

CANARY® Biological Detection Technology

TECHNOLOGY HIGHLIGHT

CANARY® is a tested and proven method of pathogen threat detection, providing users with an unprecedented level of speed and sensitivity in both commercial and defense applications. Originally developed by MIT, CANARY technology allows the detection of a wide range of pathogens including bacteria, viruses and toxins.

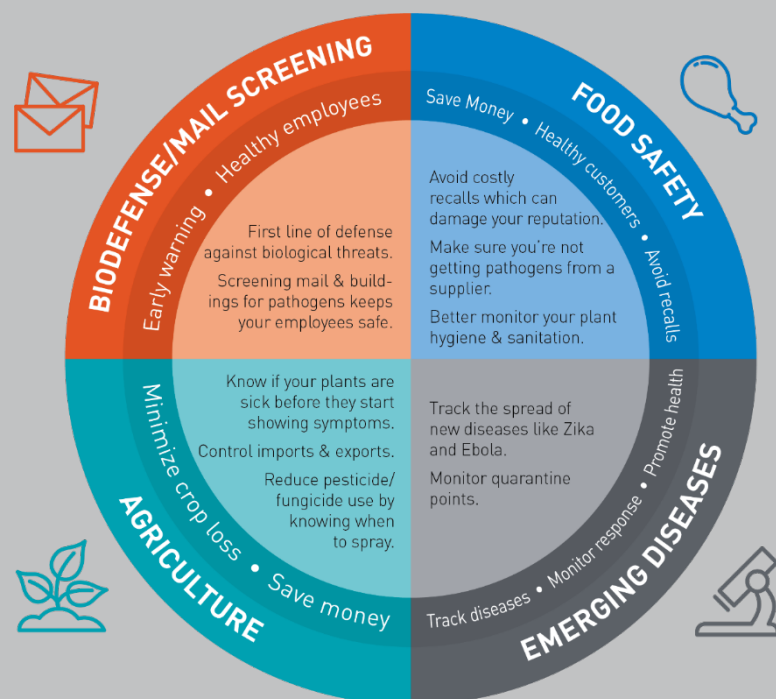
HOW IT WORKS

Canary uses a genetically engineered immune cell called a "Biosensor" to:

1. **IDENTIFY & BIND** to a specific target
2. **LUMINESCE** when the target is found

By measuring light output from the cell, we can tell if the target biological is present in the sample.

APPLICATIONS



CURRENT BIOLOGICAL DETECTION METHODS AND THEIR LIMITATIONS FOR FIELD-USE

CULTURE

Considered the “Gold Standard,” this method puts a sample in a petri dish and waits for the pathogen to grow. It is extremely sensitive but requires several days to get results.

PCR

One of the most commonly used methods, PCR looks at the DNA of a sample to tell if a pathogen is present. It is quite sensitive, but requires hours and technical expertise to extract the DNA for testing.

LATERAL FLOW

While this method is rapid & inexpensive it has performance issues and sacrifices sensitivity. In environments where exposure is a health and safety risk, this method fails to provide reliability.

CANARY breaks through the limitations of current biological detection methods for field-use. It combines the sensitivity of PCR with the speed of Lateral Flow, allowing users to accurately test for tiny amounts of pathogen in minutes. The method requires very few materials, time, and minimal scientific expertise.

BENEFITS OF CANARY



SPEED

If a pathogen is present, it only takes seconds for the Biosensor to bind and luminesce, giving you results in under 5 minutes.



SENSITIVITY

Imagine the biosensor as a cell covered in light bulbs with a switch. With other technologies, when a single pathogen is present the switch turns on one light bulb. With CANARY, the switch turns on all the light bulbs. This amplification of signal makes CANARY incredibly sensitive.



EASE OF USE

No complicated extractions. No waiting for bacteria to grow on a plate. No long lists of required buffers and materials. Minimal scientific expertise needed. Once your sample is prepared, tests can be run in 3-5 minutes. Our software algorithm automatically interprets the data for you, giving you the timely results you need.

GET IN
TOUCH

If you would like to know more about CANARY technology, how it could work for you and the products you can find this leading edge technology in, visit:

www.smithsdetection.com