ISEP INSTITUTO SUPERIOR DE ENGENHARIA DO PORTO

LeftLovers

Final Presentation

Smart Food Production In Small Spaces

Loopbin

Team 3

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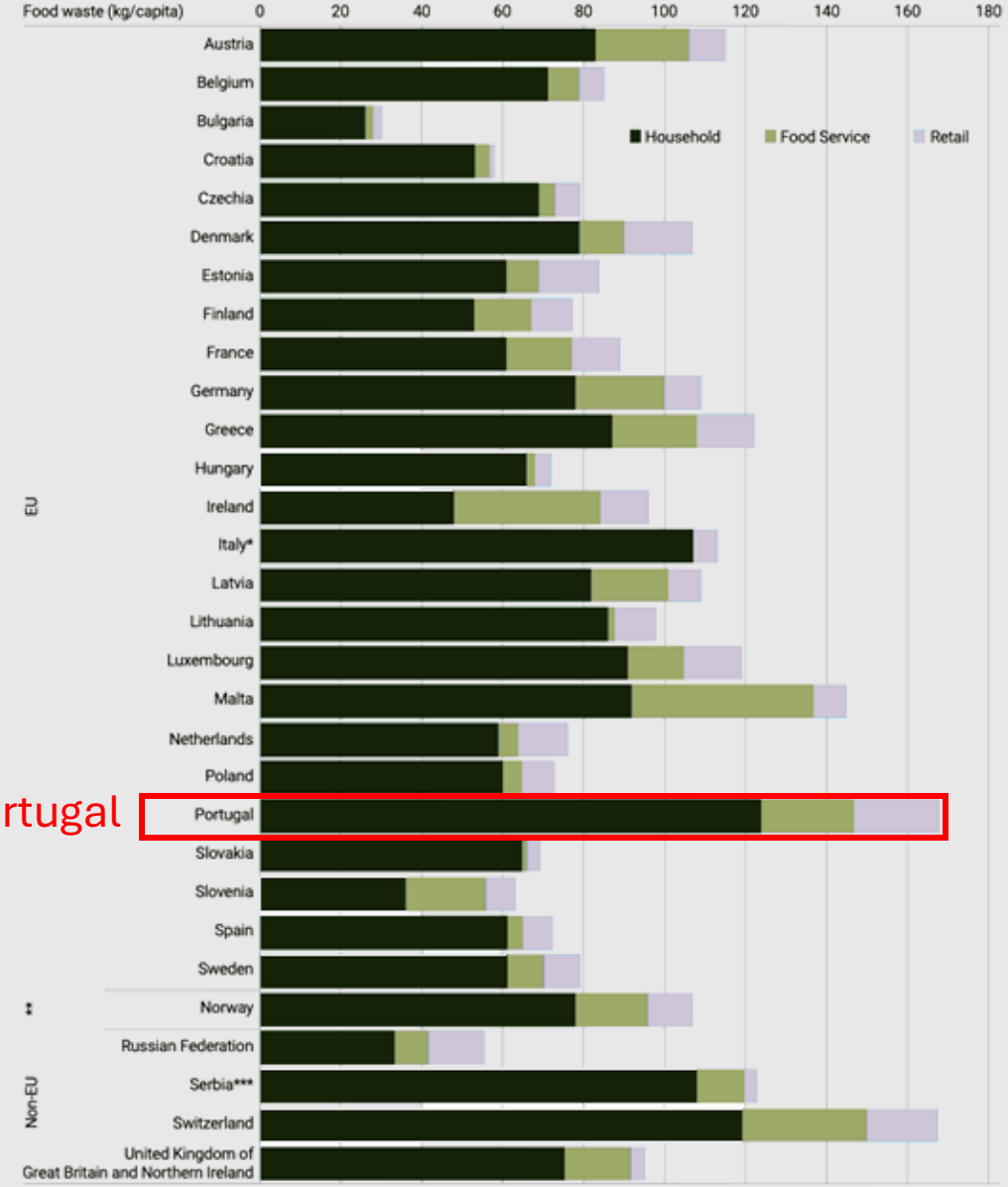
18/06/25

Food waste across Europe



Source: United Nations Environment Programme (2024). Food Waste Index Report 2024. Nairobi [pg. 34].

UN Sustainability Development Goals

Requirements & Concept

Objectives	Requirements
Improve accessibility	User Friendly Design & Price
Faster Composting	Composting Process of 4-6 weeks
High Quality Output	Suitable Compost for Growing Plants
User Support	Mobile App to Monitor Composting Process
Sustainable Impact	Environmental Sustainable Materials

Compost

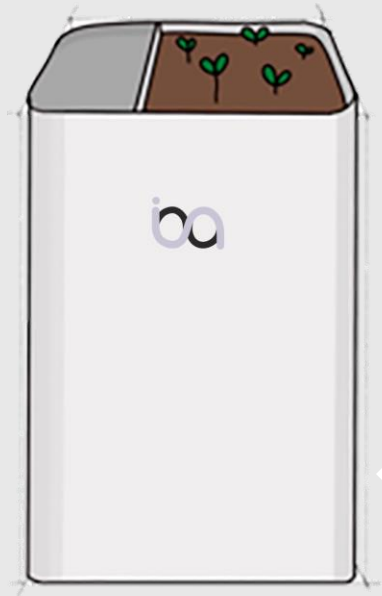
Vegetables / Fruits scraps, Eggshells, Trimming Plants, Fresh Cut Grass…

33%

33%

33%

Egg Trays, Dry Leaves, Vacuum Dust, Dry Grass, Dry Leaves, Cardboard, Paper, Wood Chips…



