METAWATER: New METAgenomics and molecular based tools for european scale identification and control of emergent microbial contaminants in irrigation WATER

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Irrigation water may be the source of microbiological contamination of fresh vegetables and has been associated to important food-borne epidemics of gastroenteritis, acute hepatitis and other important diseases.

The proposed project will investigate what pathogenic microoganisms are contaminating irrigation water used in Europe, where are there they coming from, what treatments are more useful for removing microbial pathogens from reclaimed water and how to improve management of irrigation water and National and International regulations.
From a most scientific point of view, we will also use most advanced technologies for developing standard protocols for the simultaneous detection of microorganisms in water used for irrigation and will identify existing, emerging and new pathogens and microbial communities, including viruses, bacteria and antibiotic-resisting bacteria, protozoa and cyanobacterial toxins in water from rivers, ground water, wastewater and reclaimed water, and distribution water.

We will produce scientific information on pathogens excreted in the population of different geographical areas in Europe and bioinformatics tools and data bases for a better analysis of the information generated. The results are shared with water companies and regulatory agencies and will contribute to the reduction of the public health risk and to improve water and food safety in Europe.