At the Faculty of Bioscience Engineering on Campus Kortrijk of Ghent University, the research group VEG-i-TEC has built up extensive expertise in food microbiology, plant (water) process technology, and fermentation technology.

VEG-i-TEC's mission is to provide pilot infrastructure and scientific expertise to the vegetable and potato processing industry and its suppliers, conducting research in an academic environment. By bridging the gap between laboratory-scale research and industrial practice, VEG-i-TEC aims to support and stimulate innovation in product and process development within this sector. VEG-i-TEC serves as a living lab for vegetable and potato processing companies seeking to innovate and optimize their production processes. It acts as a central hub for training and demonstrations, offering a distinctive and unique platform for the incubation of novel technologies and innovations. This collaborative space fosters the convergence of industry expertise and research advancements, driving the evolution of processing practices within the vegetable and potato sector.



© Ghent University / VEG-i-TEC - VEG-i-TEC is a living lab for the potato and vegetable processing industry

Translating research to industry

"We translate process innovations that companies and research groups develop at lab level to a scale representative of the vegetable and potato processing industry. We can simulate individual processes, or even complete production lines, at pilot level," explains principal investigator Prof. Dr. Imca Sampers. Since mid-2021, VEG-i-TEC is operating from its own research building, equipped with three pilot halls. One hall focuses on process and wastewater treatment for the (agrifood) industry, while the other two specialise in the processing of vegetables and potatoes, from just after harvest to the final packaged product. The pilot halls are supported by analytical and microbiological laboratory facilities. Additionally, the facility includes storage areas with various temperature settings and a fermentation room for solid-state and (fed-)batch fermenters and extraction technology.

European first

"At VEG-i-TEC, we can investigate the impact of different washing and processing techniques across the entire chain: on the products themselves as well as the loss and

waste streams. Furthermore, attention is paid to the byproducts generated during processing, and how added value can be generated of them in different applications."

"When focusing on evaluating new technologies, in addition to water management and cleaning and disinfection, we also work on energy management and hygienic design, always in perspective to the food quality and to chemical and microbiological safety for the consumer. We build on our extensive experience in the processing of vegetables and how this processing affects their quality," says Sampers. This establishment was made possible with the support of, among others, VLAIO (Flanders Innovation and Entrepreneurship Agency), ERDF (European Research and Development Fund) and the province of West Flanders.

Water, electricity and gases

The process and water treatment hall contains several zones for hire, including necessary utilities. "Not only for water, but also for electricity and gases, to facilitate a wide range of test setups. There are connections to various water sources: hard and softened tap water, shallow groundwater, rainwater, surface water and demineralised water. We also have water tanks for the storage of externally provided and treated process and wastewater, for interim storage of water for further treatment or to feed directly to the various food processing halls."

Analytical technology infrastructure

Furthermore, the VEG-i-TEC laboratory has a wide range of analytical techniques for the identification and quantification of extracted components. Identification and quantification of these (bioactive) components often require advanced analysis equipment. Thanks to the ERDF project 'Open testing and research facilities for top sectors in the West Flemish food industry,' we also have high-end equipment to perform this, such as liquid chromatography, ion chromatography, gas chromatography and high-resolution mass-spectrometry."



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