Grinding

1

Composting

2

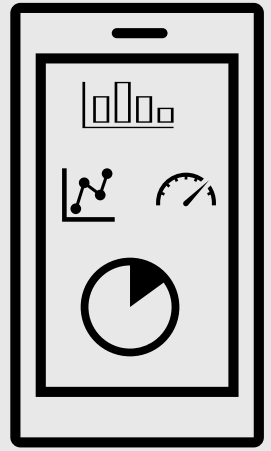
Monitoring

Sensing Soil & Gas

CO_2

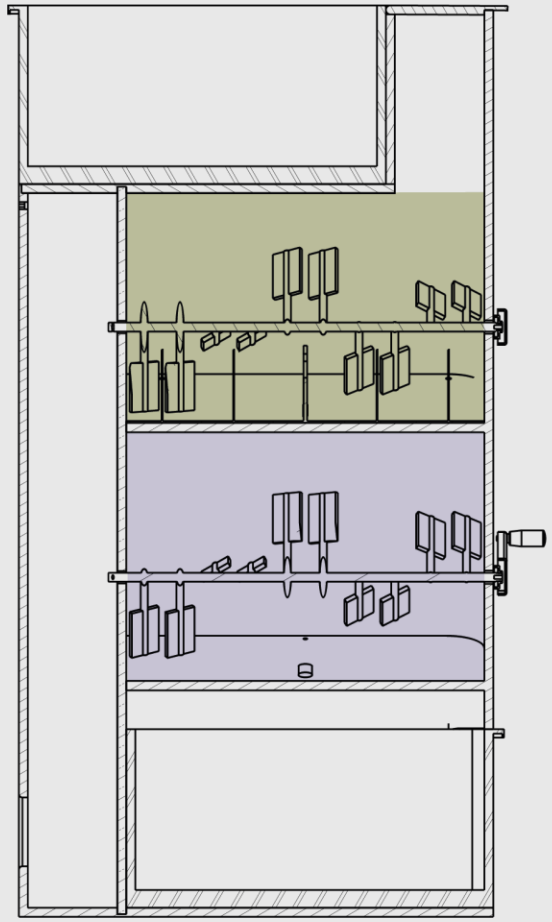
Action

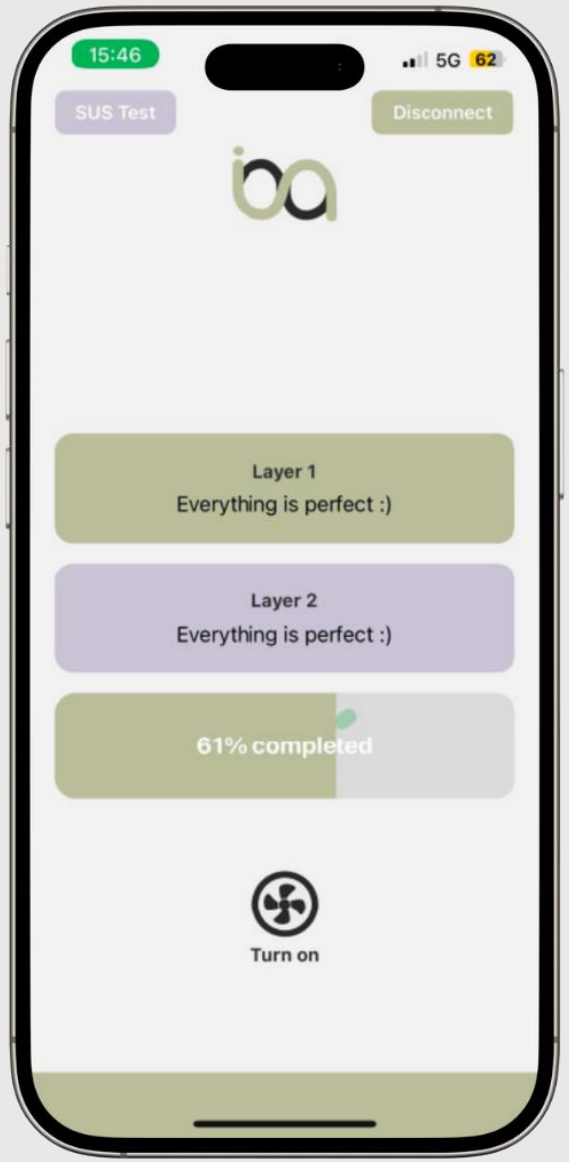
Ventilation & Movement System

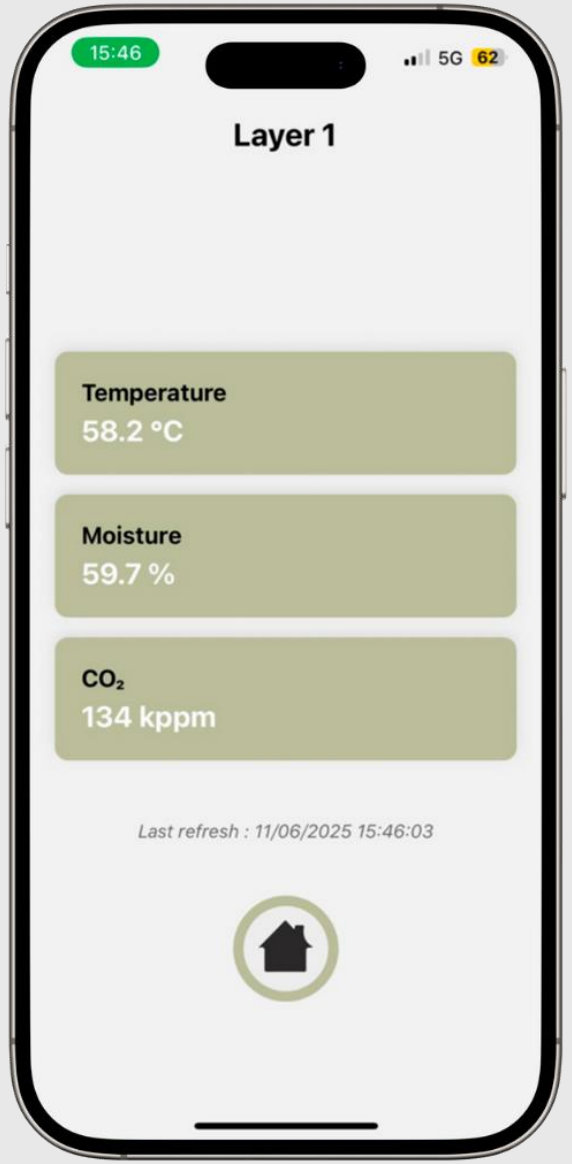


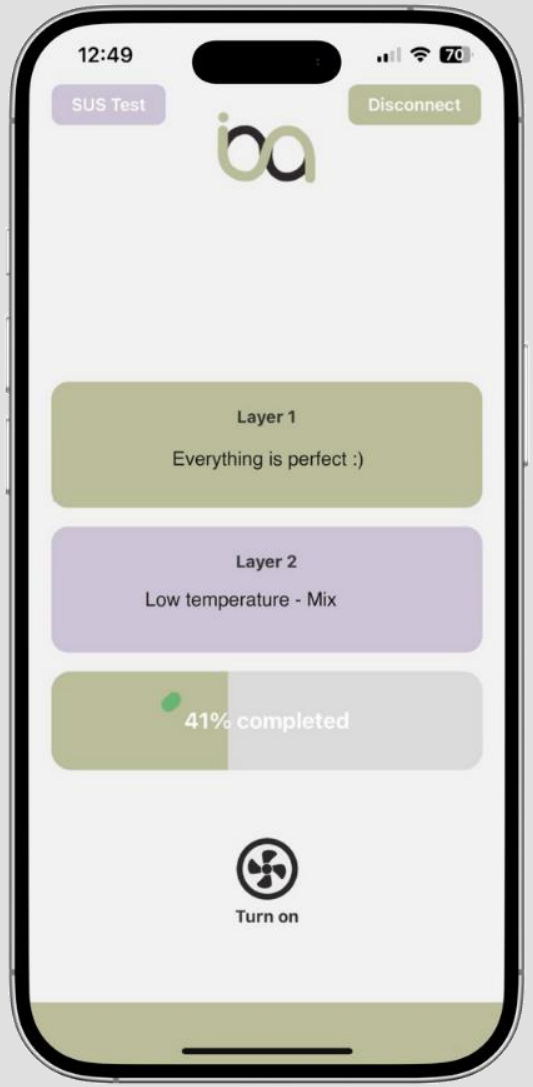
