

# Bringing More to the Table

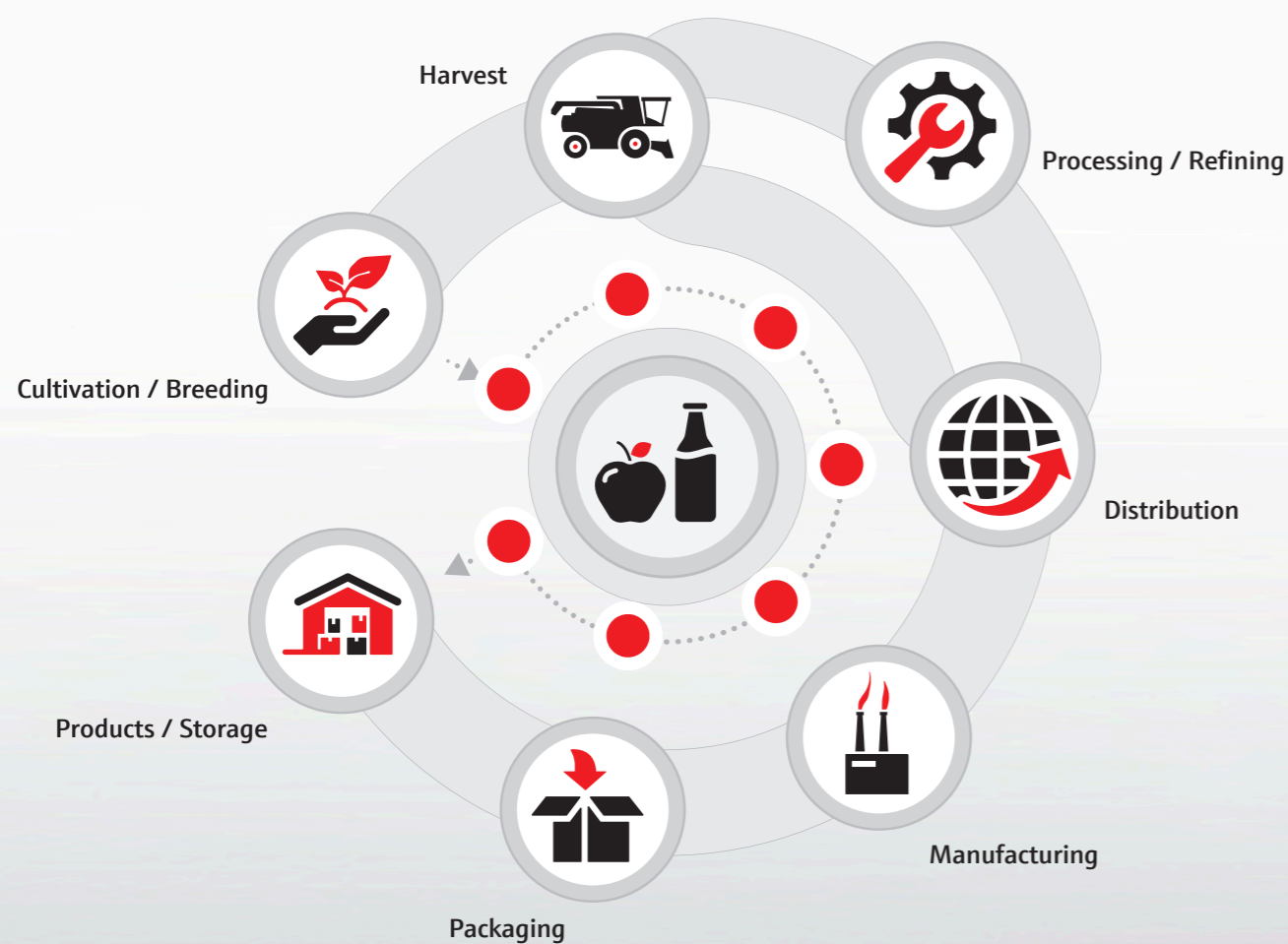
## Solutions for Food & Agriculture

Food & Agriculture



## Bringing More to the Table

We help you to meet the essential requirements for food and feed analysis by providing individual solutions and easy-to-use instrumentation - from farm to production to the final consumer product.



