



Algemene gegevens	
PPS-nummer	KV 1409-045
Titel	Mechanism of thrips resistance in Capsicum
Roadmap/Koepel	T&U, Meer met Minder
Uitvoerende kennisinstelling(en)	Plant Breeding, Wageningen University and Research
Projectleider onderzoek (naam + emailadres)	Ben Vosman
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Startdatum	June 1, 2015
Einddatum	September 1, 2019
Korte omschrijving inhoud	Recently we have discovered an effective source of thrips resistance in pepper and shown that the resistance was based on inhibition of larval development. The goal of this project is to elucidate the mechanism and identify the gene(s) involved.

Highlights
<p>Thrips are among the major pests worldwide. Thrips puncture plant cells and feed on the content, causing silvering of the leaves. More importantly, they can transmit viruses that can destroy a complete crop in a matter of weeks. Thrips are invasive species with a high reproduction rate that can spread rapidly over a large area. Several thrips species have a worldwide distribution. Thrips are also difficult to control because of their cryptic habit, the larvae hide in closed buds and pupate in soil. This makes them difficult to reach by pesticide sprays, which limits their effectiveness. Recently we have discovered an effective source of resistance against thrips in pepper and shown that the resistance was based on inhibition of larval development. A single QTL for larval development and thrips damage was found in an F2 population. The goal of this project is to elucidate the mechanism of thrips resistance in pepper through identification of the gene(s) involved. The project has started with screening F3 plants for recombination in the QTL region. In total 3833 F3 plants were screened, originating from 12 F2 plants. Among these we found 309 lines with a recombination in the QTL region. These were phenotyped for thrips resistance together with reference materials. Based on the outcome we could narrow the QTL region. More markers will be added to further narrow it down. We also studied the effect of plant age on resistance to thrips and found out that resistance was age dependent. Young plants (4wks) were susceptible to thrips, whereas plants from 8 and 12 wks were resistant. An introgression line containing the QTL described in the PCT/EP2008/055374 patent showed a very similar phenotype to our resistant plants. Marker analysis suggests that this line also contains the QTL we are focusing on, which is different from the QTL claimed in the patent. To promote research on host plant resistance, a symposium (1) was organized as part of the International Conference on Entomology (ICE2016, Orlando, Fl.) and our work (2) was presented during that meeting.</p>

Aantal opgeleverde producten in 2016			
Wetenschappelijke artikelen	Rapporten	Artikelen in vakbladen	Inleidingen/workshops
-	-	-	1

Bijlage: Titels van de producten of een link naar de producten op een openbare website

- (1) <https://esa.confex.com/esa/ice2016/meetingapp.cgi/Session/25614>
- (2) <https://esa.confex.com/esa/ice2016/meetingapp.cgi/Paper/105645>