High-Quality Compost

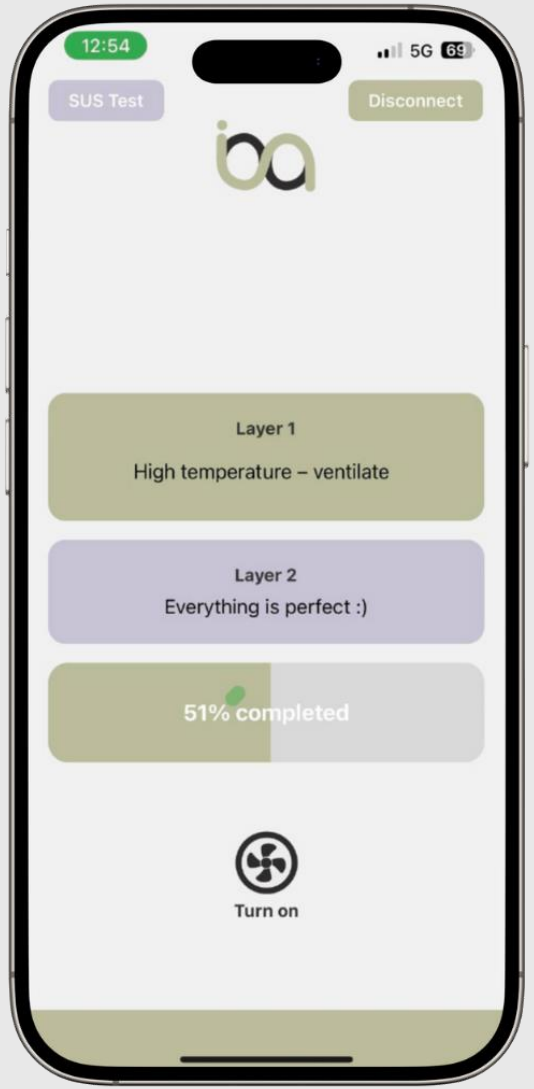
Our product

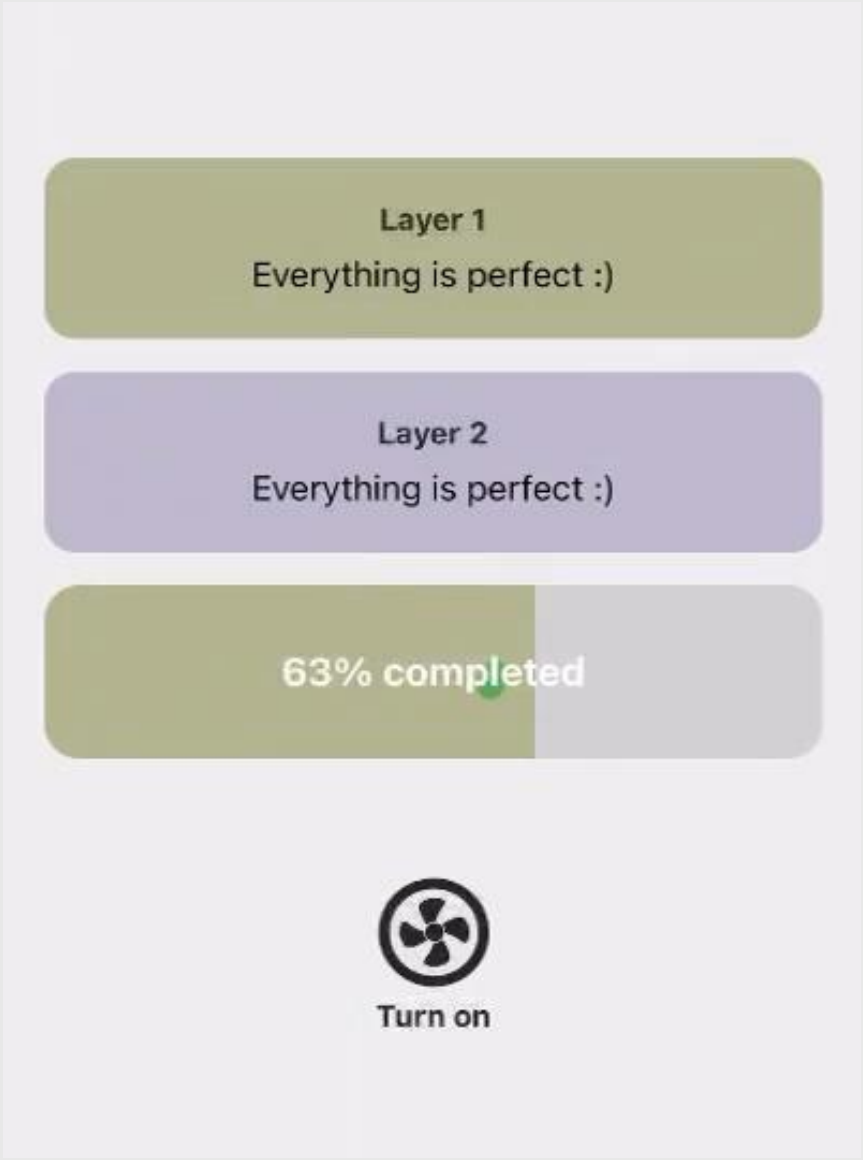

Layer 1
Layer 2


15:46
5G 62
SUS Test
Disconnect
Layer 1
Everything is perfect :)
Layer 2
Everything is perfect :)
61% completed
Turn on


15:46
5G 62
Layer 1
Temperature
58.2 °C
Moisture
59.7 %
CO_2
134 kppm
