



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-18100
Title	Whitefly resistant Poinsettia to reduce insecticide use
Theme	Sustainable Plant-based production
Implementing institute	Wageningen UR Plant Breeding
Project leader research (name + e-mail address)	Ben Vosman (ben.vosman@wur.nl)
Coordinator (on behalf of private partners)	Silvan Kamstra (silvan.kamstra@syngenta.com)
Project-website address	https://www.wur.nl/nl/Onderzoek-Resultaten/Onderzoeksprojecten-LNV/Expertisegebieden/kennisonline/Whitefly-resistant-Poinsettia-to-reduce-insecticide-use.htm
Start date	01-02-2019
Final date	31-01-2023

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:	<input checked="" type="checkbox"/> Approved <input type="checkbox"/> Not approved
Additional comments concerning the annual report:	

Summary of the project

Problem definition	The poinsettia, <i>Euphorbia pulcherrima</i> , also known as the Christmas flower is the most important pot plant worldwide. It has one big problem; it is susceptible to whiteflies. Growers have to use insecticides to control the whitefly population, which is undesirable from an environmental point of view. In addition, as the number of insecticides is rapidly decreasing the need for an alternative is urgent. To be able to deal with these challenges alternative ways to deal with the whitefly problem are needed and host plant resistance is a promising alternative.
Project goals	The main goals of the project are 1) to identify novel sources of resistance against whiteflies (<i>Bemisia tabaci</i> and <i>Trialeurodes vaporariorum</i>), 2) to study possibilities for crossings, 3) to study the genetics of resistance and 4) to characterize the resistance mechanisms.

Results	
Planned results 2019	<ol style="list-style-type: none"> 1. Setting up rearings of <i>B. tabaci</i> and <i>T. vaporariorum</i> on poinsettia 2. Evaluation of cultivated and wild materials for resistance against whiteflies
Achieved results 2019	<p>Rearings of both insects are now running on poinsettia but the adaptation to poinsettia took considerably longer than expected. Until now we have tested cultivated materials of one company. Cultivated material from the other company became available in December 2019 and will be tested in January 2020. Genetic variation for whitefly resistance seems to be present in cultivated materials tested so far. There are highly significant differences among varieties. Variation for resistance to <i>T. vaporariorum</i> is larger than for <i>B. tabaci</i>. For <i>T. vaporariorum</i> there was variation for both whitefly survival and oviposition rate. For <i>B. tabaci</i> there was hardly any variation for whitefly survival, but substantial variation for oviposition rate.</p> <p>All wild material from the companies that is available to the project, 8 accessions only, has been tested for <i>B. tabaci</i> resistance. Variation is clearly present, including some accessions on which no whiteflies could survive.</p> <p>We also tried to get additional wild materials from botanical gardens, but so far this was not successful. Also our efforts to get <i>E. pulcherrima</i> seeds from natural populations in Mexico are still not successful, but discussion is ongoing.</p>
Planned results 2020	<ul style="list-style-type: none"> • Evaluation of remaining cultivated materials • Validation of whitefly resistance in the most promising cultivated and wild materials • Initiate crossings

Deliverables/products in 2019 (provide the titles and /or a brief description of the products/deliverables or a link to a website.)
<u>Scientific articles:</u>
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<u>External reports:</u>
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<u>Articles in professional journals/magazines:</u>
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<u>(Poster) presentations at workshops, seminars, or symposia.</u>
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<u>TV/ radio / social media / newspaper:</u>
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<u>Remaining deliverables (techniques, devices, methods, etc.):</u>
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