PPS Mushrooms in Circular Horticulture

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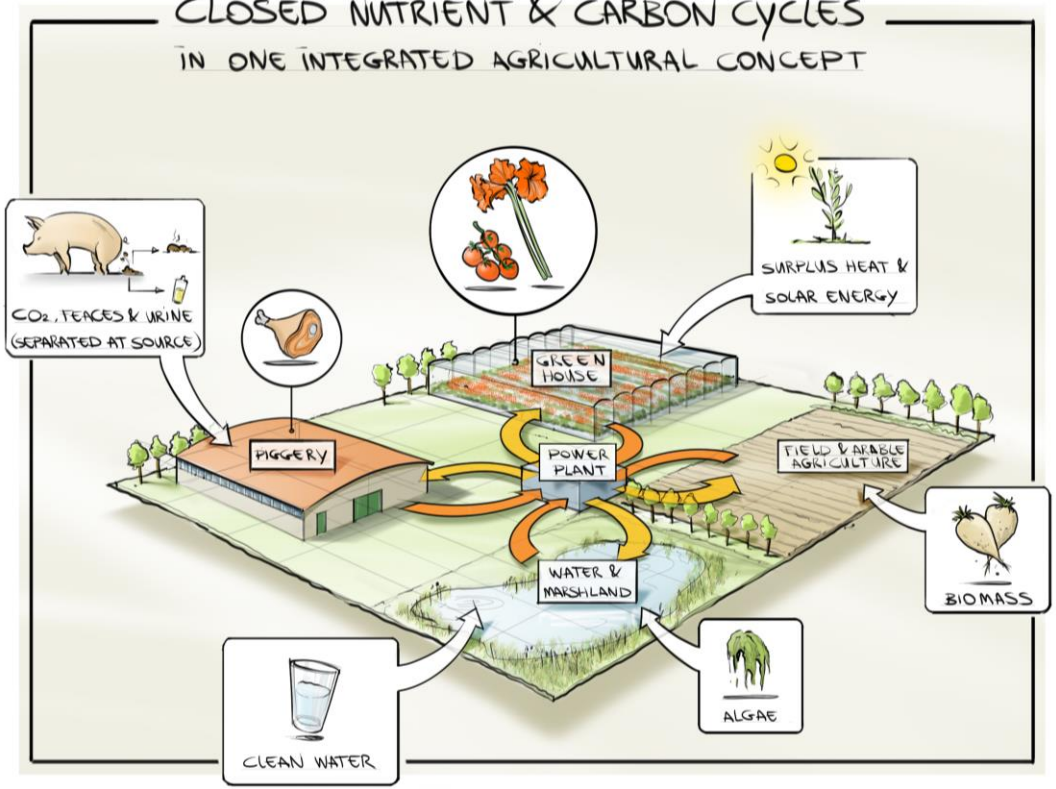
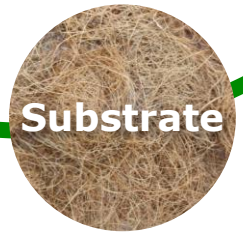
TOPSECTOR
TUINBOUW & UITGANGSMATERIALEN

Background – cross-overs



Background – mushroom production

Concept



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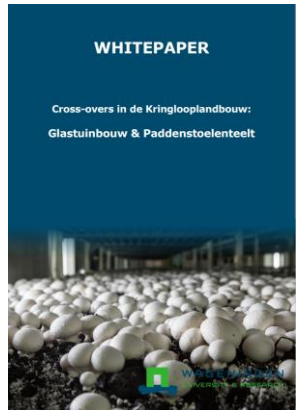
Concept

91 000 tonnes

Enough for ~400 ha tomatoes
(20% of NL tomatoes)

Enough for 25% of NL mushroom sector



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Looks interesting, but will it work?

