



Tropentag, September 20-22, 2017, Bonn

“Future Agriculture:  
Socio-ecological transitions and bio-cultural shifts”

## Detection and Characterisation of a New *Iilarvirus* in *Passiflora edulis*

CHRISTIAN LÜCHAU, JOSEPH CUTLER, JULIANE LANGER, SUSANNE VON BARGEN, CARMEN BÜTTNER

*Humboldt-Universität zu Berlin, Albrecht Daniel Thaer-Institute of Agricultural and Horticultural Sciences (ADTI), Germany*

### Abstract

Colombia is one of the world's main producers and exporters of tropical fruits. Production, commercialisation, and export of these fruits are gaining substantial importance for the Colombian economy. Colombia lacks a robust preventive management programme for the control of plant viruses. In a large project between German and Colombian universities, the Colombian Agricultural Institute (ICA), the Colombian Corporation of Agricultural Investigation (CORPOICA), and the International Center for tropical Agriculture (CIAT), tests for certification of virus-tested plant material are being developed. After banana (*Musa acuminata*) and cape gooseberry (*Physalis peruviana*), purple passion fruit (*Passiflora edulis* Sims) is the third largest fruit export of the country. The consumption of purple passion fruit is expanding worldwide, and due to Colombia's climatic and geographical conditions, the country could play a leading role in this market. Recent studies have shown the presence of a new virus of the *Iilarvirus* genus in Colombian purple passion fruit farms. The spread of this virus could mean drastic reduction of crop yields and major economic losses. Having a good understanding of the biology of this plant pathogen is essential to Colombian farmers for preventing its infection and negative impacts on this crop. For this purpose, molecular biological tools such as nucleic acid isolation, polymerase chain reaction (PCR), and Next Generation Sequencing (NGS) are being used to measure the frequency and distribution of this virus in Colombia, to characterise which symptoms are associated with it, and to identify the pathways for its transmission. This research will contribute to methods for distributing virus-free plant material of *Passiflora edulis* in Colombia, and the protocols developed will be applied to other important Colombian exports.

**Keywords:** Certification programme, *Passiflora edulis* Sims, plant viruses, tropical fruits