

# **SharCo**

## **Containment of Sharka virus in view of EU-expansion**

Small Collaborative project of the 7<sup>th</sup> Framework Programme

Theme 2

Food, Agriculture, Biotechnologies

### **DA.1.5**

## **Guidelines for a Sharka risk management system**

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**Deliverable report structure**

**1. GENERAL PRESENTATION..... 3**

1.1. CONTEXT..... 3

1.2. RATIONALE ..... 3

**2. DETAILED DESCRIPTION ..... 4**

**3. ORIGINAL SPECIFICATIONS AND ACTUAL ACHIEVEMENTS ..... 5**

**4. USE AND DISSEMINATION OF THE RESULTS..... 6**

**5. ANNEXES..... 6**

# 1. General Presentation

## 1.1. Context

The introduction and spread in EU of organisms harmful to plants or plant products, *Plum pox virus* (PPV) included, is regulated by the 2000/29 Directive. A specific directive regulating PPV does not exist. This situation results in a significant variability in the interpretation and implementation of the current directive as applied to PPV according to the different community member states. Unfortunately, the current status of PPV spread in Europe remains very alarming. Only part of the European countries have areas where either PPV is not present or where the disease is still under control.

Moreover, one of the major outcomes of SharCo Epidemiology workpackages (WPE1 and WPE2) is the demonstration that higher risks are impending over EU, which include the spreading of new, recombinant or divergent isolates or the entry of PPV strains not present in EU yet. It requires the establishment of well-documented and harmonized procedures of PPV containment, completed by up-to-date measures that would ensure a sustainable production of propagation plants in nurseries and fruits in orchards.

In this context, the practical achievement of SharCo European FP7 collaborative project was the formulation of a **risk management system (RMS)** aiming to better specify and evaluate the current options of PPV management in EU.

## 1.2. Rationale

Illegal traffic and insufficiently controlled exchanges of infected propagative plant material has been a major way of *Plum pox virus* spreading over long distances. However, once sharka has become established in an orchard, aphids transmit the virus locally. Therefore, insufficient or inappropriate measures of sharka containment allowed the virus to spread at a larger scale, locally and worldwide.

However, the European Union is characterized by a high diversity in sharka outbreaks. Basically, three phytosanitary conditions can be encountered in EU: 1) **areas free of PPV**, 2) **areas where PPV occurs sporadically but is under control**<sup>1</sup>, 3) **areas where PPV is endemic**. Please note that we are considering ‘areas’ and not ‘member states’ or ‘countries’

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<sup>1</sup> Please note that this situation is usually difficult to ascertain since once PPV occurred in an area, we can never rule out the possibility that the virus remains present in the surroundings, being established in refuges such as private or public gardens, abandoned or wild *Prunus* trees.

because in most cases, two or three types of phytosanitary conditions can be encountered in the same country. Besides, risks associated with the sharka disease can occur in one, two or three types of stone fruit tree cultivation, as follows:

i) **Mother plant collections or blocks**

ii) **Nurseries** which are sites of production for propagation material (including seedlings, rootstocks and grafted plants).

iii) **Orchards** which are sites of fruit production.

In each situation, the risk can be at the entry (of the virus), at the spreading and at the establishment level but the impact will differ by virtue of the phytosanitary status of the area. In consequence, management measures have to be adapted, depending on the agronomic, phytosanitary and environmental conditions. For example, the risk of entry and establishment of the PPV-C strain (infecting exclusively *Prunus cerasus* species, which include sweet and sour cherries) in an area where PPV is endemic but no cherry trees are cultivated is very low. No specific measures of management are proposed. The situation would be different if we consider the risk of entry of PPV-M in an area where it is not present yet (but where other strains can be endemic such as PPV-D) and where peach, apricot and plum trees are cultivated. In this case, the risk and its impact are both much higher and adequate measures of PPV containment have to be implemented. Similarly, any PPV infection within Mother Plant blocks will pose a high risk for the whole production of PPV-free propagation material. Therefore, any infection is un-acceptable and whatever the area status, eradication is the first measure of management recommended.

Following the above considerations, SharCo partners prepared guidelines for a sharka risk management system.

