

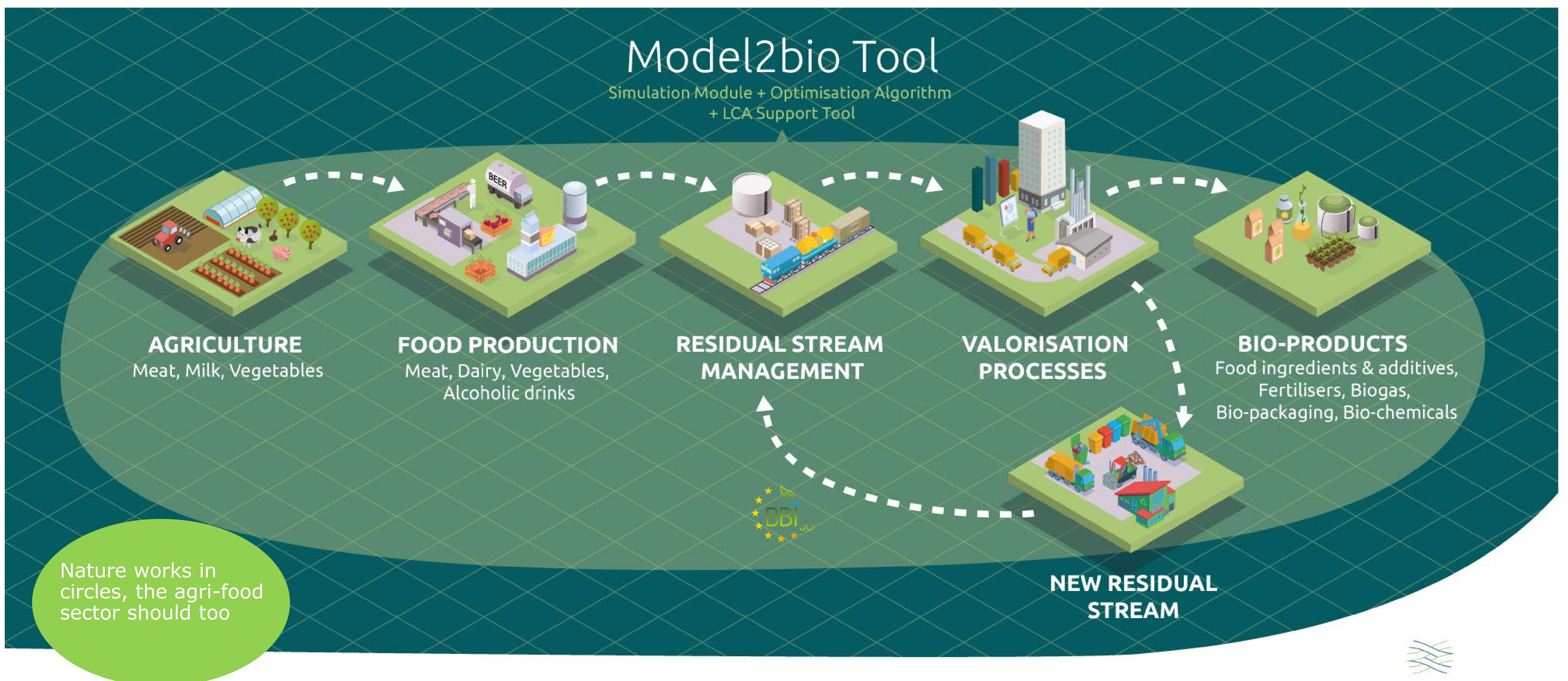


Valorisation of agri-food side streams

Janine Verbokkem, Miriam Budde, Ana M. López-Contreras and Lolke Sijtsma



A pioneering decision-support Tool, based on mathematical models, to predict agri-food residues and to identify the best routes for their valorization.