Last refresh : 11/06/2025 15:46:03

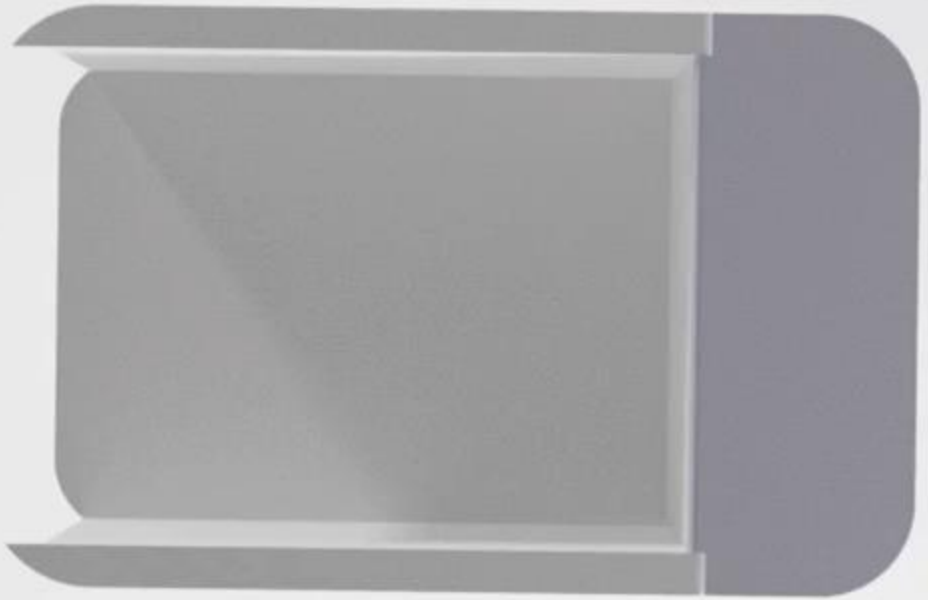

12:49
70
SUS Test
Disconnect
Layer 1
Everything is perfect :)
Layer 2
Low temperature - Mix
41% completed
Turn on


12:54
5G 69
SUS Test
Disconnect
Layer 1
High temperature – ventilate
Layer 2
Everything is perfect :)
51% completed
Turn on

