



# ANALYTICS

## Agricultural Analysis

The Department of Agricultural Analysis focuses on agricultural practice. As reliable service partner it accompanies a broad client base. These include agricultural operations of different sizes and cultivation as well as agriculturally oriented institutions for research and development. The priority is on nutrient examination of soil samples. Comprehensive test series are processed with modern equipment having large lab capacity. Another key area of activity is the testing of harvest samples (e. g. cereal) to examine their quality. Proven procedures and determination methods are applied.

### ► Capabilities and Equipment

- Automated analysis of nutrient contents in soil according to VDLUFA and GLP conditions
- Determination of quality parameters in harvest samples
- Examination of plant samples and regrowing raw materials
- Atomic Absorption Spectrometer (AAS)
- Ion Chromatography System (IC)
- Total Organic Carbon Analyzer (TOC)
- Elemental Analyzer
- Analytical Continuous - Flow Analyzer
- Near-Infrared-Spectroscopy (NIR)
- Microwave Digestion System

Soil/Sediment



Plants

### ► Analytical Services (GLP)

We investigate the following parameters in different matrices:

#### Soil/Sediment

- Determination of soluble mineral nitrogen ( $N_{min}$ ) and sulphur ( $S_{min}$ )
- Basic soil examination: pH, phosphorus (P), potassium (K), magnesium (Mg)
- Humus determination ( $C_{org}$  by combustion and gas analysis)
- Soil type determination according to USDA
- Soil microflora: nitrogen and carbon transformation test, OECD 216/217 (GLP)
- Soil characterization (GLP): e.g. maximum water-holding capacity ( $WHC_{max}$ ), soil type (USDA), cation exchange capacity (CEC) and base saturation (BS), pH, TC/TOC

#### Plants

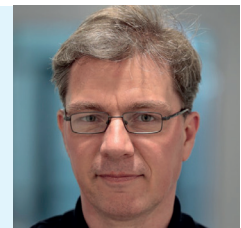
- Moisture, oil content and raw protein with NIR in rapeseed, wheat and barley grain
- Raw protein according to Kjeldahl and / or DUMAS (total nitrogen content)
- Grain-physical examinations such as thousand seed weight, hectolitre weight, sorting, ash of grain and ground products
- Germination capacity of grains by germination bed methods
- Macro and micro nutrients in plants

### ► Team

Expertise and motivated lab team covering GLP testing.

### Your contact:

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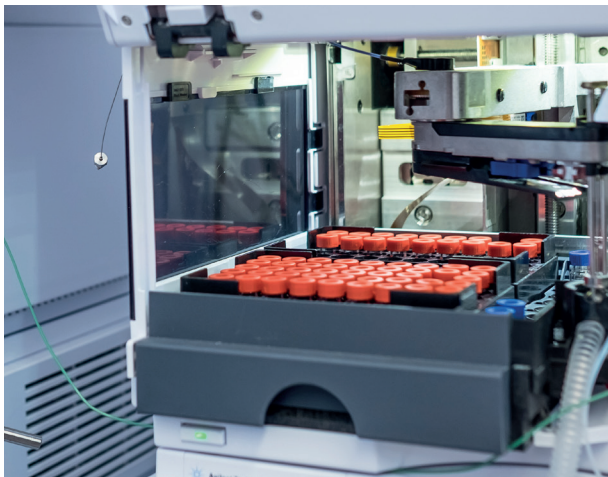
## Residue Analytics

Our dedicated team of professional analysts supports ecotoxicological lab and field studies, in close collaboration with in- and external partners. We analyze residues of plant protection products in different matrices with state-of-the-art instruments in our modern laboratories.

We offer customer-specific solutions in the areas of method development and validation, residue (degradation) behavior, content determination of formulations and characterization adsorption/desorption processes.

### ► Capabilities

- More than 300 m<sup>2</sup> of modern lab space for sample preparation and analysis
- Numerous HPLC systems coupled with various detector types
- Triple quadrupole mass spectrometers (LC-MS/MS systems) from different vendors
- GC-MS analyses for volatile compounds
- Modern equipment for different sample extraction and preparation techniques



### ► Analytical Services (GLP)

- Supporting analyses for field and laboratory studies on plant protection products:

#### for example tests on

- Aquatic organisms
  - Pollinators
  - Non-target plants
  - Soil organisms
  - Soil degradation
  - Crop processing
- Analytical method development and validation for pesticide residue tests and application controls (SANTE/2020/12830)
  - Active ingredient of plant protection products (SANCO/3030/99) / Certificate of Analysis (CoA)
  - Selected CIPAC / OECD methods for determination of physico-chemical properties
  - Chemical testing according to REACH (EC No. 1907/2006) / UVCB substances
  - Tests on chemical and physical compatibility of tank mixtures
  - Storage stability tests (OECD 506)

### ► Customized analytical solutions

In many cases analytical data can be provided by applying standardized methods, but sometimes individually developed methods are needed for accomplishing special analytical tasks. For special analytical services, please contact us.

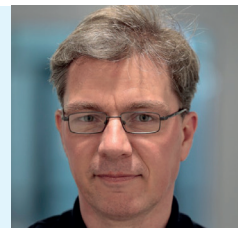
### ► Team

Experienced team of study directors and lab technicians with backgrounds in chemistry, biochemistry, biotechnology and microbiology.



### Your contact:

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