

iPLANTA Webinar 4:

Honey Sweet: a RNAi based PPV resistant plum,

28 January 2021 4.00pm (CET)

Summary notes

iPlanta Chair *Bruno Mezzetti* opened the webinar and introduced the iPlanta webinar series to the participants.

Introduction:

The moderator of the webinar was *Ralph Scorza*, former head of the US Agricultural Research Service team that developed that shepherded the RNAi mediated PPV resistant plum HoneySweet through the US regulatory system for biosafety. In his introduction, Scorza reminded the participants how devastating the plum pox virus (PPV) Sharka is, what it means in terms of tree and fruit production losses. He highlighted the 30 year of international collaboration in the development and testing of HoneySweet Plum.

Background: PPV and HoneySweet

Michel Ravelonandro, former Director Research at INRA Bordeaux, presented the status of the Sharka disease addressing long distance spread (e.g. international trade) and short distance spread (e.g. aphid transmission). He explained how the virus 'highjacks' the plum's metabolism, and how phytosanitary measures are the main mechanism to limit economic damage inflicted by the PPV. Ravelonandro ended by explaining that there are no conventional varieties with effective resistance and why RNAi is a durable solution.

Ioan Zagrai, Director of the Romanian Fruit Research & Development Station Bistrita presented the results of two decades of field trials with HoneySweet Plum in Europe. The conclusions after two decades of field trials are that a) HoneySweet is well protected against PPV and has the attributes of fruit quality and yield that make it suitable for commercial production, b) HoneySweet has neutral effect on the diversity of PPV variants and non-target organisms, and c) HoneySweet can be an integral part of IPM programs to reduce environmental and health impacts of pesticide use.

Preparation the request for placing on the market of HoneySweet in the EU.

Piet van der Meer, who provides volunteer assistance with the procedure for placing on the market of HoneySweet in the EU, introduced the HoneySweet request as a good 'test case' to share procedural experience with other public sector research institutes. He explained that the requests for cultivation and for use as food/feed will be submitted separately, and that for the purpose of the submission an international International non-profit association was established: the Public Research Specialty Crops Approval Association (PRESCAA).

Chris Dardick of the US ARS Appalachian Fruit Research Station Kearneysville, discussed the efficacy and safety of RNAi-mediated Plum Pox Virus Resistance in 'Honeysweet' Plum. He presented data from molecular studies, field trials and animal feeding studies, resulting in the following conclusions: a) 'Honeysweet' has a complex multi-site insertion event that causes no measurable changes in flanking regions, b) siRNA expression in Honeysweet is relatively stable under different environments over time, c) viral infection of plums produces significantly higher levels of virus directed small RNAs than Honeysweet, d) a ten year study showed that PPV populations in limbs grafted to 'Honeysweet' show no evidence of adaptive evolution, e) a 90-day mouse feeding study did not reveal any measurable health effects of 'Honeysweet' plum consumption

Nick Vangheluwe, who provides volunteer assistance with compiling the scientific dossier for placing on the market of HoneySweet in the EU, gave an overview of the structure of the cultivation dossier that will be submitted to the Dutch authority for Directive 2001/18. The sections of the dossier include: 1) General information, 2) Nature of the GM plant contained in the product, 3) Information relating to previous releases, and 4) Information relating to the monitoring plan. He further discussed Regulation (EU) 1381/2019 on the transparency and sustainability of the EU risk assessment in the food chain (the 'Transparency Regulation'), which will come into force in March 2021.

The webinar ended with an extended section of responses to the many questions brought forward by the participants.

The webinar was attended by 85 participants.

The video of the meeting, the presentations and the report can be found at the following links:

<https://www.iplantawebinars.com/event/5fe0cbb052a27f1f07fe0450>

<https://iplanta.univpm.it/node/82>