



**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 to the TKI's before March 1<sup>st</sup> 2019. For Wageningen Research this will be coordinated via a central point.

General information	
PPP number	TU17009 (KV 1605-044)
Title	New Tools for Doubled-Haploid Induction via Gynogenesis
Theme	Better Plants for New Demands/ More and Better with Less
Executive knowledge institution(s)	Wageningen Plant Research
Research project leader (name + e-mail address)	Kim Boutilier (kim.boutilier@wur.nl)
Coordinator (on behalf of private parties)	Cilia Lelivelt
Government contact person	Annet Zweep
Total project size (k€)	992
Address projectwebsite	
Start date	01-03-2018
End date	28-2-2023

Approval coordinator/consortium	
<i>The annual report should be discussed with the coordinator/the consortium. The TKIs appreciate being informed of possible feedback on the annual report.</i>	
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:	

Planning and progress (if there are changes to the project plan, please explain)	
Is the PPP going according to plan?	yes
Have there been changes in the consortium/project partners?	no
Is there a delay and/or deferred delivery date?	no
Are there any substantive bottlenecks? Provide a brief description	no
Are there any deviations from the projected budget?	no

**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 production of true-breeding lines through doubled-haploid production is an important tool in crop breeding, but one that is limited by the inherent recalcitrance of different species and genotypes for this process. The project will use a three-pronged approach to understand and induce doubled-haploid production from female reproductive organs (gynogenesis) in tomato:

1. We will examine the involvement of major plant hormones in driving the transition from the egg cell to the fertilized zygote.
2. Chemical screens will be performed to identify small molecule enhancers of gynogenesis
3. We will ectopically express embryo-identity transcription factors in the egg cell to induce gynogenesis.

The project aims to use knowledge from sexual embryo initiation and the processes affected by gynogenesis-inducing compounds as a framework to identify global pathways that underlie gynogenesis in plants. This knowledge, together with the specific compounds and proteins identified in the screens, will provide a solid starting point to develop efficient germplasm-independent protocols for DH production via gynogenesis in tomato.

**Results in 2018/ so far**

Give a short description of the high-lights and project deliverable in 2018 / so far

- Development and transformation of reporter lines for female reproductive cells and hormone pathways is in progress
- Development and transformation of constructs expressing embryo-identity transcription factors in arabidopsis and tomato is in progress.

**Number of delivered products in 2018** *(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
0	0	0	0
Titles/ description of the most important products in 2018 (5 at max) and their target group			

**Appendix: Names of the products or a link to the products on a public website including the link to the project summary on Kennisonline**