



PPP Project Annual Report 2018
 The PPP-projects that have been established under the direction of the top sectors must submit an annual report on their technical and financial progress. This format is to be used for reporting the technical progress. A separate format ('PPP final report') is available for PPP-projects that have been completed in 2018.
The annual reports will be published in full on the websites of the TKIs/top sector, excluding the blocks 'Approval coordinator/consortium' and 'Planning and progress' . Please ensure that no confidential matters are left in the remaining blocks.
 The PPP Project Annual Reports must be submitted by 15 February 2019 to Hans van der Kolk

General information	
PPP number	AF16107 (TKI toeslag project)
Title AF16107	<i>Novel starch based adhesives</i>
Theme	Circulair
Executive knowledge institution(s)	WFBR
Research project leader (name + e-mail address)	Maurice Essers Maurice.essers@wur.nl
Coordinator (on behalf of private parties)	Agrana
Government contact person	Jan van Esch
Total project size (k€)	380
Address project website	https://topsectoragrifood.nl/project/novel-starch-based-adhesives/
Start date	01-02-2017
End date	31-03-2019

Approval coordinator/consortium	
The annual report should be discussed with the coordinator/the consortium. The TKIs appreciate being informed of possible feedback on the annual report.	
The coordinator has assessed the annual report on behalf of the consortium:	<input checked="" type="checkbox"/> approved <input type="checkbox"/> rejected
Possible feedback on the annual report:	

Short content description/aim PPS
 What is going on and how is this project involved?
 What will be delivered by the project and what is the effect of this?

The purpose of this project is to develop new generation of starch based adhesives. The currently used starch derivatives (starch dextrin's; hydrolysed starches) still have a lack in performance in comparison to their synthetic counter parts such as polyvinyl alcohol. A renewable and cheaper alternative for PVOH would be very desirable from a commercial and environmental point of view. Hence, the performance of traditional dextrin's needs to be improved. It is the hypothesis of this project that additional crosslinking of the starch dextrins improves their functionality. The degree of hydrolysis and crosslinking will be varied in accordance with the emerging functional properties. As hydrolysis takes place under acidic conditions, we have selected a cross linker that performs under acidic conditions. Most suitable process equipment to investigate this is reactive extrusion, because it has the ability to combine pre-gelatinisation, hydrolysis and crosslinking simultaneously. The emerging products will be tested on rheological and functional properties. This will be done in conjunction with the industrial partners.

Planning and progress (if there are changes to the project plan, please explain)	
Is the PPP going according to plan?	The end date of the PPP has been postponed till the end of march 2019
Have there been changes in the consortium/project partners?	no
Is there a delay and/or deferred delivery date?	Yes, due to the installation of a new extruder, the project needed to be postponed
Are there any substantive bottlenecks?	
Are there any deviations from the projected budget?	no

Results in 2018/ so far
Give a short description of the high-lights and (most important) project deliverable in 2018 / so far and their target group
<ul style="list-style-type: none"> - We have found a catalyst that provides a better control of the extrusion process and its corresponding reaction - Scaling up on pilot level succeeded - First application trials were carried out. => samples showed viscosity poor viscosity-stability during storage - New extrusion trials carried out with different sources of starch - Viscosity-stability of the new samples has been improved. - New extrusion and application trials have been planned.

Number of delivered products in 2018 / so far (in an appendix, please provide the titles and/or description of the products or a link to the products on public websites)			
Academic articles	Reports	Articles in journals	Introductions/workshops

Appendix: Names of the products or a link to the products on a public website

<https://topsectoragrifood.nl/project/novel-starch-based-adhesives/>

<https://topsectoragrifood.nl/wp-content/uploads/2017/06/AF-16107-Novel-Starch-Based-Adhesives.pdf>