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Disinfection of potato ringrot in practice.

Several bacterial potato pathogens can be transmitted by leakage or oozing from macerated or rotting infected tubers. Those fluids and ooze can contaminate healthy tubers directly or indirectly by survival on contaminated surfaces of storage material and equipment, e.g. wood, metal and rubber. *Clavibacter michiganensis* subsp. *sepedonicus* (*Cms*) is a regulated organism within the EU which has the potential to cause a high impact upon outbreaks that might add up to millions of Euros yearly within Europe. If not regulated under quarantine control, the risk of rapid spread might cost Europe even more.



In the event of a ringrot outbreak and after eradication measures have been taken, *Cms* is known to remain on farm equipment and storage facilities, occurring at low frequency for multiple years. Tracing of incidental findings in potato production after a controlled outbreak often show a link with storage boxes associated to earlier findings of *Cms*. Because wooden storage boxes are circulated amongst potato producers through trade, the disinfection of those boxes is essential to ensure they are not a source of *Clavibacter michiganensis* subsp. *sepedonicus*.

There are several authorised products available for disinfection of materials used in agricultural production systems, but producers and plant health officials lack information on their efficacy on *Cms* under practical conditions. The project focuses on the analysis of the efficacy of selected disinfectants on contaminations with *Cms* on wooden storage boxes. The aim is to determine their efficacy under practical conditions, using an installation which is common in potato farms. The project will provide the producers and plant health officials with an effective method for disinfection and application protocols (threshold, mode of application, etc.).



In a laboratory study a full list of disinfectants was compiled to analyse their potential efficacy for control of *Clavibacter michiganensis* subsp. *sepedonicus*, *Dickeya solani*, *Dickeya dianthicola* and *Pectobacterium atrosepticum*. Because of its persistent nature, *Cms* is selected for studies under conditions true to practice in potato production systems.

Based on the promising results obtained under laboratory conditions, a practical study under strict phytosanitary quarantine containment is about to be started in spring 2015. Parallel tests will be performed in the laboratory to relate observations obtained under practical conditions. Products showing efficacy in disinfection of *Cms* on wood surfaces under laboratory conditions (in the dose rates of their authorisation in the Netherlands) will be tested in a practical setup with wooden boxes.

Although the practical application of the disinfection regime could only be tested on *Cms* within this project, it is likely that a similar regime will be equally effective against *Dickeya solani*, *Dickeya dianthicola* and *Pectobacterium atrosepticum* which are known to be less persistent in the natural environment than *Cms*. This hypothesis could be tested in a subsequent project under less stringent conditions as these bacteria are not subject to quarantine control.

Project ID: The effects of disinfection on *Clavibacter michiganensis* subsp. *sepedonicus* and other bacterial pathogens of potato in Europe (CMS-DISINFECT).