## Edible Oils



Keeping quality standards for global stakeholders with a complex supply chain – we help you to keep it simple and focusing on the relevant quality and food safety parameters.



### The challenge

Accurate and reproducible analysis in a challenging sample matrix covering a wide range of parameters throughout the production and manufacturing processes.

### The solution

Customized multi-parameter analytical instruments and methods to support the analysis of quality, food safety, and genetic parameters.

## Ensuring Quality, Safety, and Authenticity of Products Containing Edible Oils

Analytik Jena is a partner you can depend on – with our many years of experience in determining contamination originating from the chemical process, raw and by products and additives, evolution of nutrients along the value chain, cross-contamination, and other established quality parameters.

### Be more efficient

- Dilute and shoot – analysis of edible oils and fats with no need for digestion
- Automation options
- Unattended operation
- Risk assessment via feedstock analysis prior to processing and blending

### Get reliable results

- Interference-free analysis of trace and major elements
- Raw material and product traceability
- Reliable instrument performance ensured by Self Check Systems
- Pre-developed methods and direct application support

### Analyze with us

- Metals, semi-metals, and non-metals (e.g. Cd, Pb, As, Hg)  
AAS, ICP-MS, ICP-OES, C/N/S/X
- Origin analysis  
Isotope ratio ICP-MS
- GMO analysis  
Automated nucleic acid extraction, thermal cyclers, real-time thermal cyclers
- Risk potential analysis of 3-MCPD via chlorine detection  
C/N/S/X
- Color, FFA-content, DOBI, K-value, I-value  
UV/Vis

## Dairy & Beverages



We help producers of dairy products, beverages, and drinking water to keep their quality, safety and authenticity promises with analytical solutions that can be tailored to the requirements of your lab.



### The challenge

Reliable, on-time analysis of diverse sample types covering a wide range of parameters of relevance for food quality and safety as well as highly specific identification of origin and species.

### The solution

Comprehensive portfolio of analytical products dedicated to the precise analysis of safety and product quality control parameters. Sensitive and specific analytical tools for assessing relevant food authenticity claims.

## Highly Specific and Reliable Results - On Time

Quick and easy access to critical parameters allows you to efficiently assess feedstock characteristics, manage processes, and approve final products such as raw milk, powdered milk, cheese, butter or yoghurt, non-alcoholic and alcoholic beverages, and drinking water.

### Authenticate your claims more easily

- Species identification with maximum specificity based on unique DNA sequences
- Fast and accurate isotope ratio analysis

### Get better results

- Simple and robust analysis
- Cost-effective and easy-to-use technologies
- High-throughput analysis for contract labs
- Flexible instrument configurations
- Minimal sample preparation
- Accelerated microbial detection, including pathogens as well as fermentation microorganisms, using streamlined PCR-based methods

### Analyze with us

- Toxic metals, micro and macro elements (e.g., Ca, K, Na, P)  
AAS, ICP-OES, ICP-MS, C/N/S/X
- Element speciation analysis (e.g., As, Hg)  
LC-ICP-MS
- Species identification and microbial detection including pathogens (e.g., *Listeria spp.*)  
Automated nucleic acid extraction, thermal cyclers, real-time thermal cyclers
- Origin analysis  
Isotope ratio ICP-MS
- Color, proteins, phosphates, fats & active compounds  
UV/Vis
- Total organic carbon and total bound nitrogen  
TOC, TN<sub>b</sub>
- GMO analysis of food additives  
Automated nucleic acid extraction, thermal cyclers, real-time thermal cyclers

## Meat & Seafood



Regardless of laboratory conditions, we help manufacturers and processors of meat and fish products to ensure the fast and reliable analysis of relevant quality and food safety parameters.



