






Building on Mycelium


Mycelium biocomposite material for construction and furniture











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Partners


























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Main goal:

GOAL

Beoordeel mycelium biocomposieten met de belangrijkste eigenschappen van schuim- en plaatmaterialen

What are the properties of mycelium composites for furniture or interior from local substrates, and are they suitable for furniture or insulation and interior panels?

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Wat hebben we gedaan – biology & mechanics



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Beste schuimmaterialen

Species	Substrate	Ranking
<i>G. resinaceum</i>	Rapeseed straw	1
<i>G. resinaceum</i>	Hemp shives	2
<i>L. betulina</i>	Hemp fibres	3
<i>T. hirsuta</i>	Rapeseed straw	4
<i>T. hirsuta</i>	Hemp fibres	5
<i>G. resinaceum</i>	Hemp fibres	6
<i>B. adusta</i>	Rapeseed straw	7
<i>L. betulina</i>	Rapeseed straw	8
<i>L. betulina</i>	Hemp shives	9
<i>G. resinaceum</i>	Flax	10

Observations

- *G. resinaceum* most recurrent species
- Rapeseed straw & hemp fibres preferred substrates

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Beste Plaatmaterialen

Criteria

- Growth Speed
- Mechanical properties
 - Flexural Strength
 - Flexural/Young's Modulus (Stiffness)

Species	Material	Ranking
<i>T. hirsuta</i>	Processed Cellulose	1
<i>T. hirsuta</i>	Straw	2
<i>L. betulina</i>	Processed Cellulose	3
<i>G. resinaceum</i>	Straw	4
<i>L. betulina</i>	Hemp Fibres	5
<i>T. hirsuta</i>	Hemp Fibres	6
<i>T. hirsuta</i>	Hemp Shives	7
<i>B. odusta</i>	Straw	8
<i>B. odusta</i>	Hemp shives	9
<i>B. odusta</i>	Hemp fibres	10

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Bouwen en verwerken

Figure 2. The three stages of "healing with fungi". When broken, mycelium is introduced to the broken pieces. In a couple of days, under the optimum conditions, mycelium *leptotheca* can extend and fill the voids of the empty spaces when kept alive.

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Verwerken: naden, oplappen en repareren

Designed Mending, Designed Patching, Designed Repair

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Verwerken: stapelen van materiaal

Healing with Fungi: Healing in living composites (design time)

Research Conclusion:
The cracks have healed after 5 days. By observation, the bigger cross area healed better compared to the straight cut.

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Healing with Fungi: Healing in living composites (use time)

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Great project! Resultierend in MYTHIC

→ Overall, results vary greatly between repetitions.

Conclusie: Myceliumbiocomposieten zijn nog niet klaar voor de markt, maar hebben zeker potentie

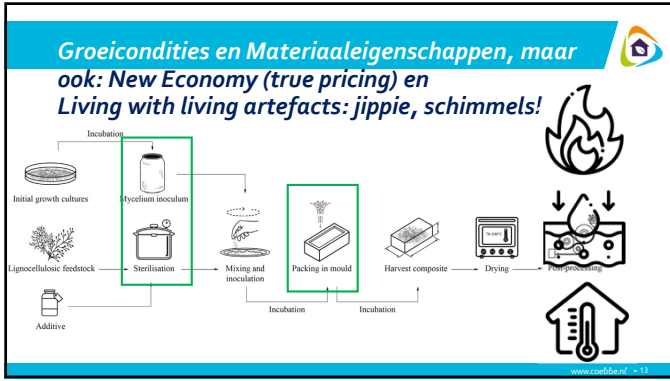
by increasing consistency of:

- Types of inocula
- Substrate decontamination

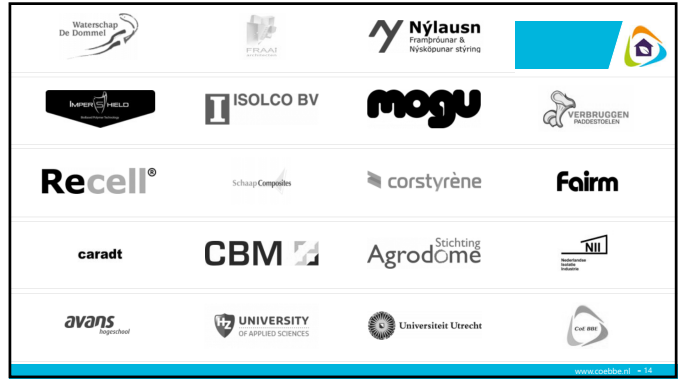
Mythic – Mytherials for Thermal Insulation in Construction

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