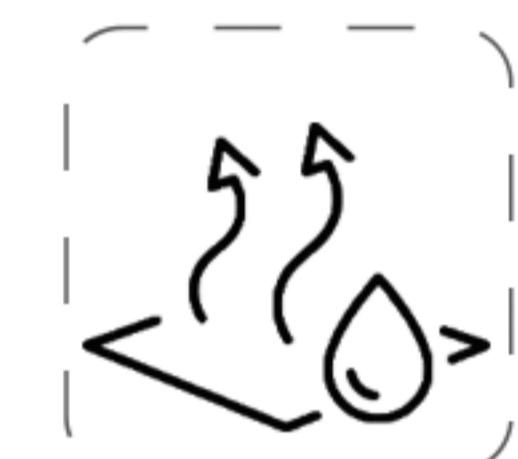
2- Get the ingredients into a bowl.



3- Cook the mixture for 2-3 minutes.



4- Pour the mixture in to the mold.



5- Let the mixture dry.

## Material Assessments

hard	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	soft	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	opaque	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	transparent	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
smooth	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	rough	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	tough	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	ductile	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
matte	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	glossy	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	light	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	heavy	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
elastic	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	not elastic	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	fibred	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	not-fibred	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
strong	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	weak	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>				

Forming Technique:

## Molding

References:  
[-http://www.materiom.org/recipe/692](http://www.materiom.org/recipe/692)  
[-https://bilimgenc.tubitak.gov.tr/makale/doga-dostu-biyoplastik-yapalim#:~:text=Ni%C5%9Fasta%2Dsu%20kar%C4%B1%C5%9F%C4%B1m%C4%B1na%20sirke%20eklenip,uzun%20zincirli%20biyoplastik%20elde%20ederiz.](https://bilimgenc.tubitak.gov.tr/makale/doga-dostu-biyoplastik-yapalim#:~:text=Ni%C5%9Fasta%2Dsu%20kar%C4%B1%C5%9F%C4%B1m%C4%B1na%20sirke%20eklenip,uzun%20zincirli%20biyoplastik%20elde%20ederiz.)



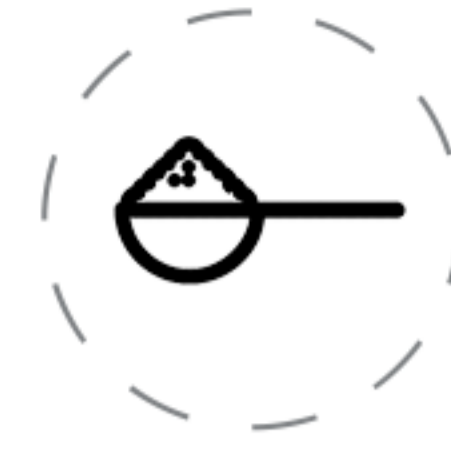
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## Ingredient List



Corn Tessel



Starch



Water



Vinegar



Glycerin

## Preperation Steps



1- Blend corn tessals.



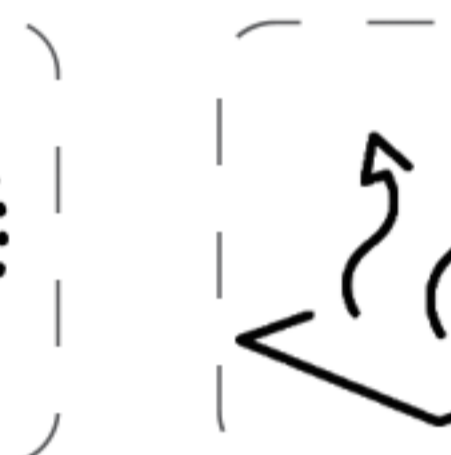
2- Get the ingredients into a bowl.



3- Cook the mixture for 2-3 minutes.



4- Pour the mixture in to the mold.



5- Let the mixture dry.

