The future of food fraud detection

The global food industry is a commercially complex sector riddled with food fraud, hence there is a significant need for automated and efficient systems. Although there are current methods and technologies in place, it can be challenging to detect food fraud effectively. Therefore, there has been an increasing focus on more efficient and rapid methods for food fraud detection, specifically in the rice supply chain. A project conducted by the African Rice Vigilance on Poor Quality (ARVPQ) project has demonstrated that it is possible to screen a large number of samples with minimal training requirements, indicating that the test also indicates a very high degree of certainty.

Project results

- 1,500 biomarkers identified as potential food fraud markers
- Laboratory-based approaches using techniques such as ICP-MS, GC/MS, LC/MS

The two-tier method in action monitoring and managing rice fraud

For rice, the risk is huge as it is a worldwide crop and is an important food source in virtually every country. Therefore, it is necessary to set up a testing method as part of the supply chain management system to ensure the quality and integrity of rice.

The Agilent Foundation funded a project to reduce the impact of fraudulent rice, partnering with Rice Innovation Lab, Rice Innovation Unit, Chinese Food Safety Law, Unit, UK National Food Crime, and departments, which include consumers, the food industry, governments, and academia in collaboration with Veterinary Public Health in Hong Kong University, the University of Hong Kong, and Rice Innovation Lab in the UK.

Identifying food fraud

Food fraud is the intentional addition of materials or substances that are harmful or fraudulent to food products. Frequently, these substances are unapproved or mislabeled substances like allergens, uncontaminants, or chemicals. Food fraud is significant as it affects the health and safety of global populations.

Current methods and technologies

The current methods and technologies for food fraud detection are mainly laboratory-based approaches using techniques such as ICP-MS, GC/MS, LC/MS. These techniques are labor-intensive and require skilled personnel, which can be expensive and time-consuming. Therefore, researchers are looking for faster and more efficient methods to detect food fraud.

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