Partners

Pilze Nagy

renewi

BioVerbeek
biologisch tuinbouwbedrijf

PLATFORM
TUINBOUWRESTSTROMEN

Cultilene
a Saint-Gobain company

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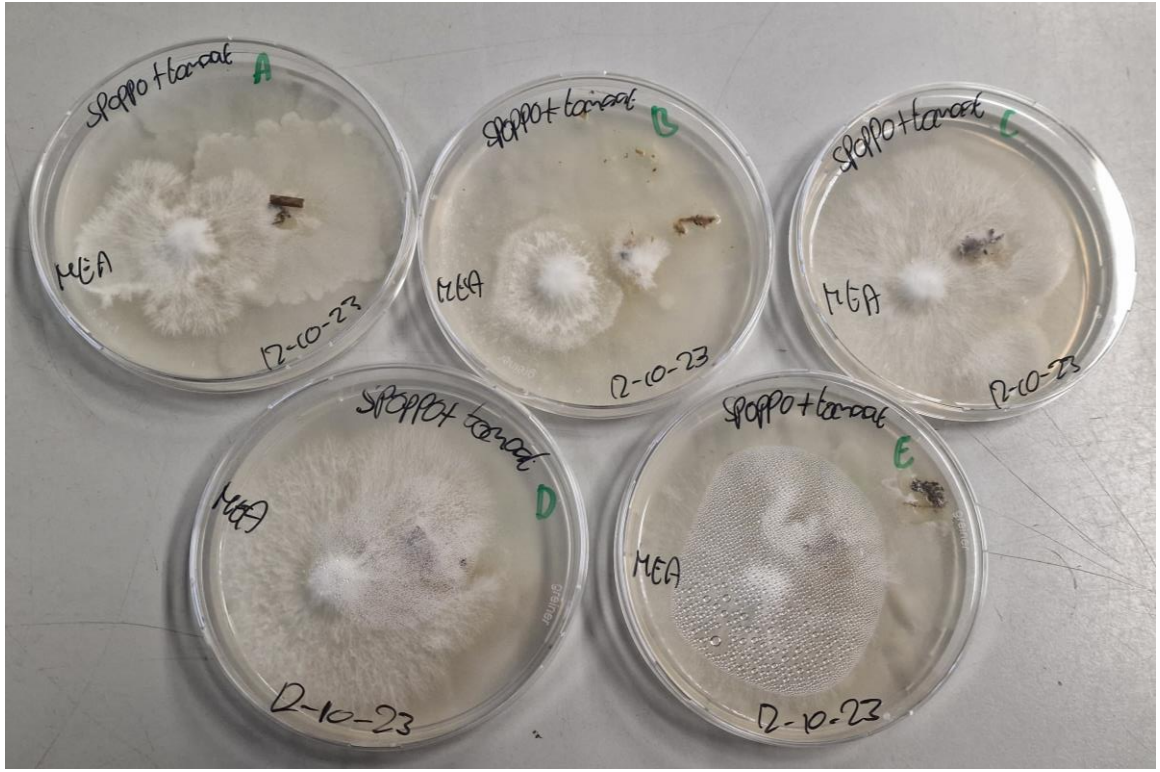
Research questions

WP1 Can oyster mushrooms grow on tomato stems, pepper stems, and used wood fibre substrate?

WP2 What is the production pattern of heat and CO_2 from composting?

WP3 Can spent mushroom substrate suppress pests and disease?

