



INNOVATION



EFFICIENCY



QUALITY

SEED AND CROP

# MAKING THE DIFFERENCE

SUSTAINABLE & INNOVATIVE SOLUTIONS



## FIELD AND ANALYTICAL SERVICES THROUGHOUT THE AGRICULTURAL PRODUCTION CYCLE FROM R&D TO HARVESTING.

Sustainable agriculture is based on a healthy environment, economic profitability, and social and economic equity. For upcoming generations, a growing world population with changing food habits is faced with limited arable land and finite water supplies.

Agricultural production needs innovation to provide new and better solutions with better inputs (e.g. farming technology, information, fertilizers, seeds and crop protection) and farm management in production.

To provide solutions for this highly specialized sector, we have developed a unique package of added value services. Ag science companies, plant breeders, seed producers, agro chemical companies (supplying pesticides, fertilizers, growth regulators), bioproducts companies, distributors and ultimately farmers can benefit from our comprehensive seed and crop services.

### SGS BENEFITS

-  Global network
-  State-of-the-art laboratories
-  Technical competence
-  Rapid turnaround time
-  Harmonized procedures



### CONTACT US

-  [seed.crop@sgs.com](mailto:seed.crop@sgs.com)
-  [www.sgs.com/seedandcrop](http://www.sgs.com/seedandcrop)
-  [SGS Agriculture & Food](#)

# STATE-OF-THE-ART TECHNOLOGY TO OPTIMIZE YIELDS

Improve productivity, maximize crop yields/improve farm profitability, manage fertilizer and irrigation application and keep costs under control with our field preparation and fertility management services. Employ our expertise and state-of-the-art precision farming technology, laboratory analysis and applied crop consulting. SGS can help you to develop a scientific understanding of your fields to optimize your efforts.

## **SOIL CLASSIFICATION**

A scientific understanding of soil composition and soil pedology means you can make informed decisions on which crops to plant to achieve the highest quality and yield. With this data we can recommend crop types, tillage methods, drainage/irrigation requirements and fertilizer needs.

## **PLANT /LEAF TISSUE TESTING**

Testing from emergence of a crop through its first six weeks provides a useful indication of nutrient uptake and helps to determine fertilizer application. Samples prior to maturity can be used to indicate late or specific nutrient needs with a positive effect on the quality of the crop. Tissue testing at the full grown and reproductive stages can quantify nutrient uptake and be used to determine fertility requirements for the following season.

## **GPS MAPPING**

Precision sampling, made possible with GPS mapping using drones and satellites, allows you to assess and precisely manage soil fertility, thereby improving crop yields while also reducing the costs and environmental impacts of fertilizers.

## **NEMATODE MAPPING**

Diagnose possible anomalies in fields using satellite images, thereby enabling the identification and measurement of the species causing damage. We can also conduct sample collection of soil, plant tissues and roots to determine all types of nematode active on a specific site.

## **FERTILIZER FIELD TRIALS**

Before going to market, you need to ensure your fertilizers have been tested to the highest standards, meet regulatory requirements, and are suitable. Our global network of field trials stations offers supervised field trials under relevant geographic and climatic conditions to ensure compliance under all relevant conditions.

## **WATER MANAGEMENT**

Measure and understand water storage capacity across fields and farms to improve crop performance with our water management services. Prevent puddles, and erosion, optimize inputs and water with our specialist services for irrigation, water mapping and scientific assessment of infiltration speeds and moisture retention.

## **FERTIGATION AUDITS**

Identify deviations in your irrigation system and make corrections based on our data to optimize inputs such as water and fertilizers, to make sure they are distributed evenly.

## **FERTIGATION MONITORING**

Our fertigation monitoring enables you to dose additional nutrients and fertilizers to plants, or to correct nutrient deficiencies in a proactive and timely manner. Our experts undertake a program of plant tissue, soil and water (irrigation solution) testing to ensure the best growing conditions are achieved.

## **PRECISION FARMING**

Combine our expertise in all these services, and we can offer a seamless precision farming service that gives you access to all the information you need to make effective and successful decisions about crop production and sustainability. Employ our highly specialized team of agronomists to support your operations. Working on site in different regions, with many crops, soils and climates we have the expertise to combine all these technologies and services to deliver the right information at the right time and place.





## SEEDS

# SAFEGUARD THE QUALITY OF YOUR SEEDS

Whether you are developing new seed products, researching seed health, or producing commercial seeds, we offer a broad range of sampling, laboratory testing and research services to assess, optimize and improve the quality of your seed products.