## **2. Detailed description**

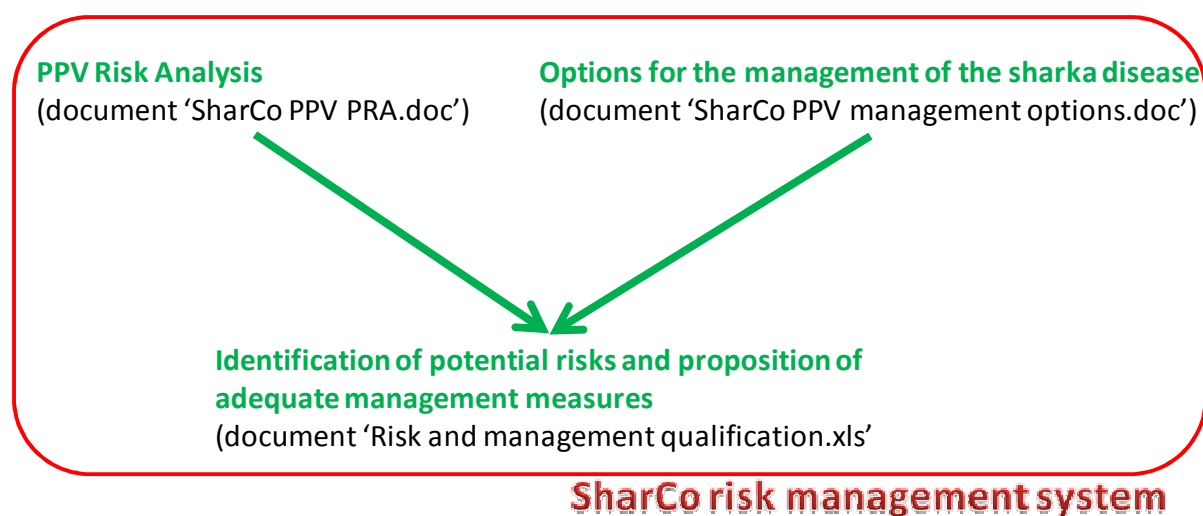
The developed Risk Management System is based first on accurate risk analysis, followed by an evaluation of the management options.

Analysis of the risks linked to PPV is presented in the Pest Risk Analysis (PRA) document (‘**SharCo PPV Pathogen Risk Analysis -PRA-**’, annex 1 of this document). It is based on a PRA produced by the Dutch Plant Protection Services, Ministry of Agriculture, (Version of January 2011) and revised by the SharCo consortium, according to results and data obtained in the frame of the SharCo project.

The SharCo partners also prepared a second document in which the possible management measures still available and possible in EU are analyzed in detail (annex 2, ‘**SharCo PPV management options**’).

Both documents, the PRA and the SharCo PPV management options, served to design the final document in which the potential risks associated with the sharka disease and the management options linked to each risk are identified and analyzed (annex 3, ‘**Identification of potential risks and propositions of adequate management measures**’).

The three documents constitute the **SharCo risk management system** (see Figure below).



All documents are available online under the following link:

<https://collaboratif.inra.fr/silverpeas/Publication/197356>

### **3. Original specifications and actual achievements**

The originality of the SharCo risk management system is that it takes into account the phytosanitary status and the type of *Prunus* cultivation in a given area to identify management measures that could be recommended and implemented. This is a highly flexible system that also relies on the evaluation of the risk by the plant protection services (local and/or national) and the implementation of adequate management measures by the various stakeholders and end users (plant protection service officers, nurserymen, fruit producers).

However, further guidance on the harmonization of PPV risk assessment and implementation of adequate management measures within EU should also be developed.

## **4. Use and dissemination of the results**

The three documents freely available online are part of the SharCo risk management system. The first document, 'SharCo PPV PRA', is expected to help the plant protection service officer in identifying and evaluating risks associated with sharka disease. The third document is listing up to 455 risks that the SharCo consortium identified as linked to PPV but the list is not exhaustive. It serves as an example in the identification and evaluation of possible management options for each risk.

## **5. Annexes**

See Annexes 1, 2 and 3 at <https://collaboratif.inra.fr/silverpeas/Publication/197356>