Pepino mosaic virus: What do we know so far and how to proceed?

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Pepino mosaic virus (PepMV) is a typical example of how a ‘new’ plant virus can cause major problems worldwide in a very short period of time. After its first scientific description in 1980 it was not reported until it suddenly appeared in the beginning of 1999 in indoor tomato crops in the UK and the Netherlands. Since then it has spread rapidly and is causing sometimes severe problems in tomato production worldwide.

Reports on symptom severity and economic effects of the virus were conflicting and initially believed to be related to particular virus strains. More detailed research has now learned that there are mild and severe isolates within each PepMV strain.

Within Europe the virus quickly led to a debate about the possible economic impact of the virus and the necessity of a quarantine (Q) status. A Q-status on tomato seeds was issued but many questions on the precise dangers of the virus remained. A detailed Pest Risk analysis (PRA) was needed and in 2007. The European Commission financed an EU-wide research project (FP6-PEPEIRA) to produce the scientific data needed for such a PRA.

In January 2010 this project ended and it has indeed produced a significant amount of scientific data on PepMV. Detailed knowledge on seed transmission, biological properties on various Solanaceous crops and optimized detection protocols (now under evaluation to become for EPPO protocols) as well as detailed data on the biological and economic effects of different virus strains on tomato crops. These data will serve to guide further EU-wide discussions on the phytosanitary status of the virus. All this will be discussed.

PepMV is an example of how a relatively simple plant virus can not only lead to direct economic damage but also to considerable confusion on the regulatory level. Which lessons can we learn from this virus that can help us to better deal with future plant virus problems?