

# Annual Conference on Bioscience

September 12-13, 2016 Berlin, Germany

## The use of positive controls bank for the diagnosis of quarantine viruses and viroids through PCR and RT-PCR as a safer alternative

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Increasing genetic variability and generating plants with higher productive potential, which can be improved through the exchange of any promising propagative plant material between countries, is the main goal of modern agriculture. However, it is the main way to introduce exotic pathogens, such as viruses, leading to unwanted consequences. To avoid pathogen introduction in Brazil, the imported plant material must be sampled at the port of entry and analyzed to investigate the presence of quarantine and regulated non-quarantine pathogens. Such analysis can be done through several techniques, but the most common ones have been the DAS-ELISA, PCR for DNA viruses and RT-PCR for RNA viruses. Since the routine diagnostic methods require the use of a positive control for high reliability and credibility, the diagnosis of quarantine viruses are not an easy task. The maintenance of a collection of quarantine viruses, even under protected cultivation, could offer risk of virus scape and field spreading. Dehydrated infected plant tissues require periodic replacement, and frequent imports. This study reports the establishment of a bank of positive controls for 41 quarantine viruses and two quarantine viroids, as well as 12 regulated non-quarantine viruses in Brazil. It was accomplished by cloning pathogen genomic fragments, such as the viral coat protein gene, in appropriate plasmids, to support the diagnostic techniques through PCR and RT-PCR. This bank of positive controls provides a safer and more economical alternative, eliminating the risk of incidental introduction of exotic viruses and viroids in the country.

### Biography

Antonia dos Reis Figueira is a Plant Virologist. She has completed her PhD in UNICAMP-SP-Brazil in 1984. She works for the Federal University of Lavras (UFLA) since April 1982, where she develops teaching, research and extension activities related to plant virology. She advised dozens of students from under-graduate and graduate programs such as Agronomy, Biology, Phytopathology and Biotechnology.

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