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# Novel Multiplex Assay Detects Citrus Pathogens

Tech ID: 24385 / UC Case 2014-045-0

### **PATENT STATUS**

Country	Туре	Number	Dated	Case
United States Of America	Issued Patent	10 273 547	04/30/2019	2014-045

## **IMAGES**



Photo from Agricultural Research Service

Photo by Mmacbeth

### **BRIEF DESCRIPTION**

# Background:

Citrus greening disease, also known as huanglongbing (HLB), has been a serious, pervasive problem caused by a multitude of plant pathogens. It has decimated many citrus trees, drastically decreasing orange production and costing the US economy an estimated \$11B every year. Currently, there is no cure for HLB, so the citrus industry is in dire need for a cost-effective method of early HLB detection.

# **Brief Description:**

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#### OTHER INFORMATION

#### **KEYWORDS**

fresh fruit, global foods, citrus, citrus
canker, citrus stubborn disease,
pathogen detection, HLB, Citrus
Variegated Chlorosis

#### **CATEGORIZED AS**

- ► Agriculture & Animal Science
  - ▶ Other
  - ▶ Plant Traits
  - ▶ Plant Varieties

RELATED CASES

2014-045-0

UCR Researchers have developed a means to detect and identify multiple plant pathogens for disease diagnosis, including citrus greening disease. By developing a novel multiplex RNA assay, they discovered ten targets of nine citrus pathogens and a citrus control gene. In addition to the assays, target-specific probes were designed and implemented to improve the pathogen detection process. These assays were also coupled with high-throughput robotic extraction and purification procedures, optimized for citrus tissues. Furthermore, they also developed a 3-plex DNA assay system along with 3 targets for simultaneous detection, identification and quantification of plant pathogens.

#### **ADVANTAGES**

- ▶ Increases uniformity and cost effectiveness
- ▶ User-friendly assay procedures
- ▶ Simultaneous detection, identification and quantification for the ten targets

#### **APPLICATIONS**

- ▶ Detection of endemic and exotic plant pathogens
- ▶ Plant health monitoring services
- ▶ Citrus disease management

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