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Scanning for Spoilage of Food Contents in Metallic and Non-Metallic Containers

Tech ID: 24842 / UC Case 2012-383-0

ABSTRACT

Researchers have developed a novel method to analyze the contents of closed metal containers to determine contamination in food products.

FULL DESCRIPTION

Some of the conditions that accelerate spoilage, such as inappropriate temperature and moisture control, also encourage the growth of pathogenic microorganisms that cause foodborne illness. Spoiled food is not only an issue of food quality, it is also often a question of food safety. Foodborne illness costs the United States between \$5 billion and \$17 billion each year in medical care and lost productivity.

Current methods may be inconclusive, impractical for large scale applications, require violation of contained beverages, and increase risk of contamination.

Researchers at the University of California, Davis have developed a novel method to analyze metal containers using NMR. This novel technology uses high resolution Nuclear Magnetic Resonance for the detection of contamination, degradation and other changes in flavor quality of sealed foods such as large quantities of milk, fruit juice, vegetable juice, meat, and cheese without altering the contents of the container. This method would allow food producers to more quantitatively monitor the storage and safety of food products.

APPLICATIONS

- ▶ Food and beverage spoilage detection in:
 - ▶ Milk
 - ▶ Fruit juice
 - ▶ Vegetable juice
 - ▶ Meat
 - ▶ Cheese

FEATURES/BENEFITS

- ▶ Determine spoilage without opening closed container

PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Issued Patent	10,338,015	07/02/2019	2012-383

CONTACT

University of California,
Davis Technology Transfer
Office
techtransfer@ucdavis.edu
tel: 530.754.8649.



INVENTORS

- ▶ Augustine, Matthew P.
- ▶ Lim, Victor

OTHER INFORMATION

KEYWORDS

food, spoilage, beverage, milk, juice, meat, cheese, container, quality, foodborne disease, sealed food

CATEGORIZED AS

- ▶ **Agriculture & Animal Science**
 - ▶ Chemicals
 - ▶ Devices
 - ▶ Processing and Packaging
- ▶ **Biotechnology**
 - ▶ Food
- ▶ **Environment**
 - ▶ Sensing
- ▶ **Sensors & Instrumentation**
 - ▶ Analytical

RELATED CASES

2012-383-0

ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

- ▶ [Nuclear Magnetic Resonance System for Determining Oil and Water Compositions in Drilling Mud](#)
- ▶ [Method for Estimating Blood Plasma Water Content Using Portable NMR Relaxometry](#)

University of California, Davis

Technology Transfer Office

1850 Research Park Drive, Suite 100, ,
Davis, CA 95618

Tel: 530.754.8649

techtransfer@ucdavis.edu

<https://research.ucdavis.edu/technology-transfer/>

Fax: 530.754.7620

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