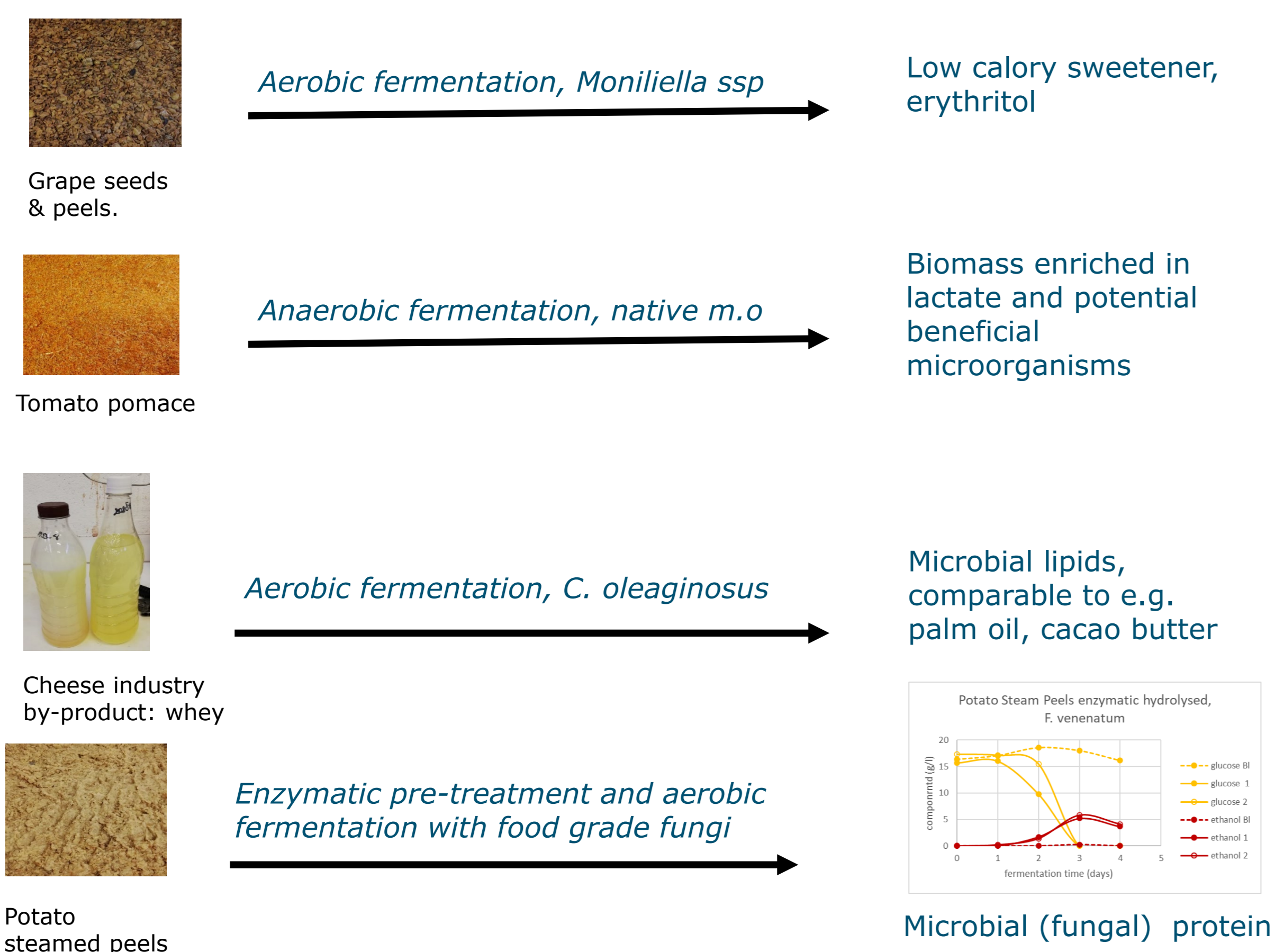


This project has received funding from the Bio Based Industries Joint Undertaking (JU) under grant agreement No 887191. The JU receives support from the European Union's Horizon 2020 research and innovation programme and the Bio Based Industries Consortium.

