Consensus detection and identification protocol for *Acidovorax citrulli* on cucurbit seeds

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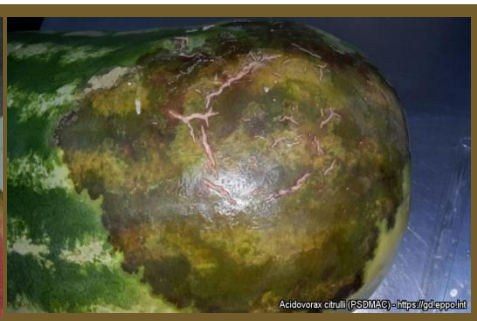

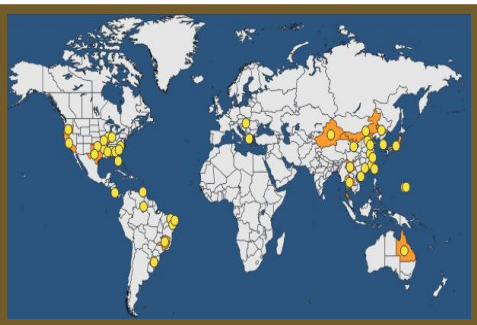

Funding

Non-competitive funding mechanism. Each funder only pays for the participation of their own national researchers. Total funding € 78 000

Research consortium

UNIMORE (IT), ANSES (FR), BPI (GR), NFCSO (HU), CREA (IT), NVWA (NL), FGBU-VNIIKR (RU)

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Key outputs and results

- Validated identification methods (test performance studies for detection and identification tests)
- A consensus protocol for the detection of *Acidovorax citrulli* on cucurbit seeds

Goals

Acidovorax citrulli (synonyms: *Acidovorax avenae* subsp. *citrulli*, *Pseudomonas pseudoalcaligenes* subsp. *citrulli*) is the causal agent of bacterial fruit blotch (BFB) of cucurbit plants, primarily watermelon and melon where significant economic losses have been reported. Once the pathogen is introduced in an area, high humidity, high temperature and overhead irrigation increase the risk of BFB epidemic development. Despite the economic importance of the disease, little is known about the basic aspects of *A. citrulli* epidemiology and the factors involved in its pathogenicity and virulence. Since there are no resistant commercial cultivars, successful management of BFB depends on exclusion of primary inoculum by using pathogen-free seeds and seedlings. Seed health testing reduces the risk of outbreaks. For this purpose the project has the goal to develop a consensus protocol for the detection of *A. citrulli* on cucurbit seeds together with the monitoring of the pest in the main cucurbit production areas. Moreover, there is an ever-growing need for multiplex, high-throughput detection methods that can be applied directly to plant parts to certify their health status. Improvement or development of new methods to distinguish accurately between bacterial strains (two groups determined currently for *Acidovorax citrulli*) would be beneficial in determining their emergence and evolution as pathogens.