WP1 – Mushrooms on stems and wood fibre



WP1 – Mushrooms on stems and wood fibre

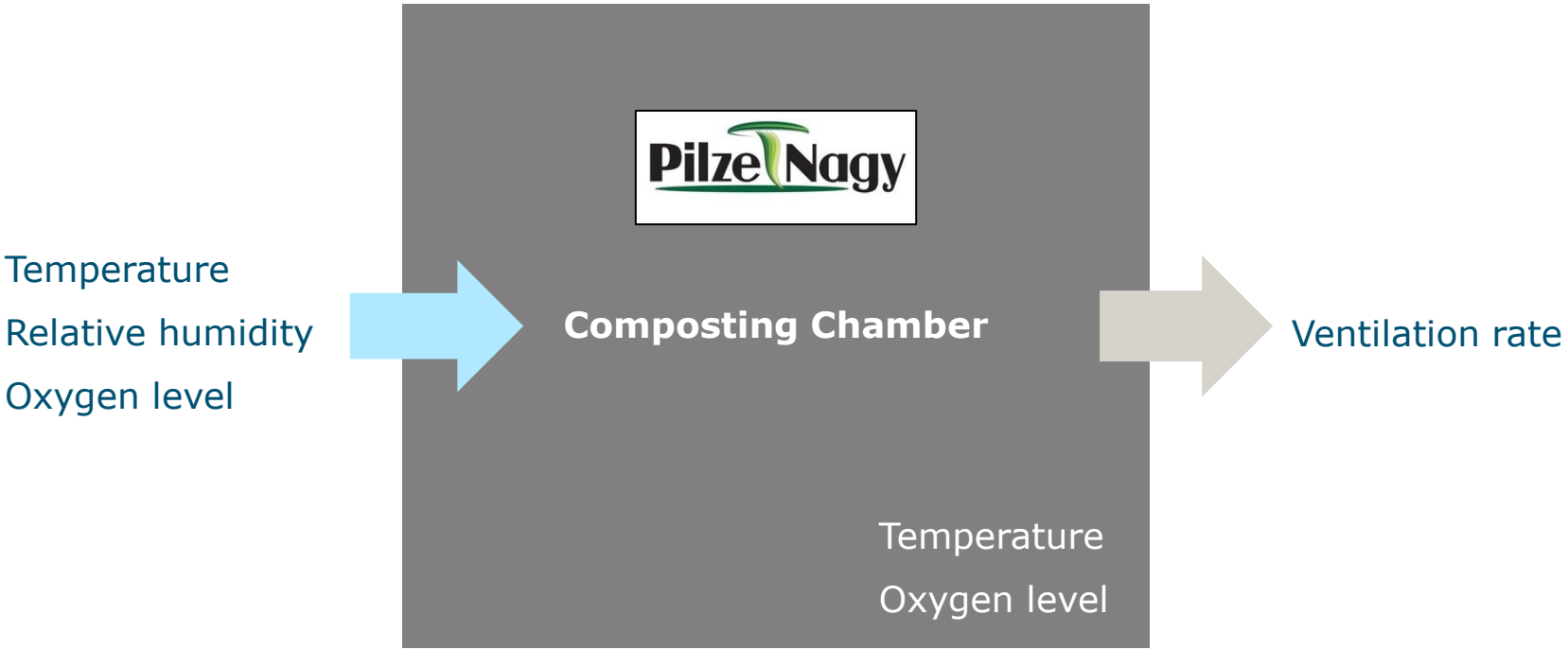
Raw material

Pasteurisation

Inocculation

Spawning

WP2 – CO_2 and heat production



Two approaches:

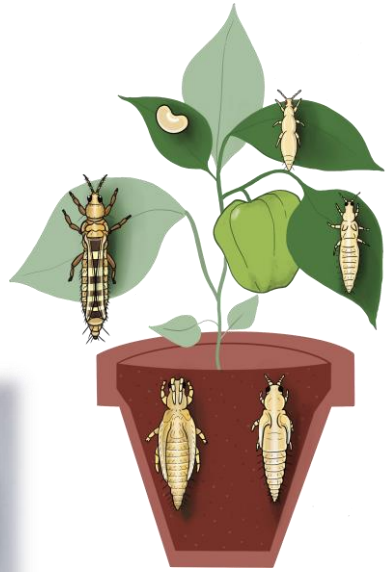
1. O_2 consumption
2. Chemical energy release

WP3 – Pest and disease suppression

Spent mushroom substrate rich in chitin

→ chitin can feed entomopathogenic fungi (EPF)

→ EPFs can control thrips pupae



Test survival of EPF spores

WP3 – Pest and disease suppression

Diseases: *Fusarium*, *Verticillium*, *Pythium*

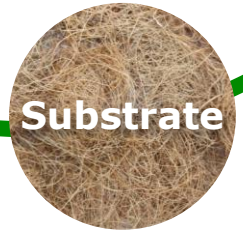
Bioassay cucumber seeds

- Germination rate
- qPCR in potting soil

Champost

CO_2

Biomass



Substrate

Thank you

Questions & discussion