PPP Annual Report 2019
PPP projects which are under supervision of the "Topsectoren" must report annually on the scientific content and financial progress. This form is used to report the progress of the content of the project. PPP projects that finish in 2019 should make use of a different form: "PPP-final report."
The annual report will be published on the TKI / topsector website. Therefore, please ensure that there is no confidential information in the annual report.
The PPP-annual report must be sent, at the latest, by the 1st of March 2020 to the "TKI's": info@tkitu.nl or info@tki-agrifood.nl. For Wageningen Research, the report has to be sent to the "Topsector secretary" of your respective institute.

General information	
PPP-number	TU 18080
Title	Resistance mechanisms against thrips in wild relatives of onion
Theme	Durable Plant Production
Implementing institute	Wageningen UR
Project leader research (name + e-mail address)	Olga Scholten (olga.scholten@wur.nl)
Coordinator (on behalf of private partners)	Anneke Kroes (anneke.kroes@bejo.nl) for Henk Huits
Project-website address	https://www.wur.nl/nl/Onderzoek-Resultaten/Onderzoeksprojecten-LNV/Expertisegebieden/kennisonline/Resistance-mechanisms-against-thrips-in-wild-relatives-of-onion.htm
Start date	12-3-2019
Final date	31-12-2023

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:	x Approved ☐ Not approved
Additional comments concerning the annual report:	

Summary of the project	
Problem definition	Onion is an important horticultural crop that is cultivated all over the world. Onion thrips is a well-known onion pest that occurs worldwide. Thrips cause both direct and indirect damage to crops by sucking the cell content of leaves. Damage is visible in the form of silver-gray spots on the leaves and results in a reduction of photosynthesis and yield. Thrips can also transmit plant pathogens. Thrips have a short generation time of two to three weeks, depending on the temperature, meaning there are more generations per year. In dry and warm weather, thrips can quickly build up a large population. Pesticides are being used to control thrips but are not always very effective. More importantly, pesticides do not fit in a sustainable agricultural production. In addition, the application of pesticides has resulted in development of thrips with resistance to these pesticides. An alternative to pesticide use is host plant resistance. However, for onion, there are no cultivars with high levels of thrips resistance and results obtained so far have shown that thrips resistance

	may be hard to find in cultivated materials. That means that other solutions need to be explored.
Project goals	The aim of the project is to contribute to the development of a more sustainable onion production by breeding for thrips resistance in onion. To reach the goal the project will focus on the identification of novel sources of thrips resistance among crossable wild relatives of onion, and when identified, characterize this resistance with respect to its genetics and mechanisms. For these studies, both interspecific F1 hybrids of crosses between onion and crossable related species and intraspecific crosses between resistant and susceptible plant of the same species will be produced. Finally, materials will be released to breeding companies for use in their onion breeding programmes.

Results	
Planned results 2019	Kick-off meeting and 2nd project meeting Collecting of plant materials for testing in field and greenhouse Collection of thrips Making pair crosses
Achieved results 2019	For this project, a PhD student was appointed. Two meetings were held with all partners, the Kick-off meeting in March and a second meeting in November. In addition, partners have regular e-mail contact to discuss details of projects or to share opinions. In addtion, a field trial of one of the companies was visited. A list of Allium species present in the world was prepared by WUR and shared with the companies. A selection of these species were obtained by the companies to screen for resistance to thrips. Depending on the season in a specific country, tests were carried out in 2019 or will be carried out in 2020. WUR screened plant materials in the greenhouse under no-choice conditions and discovered a number of resistant accessions. Thrips were collected and sent to WUR for analysis. A number of pair crosses were made.
Planned results 2020	Project meetings Testing of species in field and greenhouse Collection of thrips Making pair crosses

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.):