



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	AF17010
Title	Biobased biodegradable nets for horti- and agriculture
Theme	Circular
Executive knowledge institution(s)	Wageningen Food & Biobased Research
Research project leader (name + e-mail address)	Wouter Post (wouter1.post@wur.nl)
Coordinator (on behalf of private parties)	Hendriks graszoden (info@hendriks-graszoden.nl)
Government contact person	Jan van Esch
Total project size (k€)	328
Address project website	https://topsectoragrifood.nl/project/af-17010-bio-based-biodegradable-nets-for-horti-and-agriculture/
Start date	1 oktober 2018
End date	30 september 2020

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?

Agricultural and horticultural netting is widely used to improve crop quality, increase yield and reduce labour during harvesting. A major drawback of the plastic netting is their disposal: currently used non-biodegradable plastics, like (oxo-degradable) polyethylene and polypropylene, can accumulate in soil as visible and invisible plastic waste. Recycling of the plastic netting is labour intensive and difficult because nets are highly contaminated with soil and organic materials.

The objective of this project is to develop bio-based, in soil biodegradable netting for the production of grass turf. The netting should be compatible with current production methods (product demands over the entire crop-growth until harvesting), and should biodegrade in soil.

Bio-based and biodegradable nets are known and commercially available for food packaging. These commercially available nets do however not satisfy performance requirements in horti- and agriculture. The netting for grass turf requires better mechanical properties and a different

biodegradation profile in soil. During turf growth (1.5-2 years) netting should retain its mechanical properties in soil. After harvesting and installation netting should degrade in soil. Opposite to triggered degradation the aim is to protect the netting against biodegradation for about 2 years and then allow the natural biodegradation process.

In this project, the main bio-based, biodegradable plastic that will be used is PBS. PBS is considered the most suitable material with respect to processing, mechanical and end-of-life properties. PBS is commercially produced from biomass. The challenge is to meet the requirements during production of nets, the functional life of nets and the required behaviour during end of life.

Planning and progress (if there are changes to the project plan, please explain)

Is the PPP going according to plan?	The signing of the contracts took slightly longer than anticipated, so the official start date of the project has changed to 1 st of October 2018.
Have there been changes in the consortium/project partners?	No
Is there a delay and/or deferred delivery date?	Yes, due to a later start, the delivery date will be September 2020
Are there any substantive bottlenecks?	No
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

In October 2018 the project has started, so far the following actions were taken:

- A kick-off meeting with all partners was held on the 11th of October 2018 in Wageningen.
- A first polymer compounding run with PBS and PBSA as base material was performed at WFBR.
- The developed compounds were extruded into sheets with various thicknesses at WFBR.
- The developed sheets were used in a detailed soil degradation test in a controlled environment. This test is currently running at WFBR. Soil degradation is determined by determining mechanical properties, molecular weight, weight loss and visual inspection. The first results of these test are expected in spring 2019.
- Additionally, the developed sheets were buried in soil at Hendriks Graszoden in order to have a reference test in the intended application environment. These sheets will be excavated at set times to compare the lab tests with those in the field.
- A selection of the developed compounds were extruded into trial nets to verify the suitability of the polymers with net extrusion at Tenax. This test showed that the material specifications very well suited for the net production process.
- Based on the initial results a next compounding step is scheduled for spring 2019, followed by new degradation testing and net fabrication at Tenax.

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
n.a.	n.a.	n.a.	n.a.

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

Link naar KOL:

<https://www.wur.nl/nl/Onderzoek-Resultaten/Topsectoren/show/AF-17010-Biobased-biodegradable-nets-for-horti-and-agriculture.htm>