## Material Assessments

hard	<input type="checkbox"/>	soft	<input type="checkbox"/>	opaque	<input type="checkbox"/>	transparent	<input type="checkbox"/>
smooth	<input type="checkbox"/>	rough	<input type="checkbox"/>	tough	<input type="checkbox"/>	ductile	<input type="checkbox"/>
matte	<input type="checkbox"/>	glossy	<input type="checkbox"/>	light	<input type="checkbox"/>	heavy	<input type="checkbox"/>
elastic	<input type="checkbox"/>	not elastic	<input type="checkbox"/>	fibred	<input type="checkbox"/>	not-fibred	<input type="checkbox"/>
strong	<input type="checkbox"/>	weak	<input type="checkbox"/>				

## RECIPE 02

Forming Technique:

## Molding

References:

[-http://www.materiom.org/recipe/692](http://www.materiom.org/recipe/692)  
[-https://bilimgenc.tubitak.gov.tr/makale/doga-dostu-biyoplastik-yapalim#:~:text=Ni%C5%9Fasta%2Dsu%20kar%C4%B1%C5%9F%C4%B1m%C4%B1na%20sirke%20eklenip,uzun%20zincirli%20biyoplastik%20elde%20ederiz.](https://bilimgenc.tubitak.gov.tr/makale/doga-dostu-biyoplastik-yapalim#:~:text=Ni%C5%9Fasta%2Dsu%20kar%C4%B1%C5%9F%C4%B1m%C4%B1na%20sirke%20eklenip,uzun%20zincirli%20biyoplastik%20elde%20ederiz.)

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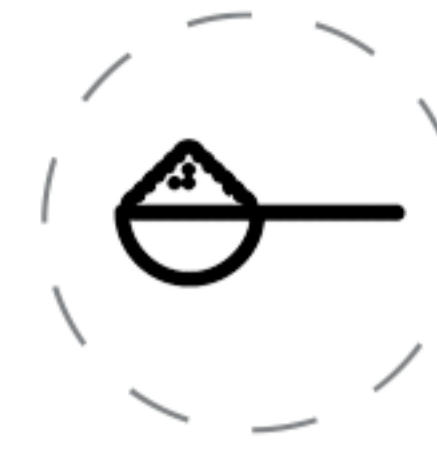




## Ingredient List



Coconut Tessel



Starch



Water



Vinegar



Glycerin

## Preperation Steps



1- Blend pine-apple leaves.



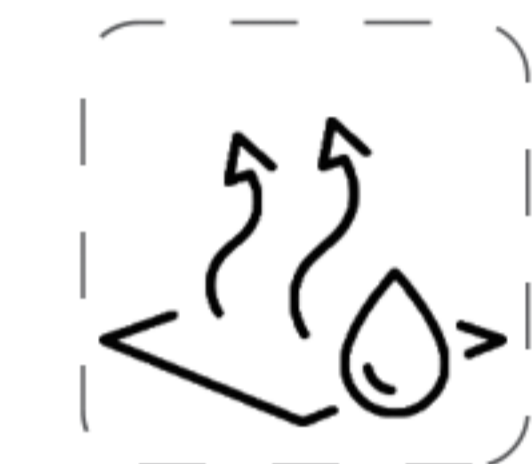
2- Get the ingredients into a bowl.



3- Cook the mixture for 2-3 minutes.



4- Pour the mixture in to the mold.



5- Let the mixture dry.

## Material Assessments

hard	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	soft	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	opaque	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	transparent
smooth	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	rough	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	tough	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	ductile
matte	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	glossy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	light	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	heavy
elastic	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	not elastic	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	fibred	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	not-fibred
strong	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	weak	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>						

# RECIPE 03

Forming Technique:

## Molding

References:

- <http://www.materiom.org/recipe/692>
- <https://bilimgenc.tubitak.gov.tr/makale/doga-dostu-biyoplastik-yapalim#:~:text=Ni%C5%9Fasta%2Dsu%20kar%C4%B1%C5%9F%C4%B1m%C4%B1na%20sirke%20eklenip,uzun%20zincirli%20biyoplastik%20elde%20ederiz.>





## Ingredient List



Oat Milk



Gelatin



Oatmeal



Glycerin

## Preperation Steps



1- Sieve oat milk.



2- Get the ingredients into a bowl.



3- Cook the mixture for 2-3 minutes.



4- Pour the mixture in to the mold.



5- Let the mixture dry.

