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Does plant virus infection modify calcium signalling induced by aphid vector feeding?

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<p>Picture of the first author</p>	<p>First author: Title : Dr. Firstname: Martin Last name: Drucker ¹</p> <p>Institutions: ¹ INRA Centre Grand Est - Colmar Address: 28 rue de Herrlisheim, 68000 Colmar, France ² INRA Centre Occitanie - Montpellier Email: martin.drucker@inra.fr Phone: +33 760 694 070</p> <p>Co-authors (with their institutions) : Christiane Then ², Geoffrey Schivre ², Fanny Bellegarde ², Tou-Cheu Xiong ²</p>
<p>Biography = maximum 800 characters Martin Drucker achieved his Ph.D. in plant cell biology in 1995. Since 1999, his research focuses on molecular and cellular aspects of plant virus transmission by aphid vectors, initially in the group of Stéphane Blanc (INRA Centre Occitanie - Montpellier), and now together with Véronique Brault (INRA Centre Grand Est – Colmar). In the last years, he and his co-workers developed a new concept in virus transmission – transmission activation – where the presence of vectors triggers formation of transmissible virus morphs. This means that viruses may switch from a replicative state to a transmissible state when transmission is possible. His present research aims to understand how plant viruses manipulate plant hosts and aphid vectors to optimise transmission.</p>	
<p>Abstract title: Does plant virus infection modify calcium signalling induced by aphid vector feeding? Abstract = maximum 1500 characters Aphids induce rapid calcium waves around the feeding sites that might be the first step in plant recognition of aphid feeding and subsequent eliciting of defence responses ¹. Further, recent results by us show that calcium signalling is important for aphid transmission of some non-persistent plant viruses ². Therefore, we wanted to know whether viral infection alters calcium signalling as presented by propagating calcium waves. For this, we infected transgenic Arabidopsis expressing the FRET-based YC3.60 calcium reporter with two non-persistent, non-circulatively transmitted tissue generalist viruses, cauliflower mosaic virus and turnip mosaic virus, and a persistent, circulatively transmitted phloem-restricted virus, turnip yellows virus. Single aphids were placed on leaves of infected or mock-inoculated plants and calcium elevations were recorded by real time fluorescence microscopy. A preliminary analysis is presented.</p> <p>References ¹ Vincent et al. 2017: https://doi.org/10.1105/tpc.17.00136 ² Berthelot et al. 2019: https://doi.org/10.1128/JVI.01822-18</p>	

