



Algemene gegevens	
Nummer	AF-EU-13003
Titel	SPLASH: Sustainable Polymers from Algae Sugars and Hydrocarbons
Topsector (A&F of T&U)	A&F
Projectleider (onderzoek)	Dr. Lolke Sijtsma
Contactpersoon overheid	Cor Wever
Status (lopend of afgerond)	Lopend
Type onderzoek (F, T of V)	T
Werkelijke startdatum	1 September 2012
Werkelijke einddatum	28 Februari 2017
Korte omschrijving inhoud	DLO is responsible for projectmanagement, sequencing of the algae <i>Botryococcus braunii</i> and, in close cooperation with projectpartners, strain improvement, optimization of algal cultivation and product formation, separation and conversion technologies and development of a pilot facility.

Highlights
<p>Around the world steps are being taken to move from today's fossil based economy to a more sustainable economy based on biomass. The 4.5-year European project SPLASH will develop a new biobased industrial platform using microalgae as a renewable raw material for the sustainable production and recovery of hydrocarbons and (exo)polysaccharides from the species <i>Botryococcus braunii</i> and further conversion to renewable polymers.</p> <p>Goal The aim of SPLASH is to deliver knowledge, tools and technologies needed for the establishment of a new industry sector: Industrial Biotechnology with algae for the manufacture of polyesters and polyolefins.</p> <p>The project encompasses:</p> <ol style="list-style-type: none"> 1. Development of <i>Botryococcus</i> as an industrial production platform 2. Systems biology analysis 3. Development of procedures for production, in situ extraction and isolation of sugar polymers and hydrocarbons 4. Product development <p>In 2015 we studied the production of sugar polymers and hydrocarbons by <i>B. braunii</i> in well controlled indoor production systems and established membrane based technologies for separation of biomass and sugar polymer. Extraction technologies for hydrocarbons were tested. Sugar composition was determined and tools to convert sugars into chemical building blocks for plastics were developed. Genome sequencing is ongoing. The work was presented in several (scientific) meetings</p>

Opgeleverde producten

Link naar Kennisonline met producten:

<http://www.wageningenur.nl/nl/project/SPLASH-duurzame-polymeren-uit-algen.htm>

Bicas, J.L., Kleinegris, D.M.M., Barbosa, M.J. (2015)

Use of methylene blue uptake for assessing cell viability of microalgae. *Algal Research* 8 (2015) 174–180 (Publication)

Broek, L.A.M. van den, J.M. van, Klis, F. van der, Stoutjesdijk, J.H., Boeriu, C., Blaauw, R. (2015). Exopolysaccharides from *Botryococcus braunii* and the production of bioplastics. In: *Proceedings 4th EPNOE International Polysaccharide Conference: Polysaccharides and polysaccharide-based advanced materials: from science to industry.* p. 136 - 136.

Broek, L.A.M. van den, Klis, F. van der, Stoutjesdijk, J.H., Boeriu, C.G., Blaauw, R. (2015). Exopolysaccharides from *Botryococcus braunii* and the production of bioplastics. In: *Exopolysaccharides from Botryococcus braunii and the production of bioplastics.* - Warsaw, Poland, 19-22 October 2015.

Kleinegris, D.M.M (2015) *AlgaeParc's EU projects, SPLASH, MIRACLES, FUEL4Me and InteSusal.* 8th October 2015, Wageningen, The Netherlands (presentation in the framework of Greentech week)

Sijtsma, L^{1a}, A.G. Smith², D.M. Kleinegris¹, E. de Jong³, M. Fenton⁴, P. Willems⁵, D. Vogt⁶, M.J. Barbosa¹ (2015). *Botryococcus braunii* as production platform for sugars and hydrocarbons to be used as building blocks for polymers: Progress of the EU FP7 project SPLASH. 2nd EABA and EC Algae contractors conference and the 9th international algae congress. Lisbon, 1-3 December 2015

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Sijtsma, L., Barbosa, M.J. (2015) *SPLASH: Sustainable Polymers from Algae Sugars and Hydrocarbons Conference: Making more of Bio-economy results*, 6- 7 October 2015, Brussels, Belgium

Sijtsma, L. (2015) *Microbes –The New Bioplastic Factories*

http://commnet.eu/05_News/Microbes-The-New-Bioplastic-Factories.kl

Vigani, M., Parisi, C., Rodriguez-Cerezo, E., Barbosa, M.J., Sijtsma, L., Ploeg, M., Enzing, C. (2015) *Food and feed products from micro-algae: Market opportunities and challenges for the EU.* *Trends in Food Science and Technology* 42 (2015)1. - ISSN 0924-2244 - p. 81 - 92.