## Material Assessments

hard	<input type="checkbox"/>	soft
smooth	<input type="checkbox"/>	rough
matte	<input type="checkbox"/>	glossy
elastic	<input type="checkbox"/>	not elastic
strong	<input type="checkbox"/>	weak

opaque	<input type="checkbox"/>	transparent
tough	<input type="checkbox"/>	ductile
light	<input type="checkbox"/>	heavy
fibred	<input type="checkbox"/>	not-fibred

# RECIPE 04

Forming Technique:

## Molding

References:

- <http://www.materiom.org/recipe/692>
- <https://bilimgenc.tubitak.gov.tr/makale/doga-dostu-biyoplastik-yapalim#:~:text=Ni%C5%9Fasta%2Dsu%20kar%C4%B1%C5%9F%C4%B1m%C4%B1na%20sirke%20eklenip,uzun%20zincirli%20biyoplastik%20elde%20ederiz.>





## Ingredient List



Coconut Milk



Gelatin



Coconut



Glycerin

## Preperation Steps



1- Sieve coconut milk.



2- Get the ingredients into a bowl.



3- Cook the mixture for 2-3 minutes.



4- Pour the mixture in to the mold.



5- Let the mixture dry.

## Material Assessments

hard	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	soft
smooth	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	rough
matte	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	glossy
elastic	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	not elastic
strong	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	weak

opaque	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	transparent
tough	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	ductile
light	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	heavy
fibred	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	not-fibred

# RECIPE 05

Forming Technique:

## Molding

References:  
[-http://www.materiom.org/recipe/692](http://www.materiom.org/recipe/692)  
[-https://bilimgenc.tubitak.gov.tr/makale/doga-dostu-biyoplastik-yapalim#:~:text=Ni%C5%9Fasta%2Dsu%20kar%C4%B1%C5%9F%C4%B1m%C4%B1na%20sirke%20eklenip,uzun%20zincirli%20biyoplastik%20elde%20ederiz.](https://bilimgenc.tubitak.gov.tr/makale/doga-dostu-biyoplastik-yapalim#:~:text=Ni%C5%9Fasta%2Dsu%20kar%C4%B1%C5%9F%C4%B1m%C4%B1na%20sirke%20eklenip,uzun%20zincirli%20biyoplastik%20elde%20ederiz.)





### Ingredient List



Almond Milk



Gelatin



Almond



Glycerin

### Preperation Steps



1- Sieve almond milk.



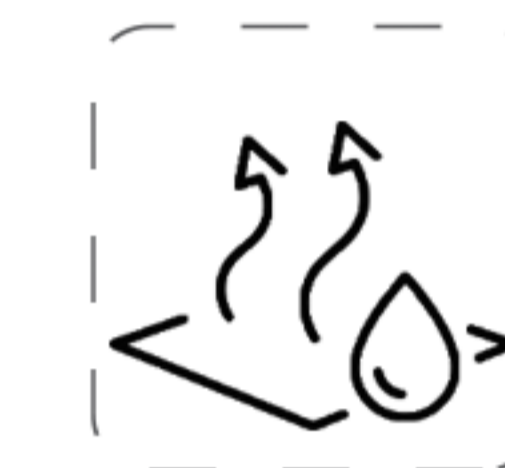
2- Get the ingredients into a bowl.



3- Cook the mixture for 2-3 minutes.



4- Pour the mixture in to the mold.



5- Let the mixture dry.

### Material Assessments

hard	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	soft	opaque	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	transparent
smooth	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	rough	tough	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	ductile
matte	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	glossy	light	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	heavy
elastic	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	not elastic	fibred	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	not-fibred
strong	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	weak						

## RECIPE 06

Forming Technique:

### Molding

References:  
[-http://www.materiom.org/recipe/692](http://www.materiom.org/recipe/692)  
[-https://bilimgenc.tubitak.gov.tr/makale/doga-dostu-biyoplastik-yapalim#:~:text=Ni%C5%9Fasta%2Dsu%20kar%C4%B1%C5%9F%C4%B1m%C4%B1na%20sirke%20eklenip,uzun%20zincirli%20biyoplastik%20elde%20ederiz.](https://bilimgenc.tubitak.gov.tr/makale/doga-dostu-biyoplastik-yapalim#:~:text=Ni%C5%9Fasta%2Dsu%20kar%C4%B1%C5%9F%C4%B1m%C4%B1na%20sirke%20eklenip,uzun%20zincirli%20biyoplastik%20elde%20ederiz.)



Buğra Demirtaş - Muhammet Ali Canbaz