General information	
PPP-number	AF-18003
Title	from Sugar beet 'Waste' to Environmentally Enhanced Detergents (SWEED)
Theme	Circular
Implementing institute	WFBR
Project leader research (name + e-mail address)	Dr. H. W. C. Raaijmakers (harry.raaijmakers@cosun.com)
Coordinator (on behalf of private partners)	F. van der Klis (frits.vanderklis@wur.nl)
Project-website address	https://research.wur.nl/en/projects/af-18003-from-sugar-beet-waste-to-environmentally-enhanced-deterg https://www.wur.nl/nl/Onderzoek-Resultaten/Onderzoeksprojecten-LNV/Expertisegebieden/kennisonline/From-Sugar-beet-Waste-to-Environmentally-Enhanced-Detergents.htm
Start date	2019
Final date	2021

Approval by the coordinator of the consortium The annual report must be discussed with the coordinator of the consortium. The "TKI's" appreciate additional comments concerning the annual report.	
Assessment of the report by the coordinator on behalf of the consortium:	■ Approved □ Not approved
Additional comments concerning the annual report:	-

Summary of the project	
Problem definition	Royal Cosun is developing an integrated sugar beet pulp (SBP) biorefinery to valorise the refined sugar beet components by producing value added biobased materials and chemicals. This adds considerably to the sugar beet value chain, making it more economically viable on long term. Goal of this project is to widen the potential application scope of sugar beet pulp components, by generating generic knowledge and technology in order to make beet pectin based products suitable to be used in home and personal care as well as professional cleaning products. These products are often already partially biobased, so there is a clear proof that biobased products can be suitable to be used in these applications. The industrial end users in this consortium (Unilever and Diversey) are highly motivated to widen their scope of biobased products and to increase the content of biobased products in their formulations.
Project goals	In this project we will develop new components for household and professional detergents, as well as personal care applications based on the unique structures and properties of the sugar beet components. The main focus of the project will be on the development of functional additives (surfactants, chelating agents) based on beet

	pectin components and derivatives thereof. Secondly explorative research will be conducted for the development of new functional additives for household and professional cleaning.

Results	
Planned results 2019	Milestones: MS1 Installation of Project Steering Committee MS2 First set of surfactants prepared and characterised MS3 First set of sequestering agents prepared and characterised Deliverables: D1-3 Supplying 3 types of sugar beet components to consortium
Achieved results 2019	The consortium was successfully built (MS1), and all partners collaborated in prioritizing the promising candidates for sequestering (MS3). Modelling was used to further funnel the pre-selection. Synthesis methods to obtain the desired sequestering agents were explored, and the most promising routes were identified. The first sets of compounds were successfully prepared, and are ready for evaluation by the partners. For the surfactants (MS2), a selection of the most promising compounds has been made as well. Their synthesis was however given a slightly lower priority in year one, but this will increase in 2020. Deliverables 1-3; Two of the SBP components were supplied to the consortium and used for the synthesis of the first derivatives. Methods are also in place for the production of the third component, needed for the milestones in 2020.
Planned results 2020	The following milestones are planned for 2020: MS4 Results on "type 1" sequestering agents testing MS5 Results on "type 1" surfactants testing MS6 Preparation and characterization of ' type 2" surfactants MS7 Preparation and characterization of ' type 2" sequestering agents MS8 Go/no-go for year 3 The main focus will be on identifying the most promising candidates (both surfactants and sequestration agents).

Deliverables/products in 2019 (provide the titles and /or a brief description of the products/deliverables or a link to a website.
Scientific articles: -
External reports: -
Articles in professional journals/magazines: -
(Poster) presentations at workshops, seminars, or symposia. -
TV/ radio / social media / newspaper: -
Remaining deliverables (techniques, devices, methods, etc.): -

https://topsectoragrifood.nl/project/af-18003-from-sugat-beet-waste-to-environmentally-enhanced-detergents/

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