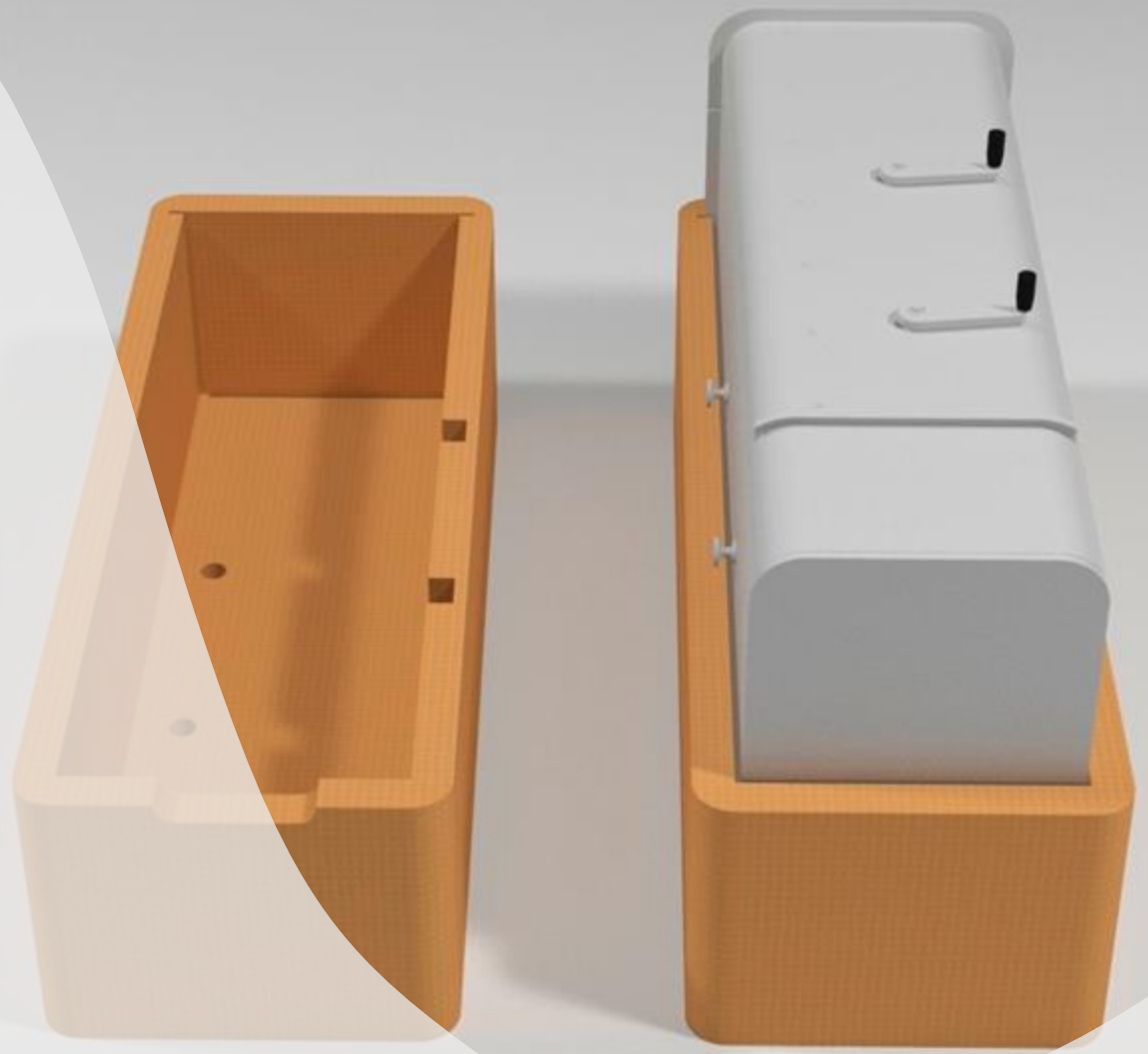

Layer 1
Everything is perfect :)
Layer 2
Everything is perfect :)
63% completed
Turn on


13:25
5G
59
SUS Test
Disconnect
Layer 1
Open the hatch
Layer 2
Open the hatch
100% THE COMPOST IS READY
hold 3s. to reset
Turn on

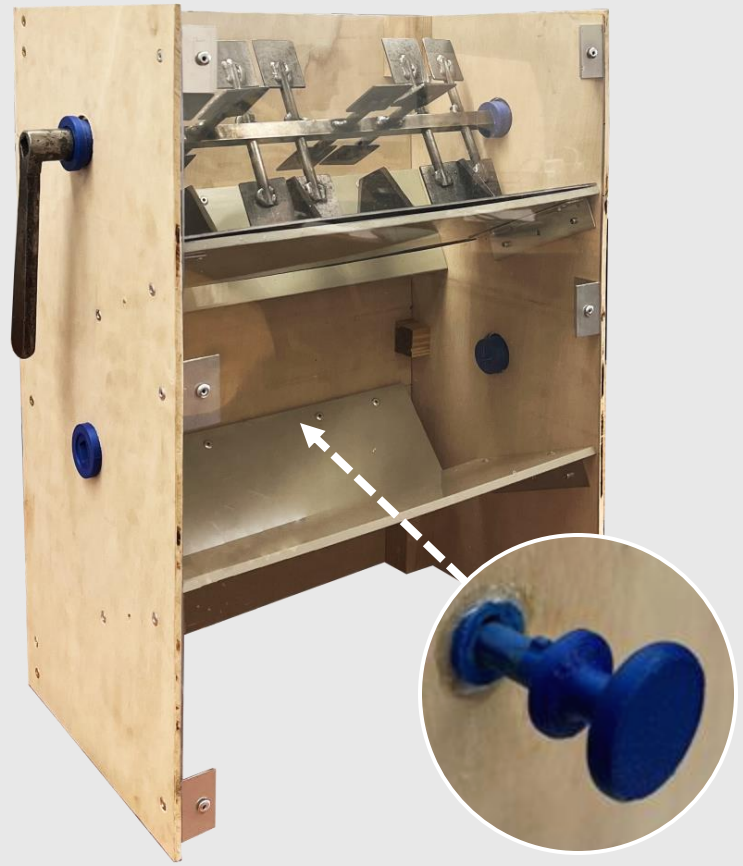

13:25
5G
59
SUS Test
Disconnect
Layer 1
Open the hatch
Layer 2
Open the hatch
100% THE COMPOST IS READY
hold 3s. to reset
Turn on



