BioBoost
Accelerating biobased horticulture

Valorization of residuals of rose and dahlia



Crop	Rose *Rosa L.* Dahlia *Dahlia Cav.*
Croppart	Roots / Tubers Stem Leaf Bud Flower Fruit
Application area	Pharma Fine chemicals Food & feed Materials
Status	Research stage
Public availability	Semi-public
Relevant plant compounds	Cellolose Sugars Proteins Secondary metabolites

Description

Rotterdam University of Applied Sciences (RUAS) investigates how green waste flows from regional agri-/horticulture can be valorized in a most complete way according to the cascade principle of the value pyramid for biomass compounds.
This biomass research will be done by RUAS students from different technical course like Biology and Medical Laboratory research, Chemistry, Chemical Technology, Industrial Product Design and students from Willem de Kooning Academy. Besides student from Rotterdam Business School and Logistic Management will investigate the economic viability and logistic organization. Students will be supervised by research lecturers at RUAS. In this multi-interdisciplinary research project there is close collaboration with lectors of the Research Centre for Sustainable Port Cities and Research Centre for Business Innovation from RUAS.

Goal is to come up with a proposal to valorize green waste flows from regional agri-/horticulture for green compounds and/or materials including a step-by-step methodological approach and thereby contribute to a more sustainable agri/horticulture sector.
In September 2018 an exploratory research had started on unsold auction flowers at Royal Flora Holland in collaboration with Milgro. Based on this investigation RUAS focusses on valorization of (edible) flowers and fruit supplied by external partners (breeding- and/or growing companies).

RUAS has a Biobased & Circular Hub located in BlueCity Rotterdam and collaborates with BlueCity Lab.

This multi-/interdisciplinary research is funded by SIA/NWO (HBOPD.2018.02.040).

Pros and cons

- Step-by-step methodologic approach
- Development of viable and scalable business cases
- Analysis of logistic organisation

Used conversion methods

Mechanical-Physical processes

- Milling
- Separation
- Fiber separation
- Upgrading
- Fractionation
- Extraction

Biochemical processes

- Enzymatic conversion
- Transesterification

Chemical processes

- Hydrolysis
- Oxidation
- Pulping

Resources

https://www.nwo.nl/onderzoek-en-resultaten/onderzoeksprojecten/i/01/33301.html

Initiative website