### The challenge

Monitoring trace levels of harmful compounds in a vast variety of solid samples using highly sensitive and selective analytical tools including sample preparation techniques.

### The solution

Dedicated sample preparation techniques alongside a wide analytical portfolio to detect microbial, pathogenic, and inorganic food safety parameters very quickly.

### Maximize Your Profits with Timely Results

To avoid product wastage and lost profits, quick access to precise and accurate results is crucial for products with short shelf life such as raw meat, processed meat, poultry, fish, and other seafood. Monitoring the quality of animal feed keeps livestock healthy and ensures raw products of high quality.

#### Effortless analysis processes

- User-friendly operation of protocols and devices
- Efficient workflows
- Easy-to-automate methods
- Quick instrument readiness

#### Gain more precise and fast results

- Established techniques for elemental analysis
- Highly sensitive instrumentation for accurate trace element and elemental speciation analysis
- Accelerate product release process using PCR-based microbial detection within a few hours
- Analysis of multiple parameters simultaneously using combined and multiplex PCR on real-time PCR cyclers

#### Analyze with us

- Analytical sample preparation  
Digestion, extraction, lysis
- Toxic metals, micro and macro elements (e.g., As, Cd, Pb)  
AAS, ICP-OES, ICP-MS
- Element speciation analysis (e.g., As, Hg)  
LC-ICP-MS
- Species identification and detection of animal components (e.g., meat, fat, and bone meal) in food and animal feed  
Automated nucleic acid extraction, thermal cyclers, real-time thermal cyclers
- Hygiene monitoring by detecting microbes (e.g., *E.coli*) and pathogens (e.g., *Salmonella spp.*, *Campylobacter spp.*)  
Automated nucleic acid extraction, thermal cyclers, real-time thermal cyclers

## Produce & Grain



Profit from our easily adaptable and extendable methods. Gain quick and reliable results for a broad variety of samples to ensure the quality and food safety the consumer is looking for.



### The challenge

Accurate and fast analysis of quality, safety, and nutritional parameters across a vast variety of different food types, from seed to final product.

### The solution

A combination of analytical sample preparation technologies, multi-parameter analytical instruments and flexible automation options with scalable throughput capabilities.

### Ease of Operation with Scalable Throughput

Analytik Jena offers highly sensitive and multi-parameter analysis of seed, grain, rice, flour, bread and other processed grain products, vegetables, fruits, herbs, spices, legumes, and cannabis. With our wide application range we ensure you with reliable results for food safety and quality determination.

#### Best analytical performance

- Low limits of detection to ensure food safety
- High-throughput capabilities
- Flexible automation possibilities
- Adaptable instrument configurations for maximizing instrument utilization

#### Convenient access to many parameters

- Direct application support
- Customized method development
- Customized maintenance contracts
- Vast application database

#### Analyze with us

- Toxic metals, micro and macro elements (e.g., Ca, K, Na, P)  
AAS, ICP-OES, ICP-MS
- Element speciation analysis (e.g., As, Hg)  
LC-ICP-MS
- GMO testing and allergen detection  
Automated nucleic acid extraction, thermocycler, real-time thermocycler
- Detection of microbes and pathogens  
Automated nucleic acid extraction, thermal cyclers, real-time thermal cyclers
- Food pigments, chlorophyll, carotenoids, proteins, sugars, fats, and vitamins  
UV/Vis
- Analytical sample preparation  
Digestion, extraction, lysis

## General Food Analysis

We help you to efficiently analyze a large variety of food and agricultural samples spanning many key analytical parameters. Flexible instrument configurations allow scalable throughput and automation possibilities.



### The challenge

Cost-effective analysis of vastly different sample types providing optimal sensitivity, high precision and accuracy and high specificity of results.

### The solution

Multi-parameter analytical instruments with tailored configurations, scalable throughput and automation options, and exceptional analytical performance to achieve reliable results in food safety, authenticity, and quality control.

