FACULTY OF
BIOSCIENCE ENGINEERING

The Chancellor of Ghent University has the honour of inviting you to attend the public defence of the doctoral dissertation of

ir. Norah Benmeridja

Title of the doctoral dissertation:

Microbial protein production from biogas: from lab to consumer

The public defence will take place on Friday June 27th 2025 at 17:00 in Auditorium Oehoe, Faculty of Bioscience Engineering, Ghent University, Coupure Links 653, 9000 Ghent.

There will be a contiguous reception, to which you are heartily invited. Please confirm your attendance before Monday June 16th to norah.benmeridja@ugent.be or +32 473 65 26 81.

Dissertation supervisors

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Abstract of the doctoral research

The global population is rising rapidly and could reach 10 billion by 2050, increasing the need for sustainable protein sources. As meat consumption grows, so does the strain on our planet's resources. In response, meat alternatives have emerged as a promising solution, with lower environmental impact and improved animal welfare. These include plant-based proteins like soybean, but also new "generations" of protein like insects or cultured meat. However, these alternatives face environmental and ethical concerns. Microbial protein—or protein from microbes like bacteria, fungi and microalgae—could be a promising and sustainable alternative, with a protein content similar to meat.
This PhD research explores microbial protein (i.e., protein from microbes) produced from biogas, a renewable gas made by anaerobic digestion (or "composting") food waste and manure. Turning waste into food supports the concept of circular agriculture and more sustainable food production systems. The PhD had 3 main research questions:
(1) Which microbes (bacteria) can produce microbial protein from biogas (lab work) ?
(2) How feasible is this process in "real-life" on industrial scale (techno-economics) ?
(3) Would consumers be willing to eat bacterial protein as meat alternative (survey) ?
By connecting these findings, this PhD aims to bridge the gap between research and market, bringing bacterial protein "from lab to consumer".

Brief Curriculum Vitae

Norah is a doctoral researcher within the Department of Agricultural Economics at Ghent University, Belgium. She holds a Bachelor's and Master's degree in Bio-science Engineering (Agricultural Sciences) from Ghent University (2015), with an Erasmus exchange to Wageningen University, the Netherlands. She also holds an MBA (Global Management) from EADA Business School, Spain (2016). Norah started her career as Global Management Trainee at AB InBev (2016 – 2018), before joining her family business, GIS International (part of EPSA Group), as Program Manager in sourcing in supply chain (2018 – 2020). During her spare time, Norah competed in dressage horse riding and taught fitness group classes (LesMills™). Today she enjoys recreative horse riding and early morning fitness.
In 2020, Norah started her PhD, focusing on microbial protein in the lab, combining her passion for food with sustainability & innovation. During her doctoral studies, she received two awards for her entrepreneurship: the "PhD Innovation Café" (2022) by UGent & VOKA, and "DO! 2022" By UGent (Durf Ondernemen). Her research was also awarded with 210.000 EUR in funding from UGent TechTransfer (2022) for exploring the commercialisation of her startup concept Carotein™ as a potential spinoff. After graduation, Norah will continue her entrepreneurial journey, bringing her academic expertise "from lab to consumer".