### SEED SAMPLING

We sample seeds, in the field, storage, during transportation for purposes including quality, identification and certification. Our sampling analysis services can help you to get the data you need for informed decision-making, to identify issues quickly and efficiently, as well as to verify quality and take action as required.

### SEED TESTING

Ensuring the health and quality of your seeds is central to the success of your business. Our comprehensive seed testing services accurately assess the quality and health of your seeds, and can also identify the presence of any genetically modified organisms (GMO).

### IP TRACEABILITY

Address issues of consumer confidence and regulatory compliance with our identity preservation (IP) traceability program. By tracing seed origins and conducting audits in fields, warehouse, during transportation and storage, we can help you to reduce your trade risks and add value to your products. Where applicable, this program is supported by DNA/RNA monitoring on seed traits.

### FIELD TRIALS

Before taking a new seed variety to market it must be tested to the highest standards. Our global network of GLP and GEP accredited field trial stations offers the widest range of geographic and climatic conditions, as well as our expertise in regulatory compliance services.

### SEED TREATMENT

SGS is an accredited certification body for both ESTA and Heubach CoP. We can help you to demonstrate the compliance of seed treatment facilities and dust testing laboratories with:

- ESTA (European Seed Treatment Association) Certification – verifies good practice across the whole seed treatment process, from testing the stability of the treatment recipe through to the packaging and storage of seeds
- Heubach Code of Practice (CoP) Certification – is the certification of Heubach laboratories providing dust testing services

### ISTA CERTIFICATION

Ease the process of exporting seeds worldwide with certification from the International Seed Testing Association (ISTA). We can ensure that your seed shipments are tested in accordance with ISTA rules and certified to the appropriate legal requirements. We also run ISTA seed sampling and provide training for proper ISTA compliant seed sampling procedures.

### SEED LABORATORY RESEARCH

Develop new and improved seed products and comply with all relevant quality and safety standards. Consult our seed lab research specialists on molecular marker assisted seed breeding services, quality control measures in seed breeding and production based on standard testing in germination, herbicide resistance and KASP/PCR/ELISA/NGS investigations.

### SEED QUARANTINE

Failure to implement effective quarantine can lead to the import of non-native pests and plant diseases that have the potential to damage local crops. Our state-of-the-art, post-entry quarantine facility provides the security to import new materials safely into Brazil. The laboratory is accredited by local Ministry of Agriculture to do quarantine for several crops, conventional and transgenic.

# GET YOUR PRODUCTS TO MARKET EFFICIENTLY

Our contract research services facilitate the development of new plant protection products. Supported by our expertise in phys/chem., 5-batch, ecotox. and residue laboratory testing as well as efficacy and product safety field trials project managers and study directors help you to get your innovations to market efficiently.

## BIOPESTICIDES DEVELOPMENT

Our experts can advise you on the most appropriate qualification route for new biopesticide products, develop the relevant methodologies and run tailored testing. We conduct the following studies to facilitate registration; effects on non-target organisms, ecotoxicology, product identity/characterization, shelf-life and efficacy. In a sector with limited harmonization, we help you to select methodologies that can be applied and/or adapted for global use.

## FIELD TRIALS

Test new fertilizers, biostimulants and plant protection products to the highest standards, in a variety of locations. Our global network of GLP and GEP approved field trial stations facilitate supervised trials under the widest range of geographic and climatic conditions. In addition to providing research and development services, our demonstration trials can confirm the safety and suitability of products in order to compare agrochemical products on a large scale.

## GMO STUDIES

Before new traits reach the market, several studies must be conducted to prove a GMO is effective and safe, for the environment and for consumption. We are able to conduct studies such

as composition, protein expression, agronomic, efficacy, residue and non-target organisms (NTO), under GEP/GLP standards for field and lab phases.

## RESIDUE STUDIES

We conduct residue studies in food, feed items or processed food items for dietary safety as well as exposure studies to address environmental, ecotox. or operator safety aspects. With our extensive network of GLP residue laboratories we support method development and validation as well as residue analysis in any kind of matrix with the most recent technologies. Our residue programs involve various application techniques, sampling, sample shipping, processing and sample storage. We can also take on complete studies or partial aspects of any project. Our experts can advise and support you on the testing scope, site selection, study plans and amendments, critical phase management, on-site inspections, reporting and preparation of draft summaries for the residue dossier.

## ENVIRONMENTAL FATE STUDIES

Test and record the behavior of your pesticides under controlled laboratory and supervised field conditions. Our environmental fate studies, conducted under GLP, provide the independent data you need to assess your products properly, and ease the registration

process. We provide studies on soil dissipation/accumulation, dust/spray drift, field leaching, run-off and drainage and ground-/surface water monitoring.