Packaging



Prototype



Manufactured prototype

Two different composting layers

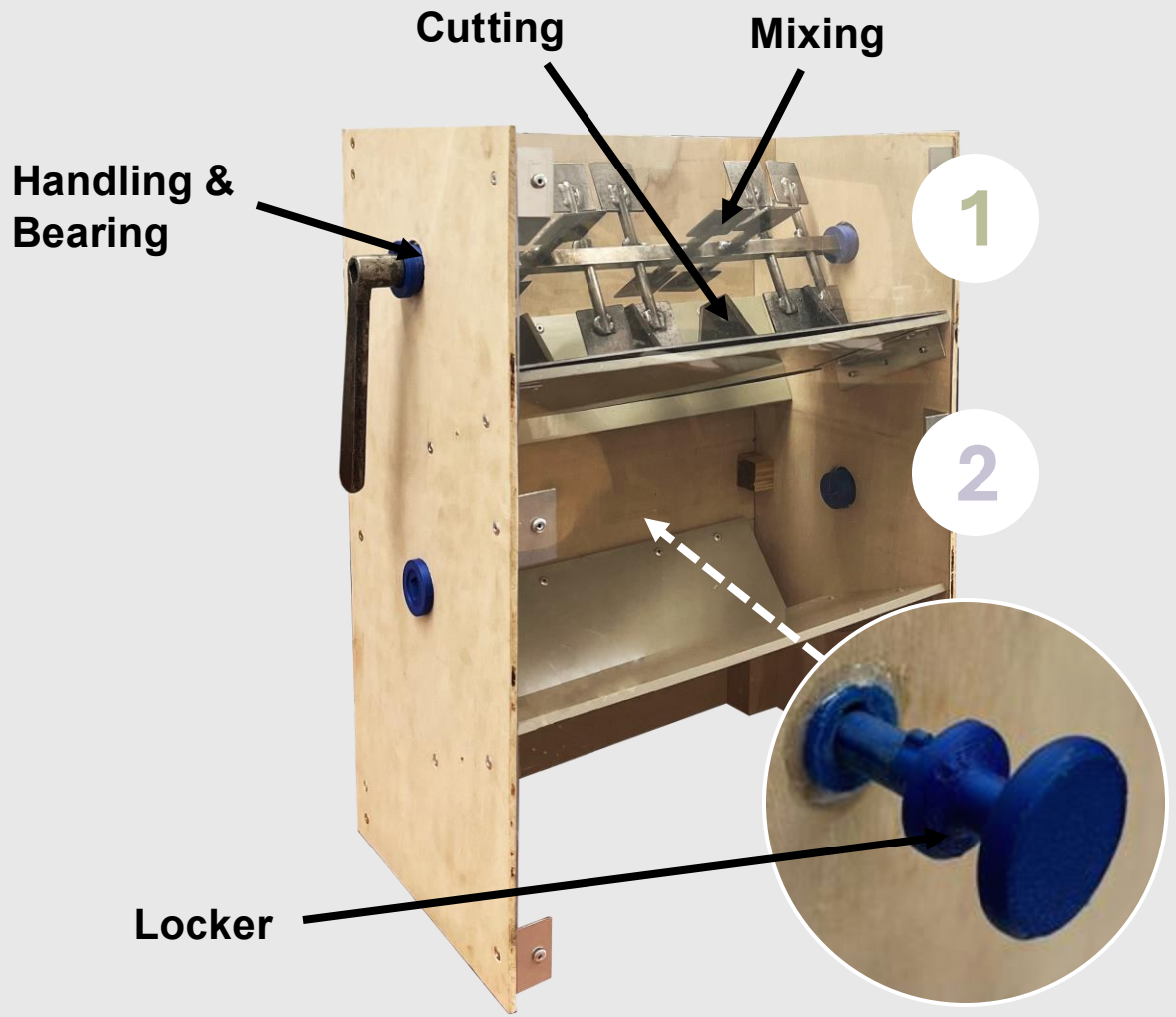
- Layers 10 % smaller than original
- Original shape maintained