## Analytical Instrumentation That Suits Your Lab

Cost-efficiency, scalability, accuracy – Analytik Jena provides unique analytical solutions, they can be tailored to your laboratory specific needs. We help you to meet today's requirements and to be prepared for future challenges.

### Gain an economic advantage

- Low operational and analysis cost
- Easy-to-use analytical instruments
- Low maintenance requirements
- Minimal sample preparation
- Quick instrument readiness – ideal for shiftwork operation
- Scalable sample throughput, from low to ultra-high throughput
- Compact design: saves valuable lab space

### Rely on our analytical expertise

- Experts at your disposal
- Pre-installed methods and workflows
- Regulation compliance
- High robustness, precision, specificity, and sensitivity
- Customized method development
- Flexible automation options

### Analyze with us

- Metals, semi-metals, selected non-metals
- Element species
- Nanoparticles
- Color, food pigments, nutritional parameters
- Species identification of meat, dairy products etc.
- GMO analysis
- Microbial detection including pathogens
- Origin analysis
- TOC detection for cleaning validation of production and storage equipment
- Allergen detection

### Customer support

- Direct contact with Analytik Jena application specialists
- Customized service contracts
- Large application database

## Environmental Responsibility

With the aid of flexible and easy-to-use instrument combinations, we ensure accurate, precise and fast results for your environmental monitoring according to established methods.



### The challenge

Maintaining cost-efficiency and the quality of results for a high daily samples throughput while also complying with international and regional standards and regulations.

### The solution

Highly automated, user-friendly analytical instruments with accelerated analysis speeds and minimal maintenance requirements.

## Focusing on the Essential

Whether for wastewater, process water, effluents, solid waste, or soils, we help you to streamline your environmental analysis processes to be as simple and flexible as possible with minimal effort.

### Compliance and responsibility

- Take responsibility for your by-products and waste
- Comply with environmental regulations
- Ensure efficient and careful use of resources

### Maximize uptime

- Multi-purpose instruments for usage in QC and environmental analysis
- Effortless instrument setup change
- Method library for quick start after setup
- Automated process control (Self Check Systems)

### Analyze with us

- TOC, TN<sub>b</sub>
- AOX, EOX
- Eco-toxic heavy metals  
AAS, ICP-OES, ICP-MS
- COD, turbidity, NO<sub>3</sub><sup>-</sup>, NO<sub>2</sub><sup>-</sup>  
UV/Vis
- Microbial contaminations  
Automated nucleic acid extraction, thermal cycler, real-time thermal cycler

## Our Solutions at a Glance

Benefit from the advantages of our various methods and devices for food analysis. We offer compliance with relevant DIN, EN, ISO, EFSA, ASTM, FDA - standards, and other international and regional regulations.

