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COLLOQUIUM

The power of mycelium (v2)

Dr Barbara van Asch (Stellenbosch University)

DATE: Monday, 2 September 2024 | 16h00–17h00 SAST

VENUES:
- Neelsie Cinema, Stellenbosch University
- Online

--- A recording of the talk will be published on the NITheCS YouTube channel afterwards ---

ABSTRACT

Mycelium is a root-like structure formed by fungi to invade and process food sources. Mycelium consists of slender tubular hyphae organized in elusive networks as its role in decomposition of organic matter and associations with other organisms is often played in the dark layers of the natural world. Mycelium has unique properties that can be harnessed to create solutions to environmental, agricultural, industrial, and health-related challenges. Mycelium can act as a highly tunable agent for binding lignin-cellulose materials into a solid mass with measurable properties such as tensile and compressive strength, density, thermal conductivity and fire resistance. The scientific literature on this topic has exploded in the past five years, reflecting both the enormous interest that these new materials attract and the vast world of possibilities yet to explore. In this talk, I will review recent developments in biofabrication with mycelium that are at the source of a wide range of non-biodegradable products from packaging to construction materials. My selection of examples of mycelium-based objects is personal and unashamedly biased towards great design and a little quirkiness. Finally, students from my research group will present mycelium-based prototypes that they developed for the audience to examine.

BIOGRAPHY

Barbara van Asch holds a PhD in Genetics (University of Porto, Portugal), and is currently a senior lecturer at the Genetics Department of Stellenbosch University. Barbara has a strong interest in alternative food systems and products, and she has made significant contributions to the advancement of knowledge on the genetic diversity and phylogeographic structure of edible insects in southern Africa. This vast region is rich in edible species including termites, grasshoppers and mopane worms, all of which are disproportionally understudied relative to their economic, ecological and nutritional significance. Barbara has co-authored over 60 papers on various aspects of population genetics, phylogenetics and phylogeography of many animal species, with a focus on African biodiversity. Recently, she created the MUSHWORKS platform, an initiative dedicated to incentivising research on mycelium-based alternatives to non-biodegradable materials such as petrochemical plastics.

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