



## OMIC USA's Next-Generation Sequencing Solutions for Analytical Food Testing

The food industry is constantly evolving with the need for faster and more comprehensive testing methods. Next-generation sequencing (NGS) is a powerful and rapidly evolving technology that has the potential to revolutionize the field of food analysis. Since its advent, NGS has become an increasingly expansive tool for DNA-based applications. There are a variety of NGS platforms and technologies, which offer a high-throughput and high-speed approach to DNA sequencing that can allow for the detection and identification of multiple targets simultaneously.



Due to the open-ended and scalable nature of the technology, there are a wide array of NGS applications that can be employed in analytical food testing. OMIC USA has taken the steps to implement multiple testing options that utilize NGS technology geared at analysis of food and agricultural crops. These include:

### *+Plant, Fish, and Meat Species ID: Food Fraud and Food Authenticity*

Via DNA sequencing of multiple genes, our Species ID workflow employs a broad screening approach to identify the plant, fish, or meat species in complex samples. Species identification is a critical step in detection of Food Fraud and verification of ingredients. The Plant Species ID testing is applicable for a variety of plant-based products, including Seeds, Feed, Nutraceuticals, Herbs & Spices, Supplements, Processed Foods, and other Ingredients. Fish and Meat Species ID testing is applicable for a variety of meat-containing products, including processed and raw ingredients.

### *+Fungal Species ID: Mushroom and Yeast/ Mold Identification*

Our Fungal Species ID workflow utilizes an extensive database of fungal DNA sequences to identify species. The workflow is adaptable for a variety of purposes, including detection and identification of Mushroom species in food and supplement products, as well as species identification of an isolated colonies or cultures.

#### *+Microbiome Analysis: Bacterial Profiling*

Utilizing a metagenomic workflow, the Microbiome Analysis can be utilized to provide a broad profile of the bacteria in a sample. It can be performed directly on the sample, without selective culturing, to characterize all bacteria a specific subset of bacteria (e.g. spoilage bacteria, probiotic bacteria) in a complex sample, or to do specific bacterial identification of an isolated colony or pure microbial culture.

#### *+Agrigenomics: Crop Genotyping*

Utilizing a Genotyping By Sequencing (GBS) approach, thousands of Single Nucleotide Polymorphism (SNP) markers can be analyzed in parallel, allowing for high-throughput crop genotyping for a variety of research, variety development, and crop improvement purposes.

#### *+Contract Research Services*

Our team of experts can help design your study and analyze your products to assess your unique testing needs. Contact us to see for more details!