Layer 1

Cutting & Mixing Part
Handling & Bearing System
Locking & Opening System

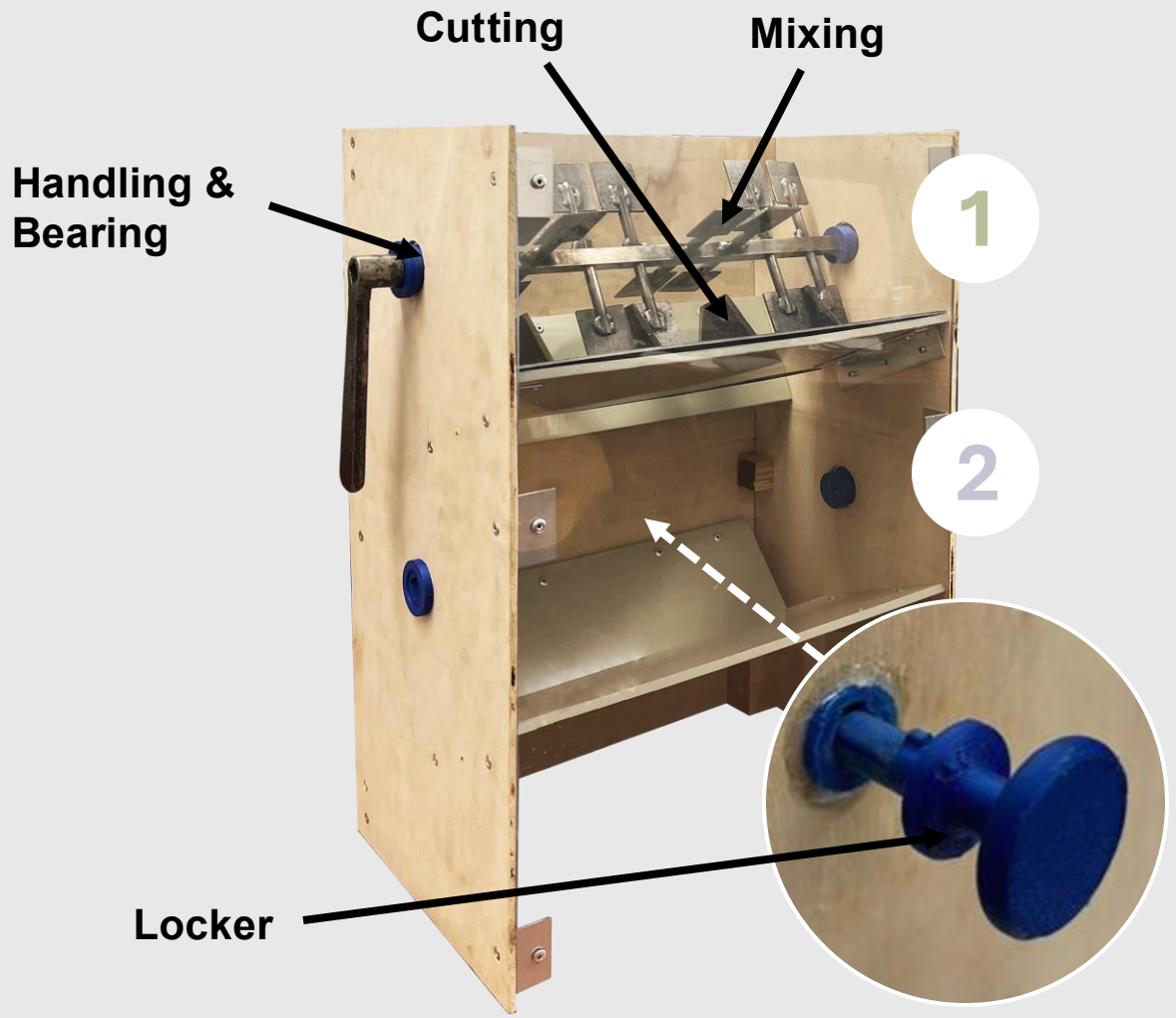
Layer 2

Locking & Opening System

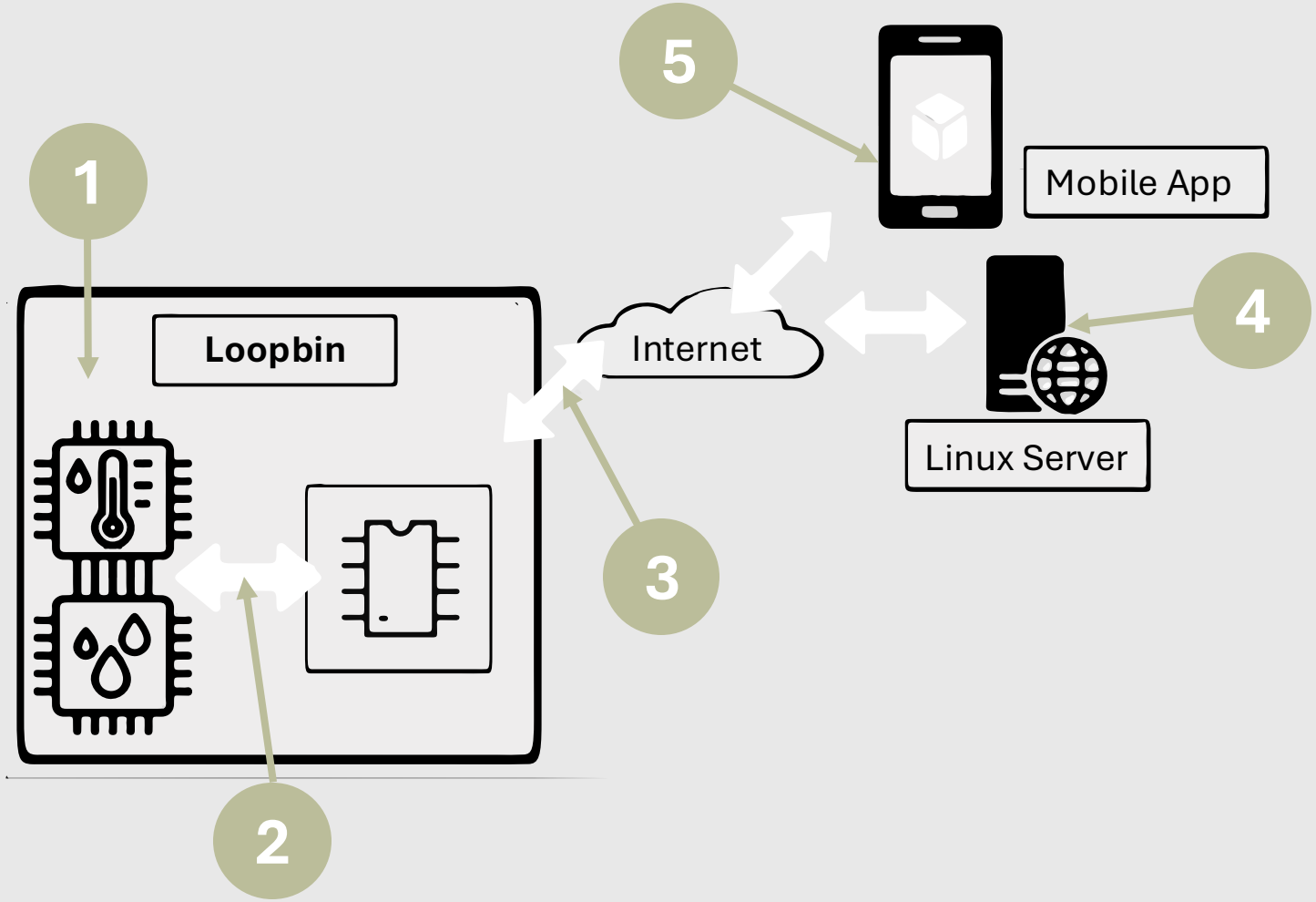


Mechanics tests

Function	Pass / Fail
Mixing	Pass
Bearing	Pass
Locker	Pass
Cutting	Fail



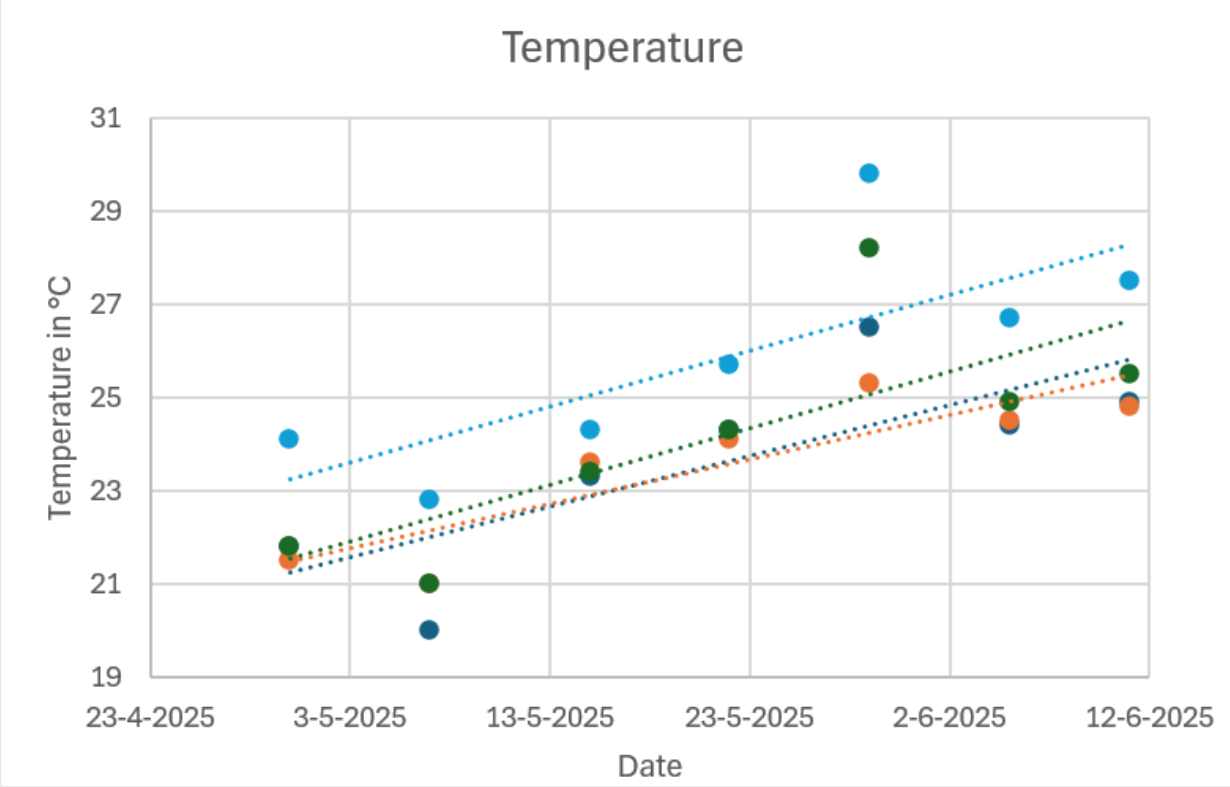
Electronics tests



N°	Function	Status
1	Sensors calibration	Pass
2	Sensors/controller communication	Pass
3	Internet communication	Pass
4	Maximum users test	Pass
5	Satisfaction of users on the app	Pass

Composting tests

-6 weeks process
-No difference in percentage moisture



April 30th

June 11th

Conclusion

Achievements

TEAMWORK & CROSS-CULTURAL COMMUNICATION

DOCUMENTATION

PROTOTYPE AND PRODUCT DEVELOPMENT

PROMOTION OF HOME GARDENING

MINIMIZING FOOD WASTE

Future development

Enable compost sharing within local communities via the app

Expand to new markets and target audiences

Design refinement, size options, and material and technology upgrades

Explore solutions to handle a wider range of waste types

Video

Loopbin

LeftLovers 2025

LOOPBIN is an intelligent composting bin that uses smart sensors to analyze various parameters such as humidity, temperature and gas levels in real time. This data is sent to the mobile app, which provides users with personalized advice on how to optimize their compost and avoid common mistakes. It makes composting easy for beginners, while ensuring high quality compost.

Add your food scraps

Monitor the process

Grow your own plants

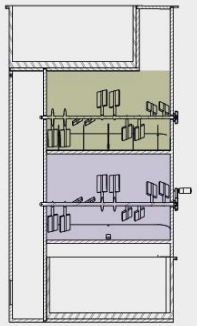
