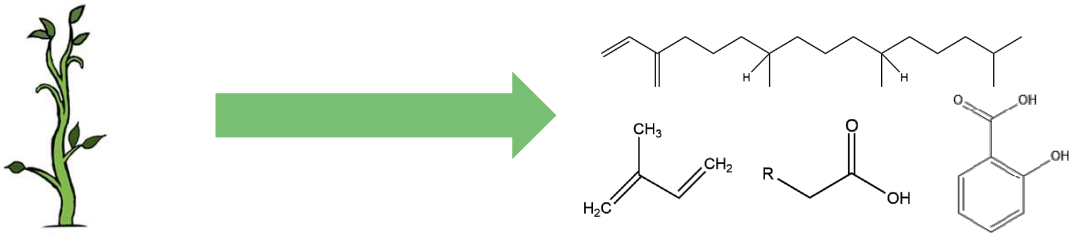
Supercritical CO_2 extraction of tomato plant residues

Topic suitable for ***Master's Thesis, Biorefinery project***



Biomass waste streams are often left on fields for rotting or used for thermal energy production. But before we degrade or thermally convert the biomass waste to compost or energy, we can use the high potential of these wastes for production of high valuable molecules.

Tomato is one of the most consumed vegetable, mainly produced in greenhouses, all over the world. In 2018 about 182 million tonnes of fresh tomatoes were produced worldwide. Vegetative tomato residues (up to 230 mio tonnes, FAO2018) are an environmental concern as they will be infected by a large number of critical plant pathogens at the end of the life cycle and have to be treated. Vegetative tomato residues contain anti-oxidative, -fungal, -bacterial or inflammatory agents that can be used in many industries.

Tomato residues are rich in a lot of high valuable molecules, like terpenoids, phenolic compounds and glycoalkaloids. The bioactive molecules can be used as antibacterial, antifungal and antiviral agents, which can play a major role for plant health and as natural non-toxic agent against plant pathogens.

The aim of the work is the isolation of bioactive molecules from tomato waste biomass with supercritical CO2 extraction.

Scope:

- Literature research
- Performing of experiments
- Analysis of samples
- Interpretation of data
- Writing scientific reports

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