

Development of a diagnostic DAS-ELISA Kit for *Soybean Mosaic Virus (SMV)* -infected Colombian purple passion fruit

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ABSTRACT

Colombian purple passion fruit is increasingly in demand as domestic and international markets recognize its unique taste, antioxidant properties, and potential for industrial processing. One of the main problems for production is the incidence of viral pathogens that affect yields. In Cundinamarca there has been an increase in passion fruit plants exhibiting typical symptoms of viral diseases such as leaf blistering and fruit deformation. Of 102 samples collected between 2016-17, 9% tested positive using a PTA (Plate-Trapped Antibody) - ELISA and a *Potyvirus*-group specific antibody. In a pooled sample from multiple farms, Next Generation Sequencing (NGS) demonstrated the presence of *Soybean mosaic virus (SMV)*, among other viruses. PCR detection of SMV in *Potyvirus*-group positive passion fruit was carried out using primers based on Botelho, et al (2016). PCR-positive SMV samples were then sent to BIOREBA Laboratories where a new SMV DAS-ELISA Kit was synthesized. This experiment is part of a cooperation project between German and Colombian universities, BIOREBA, the Colombian Agricultural Institute (ICA), the Colombian Corporation of Agricultural Investigation (CORPOICA), and the International Center for tropical Agriculture (CIAT), in which detection and diagnosis of viruses present in passion fruit plantations in several regions of Colombia can assist in certification of virus-tested plant material.

References:

Botelho, S. R., Martins, T. P., Duarte, M. F., Barbosa, A. V., Lau, D., Fernandes, F. R., & Sanches, M. M. (2016). Development of methodologies for virus detection in soybean and wheat seeds. *MethodsX*, 3, 62-68.