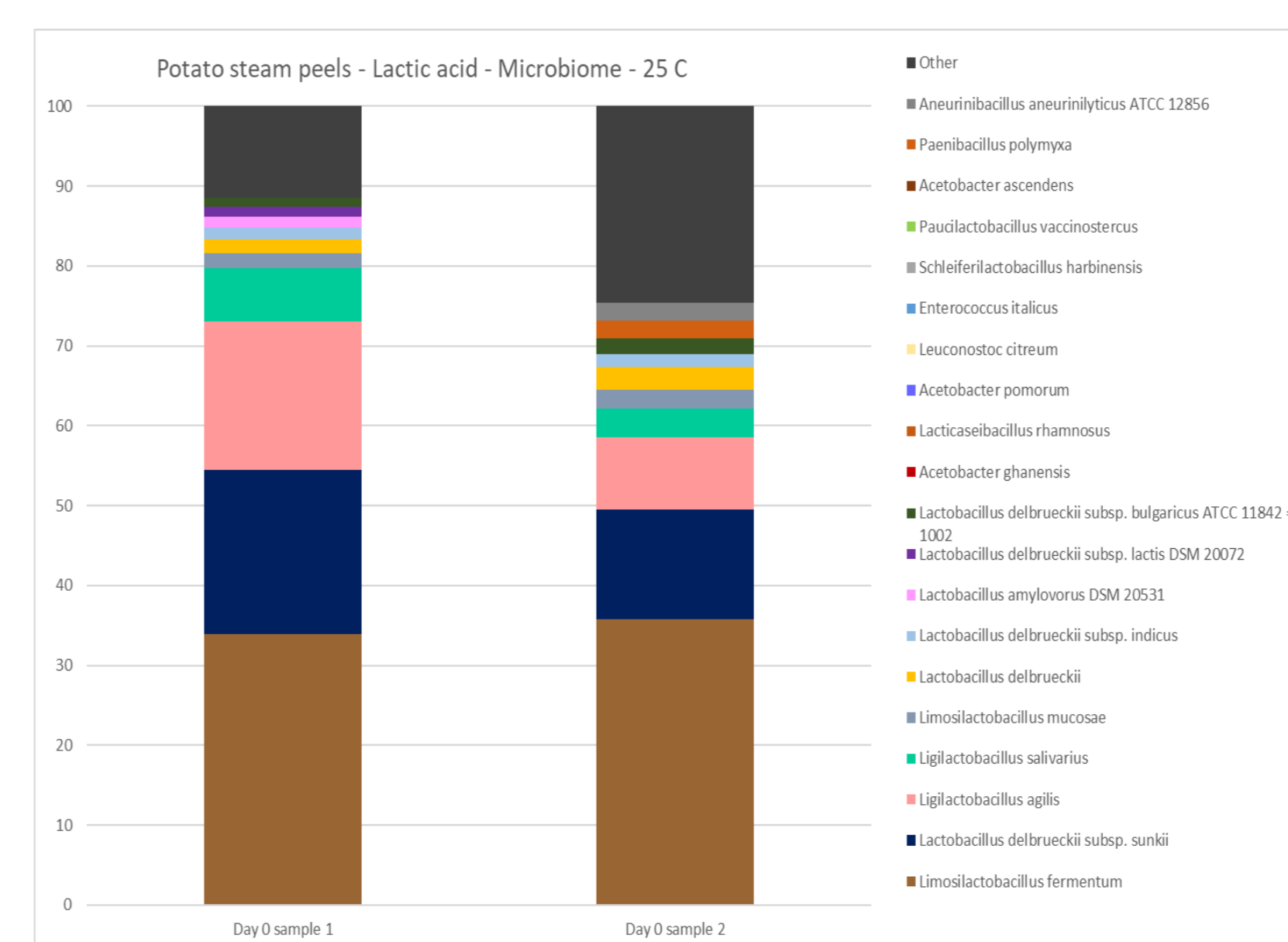


Microbial valorisation of agri-food side streams

Experimental data have been generated on microbiome composition of agri-food side streams and fermentative valorisation routes (Fig.1).



Processes based on substrate – products – microorganism combinations were developed. The composition of the microbiome in potato steamed peels (PSP) samples is shown in Figure 2.



In “fresh” PSP, most abundant bacterial species were lactic acid bacteria such as *L. fermentum*, *L. delbrueckii* and *L. agilis* (fig. 2). This correlates with the formation of lactic and acetic acids during storage under low oxygen conditions (not shown).

Insights

- Grape seeds & peels are very rich in sugars and can act as a cheap substrate in several fermentation processes.
- The yeast *C. oleaginosus* grows well on whey and simultaneously accumulates lipids
- Potato steamed peels (after hydrolysis and sterilization) is a good substrate for *Fusarium venenatum*. In unprocessed PSP native lactic acid bacteria are present.
- Insight in the microbiome can help steering fermentations