## ECOTOXICOLOGY

Ecotoxicology studies address the effect against non-target organisms in soil, sediment, the aquatic environment, birds and mammals as well as pollinators. Organisms are exposed stressors, single and multiple, and during new product development this concern need to be addressed properly in a standard regulatory laboratory as well as in higher tier field testing. Our experts will help you to set up the proper testing strategy based on your product type, product properties and intended use pattern.

## FIELD INSPECTIONS/CROP SCOUTING

An integral part of your integrated pest management program, field inspections/crop scouting identifies areas of damage and crop stress. They also play an important role in precision farming, allowing you to catch problems early and address them in a timely and effective manner. Today, these inspections can include many types of sensors and imaging, for example soil moisture/conductivity probes, weather stations, drones, NDVI, and satellite imaging.





## HARVEST

# MANAGE PRODUCTION AND YIELD EFFECTIVELY



As the growing season reaches its climax, and crops are harvested, you agronomists offer a range of services to help with production and post-harvest planning, harvest monitoring and quality maps.

### YIELD ASSESSMENT

We offer a comprehensive and independent yield assessment service in the growing season and pre-harvest. Throughout the year our agronomists work on your site and prior to harvest carry out yield assessments that give you a quantitative evaluation of the yield to come. This information helps you to manage production effectively and plan post-harvest operations.

### HARVEST MONITORING

Optimize your operations through harvesting operation monitoring. Wherever your harvesting takes place, our global network ensures that our experts can be on-site to conduct inspections, monitor and measure fields, issue daily reports (including details of the harvested area, estimated yield and destination), and track your produce.

### QUALITY MAPS

Every year we perform analyses of thousands of samples of new crops to provide customers with a clear understanding of crop quality. Our

inspectors follow the harvest wave and take samples directly from farms/storage sites, thus delivering information about quality per country or region, long before the grains are in port. Data is accessed by interactive map.

### COMPLIMENTARY SERVICES

SGS also provides services through the production value chain:

- Barter trade related services, such as crop monitoring
- Market research services – strategic data collection and processing
- Agriculture audits – farm/GAP, sustainability, sub-licenses, IRM, biotech stewardship, social responsibility, seed treatment plants, etc.
- Brand protection and supply chain integrity solutions for agrochemicals and seeds
- Project finance/investment in farmland/agricultural projects – technical due diligence, implementation monitoring, etc.



# DIGITAL SOLUTIONS CAPTURE THE DETAIL

Innovation is at the heart of everything we do. In the 21st century this means using technology and technical solutions to deliver the best services to support the seed and crop industry.

## UNIVISTA AGRO

Plan, monitor and visualize every aspect of farm activity to improve profitability and efficiency with UNIVISTA. Technical field monitoring, including parameters such as pests, diseases, weeds, rainfall distribution patterns and many more, enables creation of productivity maps, better operational management, phytosanitary control verification and agile decision making. A secure platform and smart syncing to handheld devices puts the right information in the right hands – in the office or in the field.

## PRECISION GATEWAY

Improve decision making and sustainability with Precision Gateway, SGS's farm management system. Processed GPS based mapping, NDVI,

moisture, irrigation scheduling and soli/leaf/water analyses, weather, soil and chemical data, water sampling and analytical results deliver real-time access to all farm information. Precision Gateway gives data control to the user, it enables better insights to be derived from passive data, and concise actions to be determined and executed.

## MORE

Our internal contract research field trials platform facilitates and eases the execution of trials by ensuring clear and consistent data on protocols, treatments and assessments is provided in a structured way. MORE draws all communication into one secure system and supports the delivery and communication of the planned schedule

of tasks. Trials can be easily monitored, and alerts are raised for technicians and project managers to ensure actions are taken promptly and recorded correctly.

## TRANSPARENCY-ONE

Discover, analyze and monitor all suppliers, ingredients and facilities in the supply chain. SGS's Transparency-One uses real time data to reduce risk, identify ingredient origins and ensure compliance.

Cutting edge cloud-based technology and SGS's global experience in testing and certification, allows manufacturers to check supplier certification, reduce risk, respond quickly and effectively to potential crises, provide customers with up-to-date information, and gain consumer loyalty and trust.



## CONTACT US

-  [seed.crop@sgs.com](mailto:seed.crop@sgs.com)
-  [www.sgs.com/seedandcrop](http://www.sgs.com/seedandcrop)
-  [SGS Agriculture & Food](#)

[WWW.SGS.COM](http://WWW.SGS.COM)

WHEN YOU NEED TO BE SURE