Method	Device	Special Features	Suitable for
ICP-MS	PlasmaQuant MS series	<ul style="list-style-type: none"> <li>High sensitivity for detection of even trace element concentrations</li> <li>High-throughput capabilities</li> <li>Detection of small nanoparticles</li> <li>Highly accurate isotope ratio analysis</li> <li>Coupling with LC for speciation analysis</li> </ul>	<ul style="list-style-type: none"> <li>Food safety</li> <li>Food authenticity</li> <li>Environmental monitoring</li> </ul>
ICP-OES	PlasmaQuant 9100 series	<ul style="list-style-type: none"> <li>High spectral resolution to avoid common interferences</li> <li>Robust plasma for minimum sample dilution and reliable analysis of samples of any complexity</li> <li>Wide working range from traces to major levels</li> <li>Best-in-class trace element detection capabilities</li> </ul>	<ul style="list-style-type: none"> <li>Food safety</li> <li>Quality control</li> <li>Environmental monitoring</li> </ul>
AAS	contrAA 800	<ul style="list-style-type: none"> <li>Fast-sequential up to simultaneous analysis and best detection limits</li> <li>One lamp covering the elemental range of AAS</li> <li>Molecular absorption detectable (MAS) - determination of non-metals such as P, S and halogens</li> </ul>	<ul style="list-style-type: none"> <li>Food safety</li> <li>Quality control</li> <li>Environmental monitoring</li> </ul>
	ZEEnit series	<ul style="list-style-type: none"> <li>High matrix tolerance, superior Zeeman background correction</li> <li>Flexibility of applications with One + One atomizer compartment</li> </ul>	
	novAA 800	<ul style="list-style-type: none"> <li>Intelligent autosampler (overrange dilution, method of additions)</li> <li>Application flexibility with dual atomizer compartment</li> </ul>	
CV-AAS/AFS	mercur DUO plus	<ul style="list-style-type: none"> <li>Minimal detection limits for mercury</li> <li>Combination of AAS and AFS in a single device</li> </ul>	<ul style="list-style-type: none"> <li>Food safety</li> <li>Environmental monitoring</li> </ul>
C/N/S/X	multi EA 5100	<ul style="list-style-type: none"> <li>Matrix tolerance and robustness (double furnace)</li> <li>Interference-free TCI and TS, TN analysis</li> <li>Fastest horizontal analysis</li> </ul>	<ul style="list-style-type: none"> <li>Food safety</li> </ul>



Do you want to know how to benefit from these solutions?  
Get in touch with us directly.



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or e-mail [solutions@analytik-jena.com](mailto:solutions@analytik-jena.com)

Method	Device/ Kit	Special Features	Suitable for
Nucleic acid extraction	InnuPure C16 <i>touch</i> , CyBio Felix	<ul style="list-style-type: none"> <li>Automated nucleic acid extraction possible</li> <li>Medium and high sample throughput</li> </ul>	<ul style="list-style-type: none"> <li>Food safety</li> <li>Food authenticity</li> </ul>
Nucleic acid detection	Biometra TAdvanced, Biometra TOne, Biometra TRIO, qTOWER <sup>3</sup> CyBio Felix	<ul style="list-style-type: none"> <li>High-performance thermal cyclers for PCR or real-time PCR</li> <li>Fast and precise results</li> <li>High-precision block temperature control system</li> <li>Automation possible also for PCR and real-time PCR setup</li> </ul>	<ul style="list-style-type: none"> <li>Food safety</li> <li>Food authenticity</li> <li>Environmental monitoring</li> </ul>
UV/Vis	SPECORD PLUS	<ul style="list-style-type: none"> <li>High accuracy, including for low concentrated samples</li> <li>Wide range of accessories and additional cuvette position for high turbidity samples</li> <li>Multi-parameter instrumentation for a wide range of applications</li> </ul>	<ul style="list-style-type: none"> <li>Quality control</li> <li>Environmental monitoring</li> </ul>
	ScanDrop <sup>2</sup>	<ul style="list-style-type: none"> <li>Low lab footprint, fast detection, high-throughput in microvolume and standard cuvette</li> <li>Easy installation of accessories and intuitive touch operation</li> </ul>	
TOC/TN <sub>0</sub>	multi N/C series	<ul style="list-style-type: none"> <li>Wide-range TOC/TN<sub>0</sub> analyzer</li> <li>High throughput with automatic loop injection and intelligent rinsing</li> <li>Advanced particle handling and suitable for difficult matrices</li> </ul>	<ul style="list-style-type: none"> <li>Quality control (drinking water)</li> <li>Environmental monitoring</li> </ul>
AOX	multi X 2500	<ul style="list-style-type: none"> <li>Full method and configuration flexibility for AOX, EOX, POX, TX</li> <li>Maximum automation for AOX/EOX/TX methods</li> <li>Direct charcoal feeding</li> </ul>	<ul style="list-style-type: none"> <li>Environmental monitoring</li> </ul>



#### Headquarters

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Subject to changes in design and scope of delivery as well as further technical development.