



Fruit peels waste valorization

Did you know that food waste valorisation is currently at the centre of debates on the development of various “circular bioeconomy“ models? Fruit waste, in particular, represents an incredible sustainable and renewable reserve for the extraction and/or production of various products, which include well the production of biopolymers for food packaging. What if there was a completely environmentally friendly technological process to fully exploit this waste material?

BACKGROUND

According to the Statistical Database of the Food and Agriculture Organization of the United Nations (FAOSTAT), world fruit production is estimated to be 64 million tons. A high percentage of this production (approximately 70%) is used to manufacture products such as juice or marmalade. The end-life of the peel waste is often landfilled or incinerated. The last process represents a very energy consuming process due to the high-water content of the disposed waste material. Under the current influence of the circular economy concept, food waste could be processed into complete bio-exploitation for production of valuable chemicals, which could find application in a vast heterogenous market.

TECHNOLOGY

acib has a strong acknowledgment on bio-recycling of various waste streams, i.e., using enzymes, microorganisms and/or their synergistic combination to produce commercially valuable compounds. Food waste represents a resourceful mine of high-value molecules which can be used as a platform for different biotechnological approaches. acib is already working in collaboration with University of Natural Resources and Life Sciences (BOKU) on enzymatic recycling of orange peels for extraction of bioactive compounds and production of chemicals for bio-based, bio-degradable polymer synthesis. We have thereby placed a first step for a full environmentally friendly valorization of fruit peels waste.

OFFER

acib is looking for companies and/or investors to further develop and upscale the upcycling of fruit peel wastes. IP developed in such project will be fully transferred to you as our investor/industrial partner

acib-EXPERTS:

Prof. Dr. Georg Gübitz
Dr. Felice Quartinello

DEVELOPMENT STATUS:

TRL 4 (reaction already performed in a 5 L reactor scale)

PARTNER(S):

Dr. Markus Neureiter (BOKU)

KEYWORDS:

Environment, Recycling, circular economy, food waste, biotechnological process, valuable compounds



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