Planting box
To grow your own plants

Mixer
It is used to turn and aerate the compost

Cutting part
Its funtion is to cut the food scraps into smaller pieces

Handle
It allows the user to turn the mixer manually

Compost box
To collect the ready compost



Layer 1
The first phase of the composting process takes place here

Layer 2
The second phase of the composting process takes place here

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ISEP INSTITUTO SUPERIOR DE ENGENHARIA DO PORTO

ABOUT US

We are an international team of students, driven by innovation and sustainability will, wishing to contribute to reduce food waste.

Learn more!

Order now at:
www.leftlovers.com

Conctact us:
673465678
customer@leftlovers.com

@leftlovers_loopbin

LeftLovers ISEP INSTITUTO SUPERIOR DE ENGENHARIA DO PORTO

Loopbin

**No garden?
No problem!**

Meet the LeftLovers' Loopbin and turn your foodwaste into plant food!

HOW DOES IT WORK?

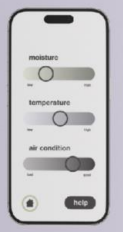
1. Put your organic waste into the bin

2.The app will give you a notification when you need to add anything or stir the waste

3.Take out your compost

4. Use the compost in the plant box on top and grow your own plants!

ABOUT THE APP



Status of the compost at all time

Reminders for optimal composting

Gardening tips tailored to your plant choices

WHY LEFTLOVERS?

- Composting without the mess
- Odor free
- Perfect for small spaces
- No garden needed
- Real time insights via the app
- Reduces food waste

THANK YOU!

ISEP INSTITUTO SUPERIOR DE ENGENHARIA DO PORTO LeftLovers