

TRACEFOOD'06

International Conference

**TRACEABILITY AND MONITORING
IN FOOD PRODUCTION**

TRACEFOOD'06

22-24 February 2006
Warsaw, Poland



Deutsch-Polnisches Jahr
Rok Polsko-Niemiecki
2005/2006
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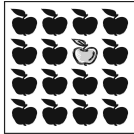


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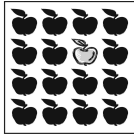
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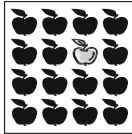
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Schedule of the Conference

22.02.2006 (Wednesday)	
12:30	Transportation from the hotel to conference site
13:00 - 13:45	Registration
13:45 - 14:00	Welcome address
14:00 - 15:15	<u>Project meeting part 1</u> Introduction to the project, portrait of partners <ul style="list-style-type: none"> • PIAP presentation • FH Eberswalde presentation • AGROLAB presentation • PROGIS presentation
15:15 - 15:30	Coffee break
15:30 -16:15	PIAP laboratories tour
16:15 - 17:45	<u>Project meeting part 2</u> Discussion on training highlights for a Polish-German regional training cluster on agrosociences – next activities related to training
18:00 - 20:00	Get together party
20:15	Transportation from the conference site to the hotel

23.02.2006 (Thursday)	
09:00	Transportation from the hotel to conference site
09:30 -11:00	<u>Conference session 1</u> <ul style="list-style-type: none"> • EU Legislation for food and feed hygiene, and its impact on process management (risk-based inspection system) • Challenges of an administrator for regional services • EU Legislation for CAP (cross compliance)
11:00 - 11:15	Coffee break
11:15 -13: 00	<u>Conference session 2</u> <ul style="list-style-type: none"> • EurepGAP-Requirements for documentation and record-keeping • DokuPlant LT – Basic software for documentation • MR DokuPlant – an integrated solution
13:00 - 13:45	Lunch
13:45 - 14:45	<u>Conference session 3</u> <ul style="list-style-type: none"> • Data transmission in food monitoring and traceability Galileo-Based System for Enhancing Livestock Tracking • Automatic Number Plates Recognition Systems as a Tool Supporting Monitoring of Food Production and Distribution Process • The Products and the Equipment of the Intrinsically Safe Monitoring Systems for Grain Elevators
14:45 - 15:00	Coffee break



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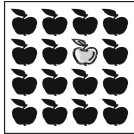
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15:00 - 16:00	Conference session 4 <ul style="list-style-type: none">• PH as a Very Important Element of The Food Quality Estimation• Significance the Research Studies During the Designing Milk Turbine Counter• Joint opinion on EU proposal, list of next activities, and of new partners, agreement on report for BMBF/DPJ• Starting discussion on EU RP 7
16:00 - 16:15	Closing remarks
16:30	Transportation from the conference site to the hotel
18:45	Transportation from the hotel to conference site
19:00-22:00	Banquet – Restaurant “ Chlopskie Jadlo”
22:15	Transportation from the restaurant to the hotel

24.02.2006 (Friday)

9:00	Transportation from the hotel to the Old Town
9:30 -13:00	Social program
13:15	Transportation from the Old Town to the hotel



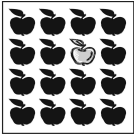
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LIST OF ABSTRACTS

1. E. Kramer: "EU Legislation for Food and Feed Hygiene, Requirements for Process Management and Traceability in Primary Production"
2. E. Kramer: "Implementation of the Common Agricultural Policy of the EU (Cross Compliance)"
3. R. Szewczyk, K. Rzeplinska: "Data Transmission in Food Monitoring and Traceability"
4. M. Andrzejczak "Galileo-Based System for Enhancing Livestock Tracking"
5. A. Kobosko, Z. Pietrusiński: "The Products and the Equipment of the Intrinsically Safe Monitoring Systems for Grain Elevators"
6. R. Dunal, W. Jeziorczak: "Automatic Number Plates Recognition Systems as a Tool Supporting Monitoring of Food Production and Distribution Process"
7. A. Nowicki "Equipment for Leakages Testing in Plastic Pieces in Automated Production Lines"
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11. A. Kuschke "Partner Search Service and Project Support for International Research, Development and Business Co-Operations"
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EU LEGISLATION FOR FOOD AND FEED HYGIENE, REQUIREMENTS FOR PROCESS MANAGEMENT AND TRACEABILITY IN PRIMARY PRODUCTION

E. Kramer

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Farmers are required to comply with legal requirements such as for food safety, traceability and good agricultural practice. Observing of relevant standards should be demonstrated at many levels, for example within the implementation of the reform of the Common Agricultural Policy (CAP) since 2005. In addition, the new EU legislation package for food and feed safety has been set into force in 2006. Furthermore, programs for combating salmonella and other zoonoses in herds of chicken, turkeys and pigs shall be introduced in 2007.

In general, the named legislation targets at a harmonization of law at European level. In a chain-spanning approach

- the concerns of consumers, in particular a hygienic consumer protection
- the good trading practices for food and feedstuffs
- animal health, animal protection, plant health and the environment

shall be maintained at a high level and improved where required. The total system of food and feed safety is based on following four factors:

1. on minimum requirements for hygiene as constituted in legislation
2. on the inspection of complying with these requirements by authorities
3. on the implementation of programs, and respectively action plans for food safety by the companies, incl. farmers
4. on the implementation of procedures which are based on HACCP principles by the companies, incl. farmers.

Supporting guidelines for good process and hygiene practices, for the implementation of HACCP principles as well as for avoiding potential hazards shall be supplied by the food processing industries. "New" concepts for food safety will become mandatory that way, even for primary production. The responsibilities of the state and of the economy are clearly divided in this process.

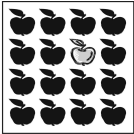
In the new legislation, there are rules for hygiene, bookkeeping as well as special guidelines for primary production which will be presented.

As well, traceability is in the responsibility of the food business, of the farmers. The food business companies are to adopt procedures and systems for indicating the origin of products, incl. the originator of complaints. Procedures and systems should be designed to ensure a short-term, targeted and precise withdrawal of unsafe food or feed throughout all steps of the value chain. With this, one focal point is on the effective and precise information of authorities and consumers.

In primary production, there still exist unsolved problems for traceability such as for:

- bulk goods (silos, protraction in continuous processes)
- different charges of e.g. pesticides which are applied on a certain field, and accounting for this during harvest
- individual feed charges for e.g. dairy cows, destination of milk
- traceability systems for bulky feedstuffs

The well established good agricultural practices for the named scopes have been rendered more precisely by the EU law, and have become mandatory, even relevant for criminal law and sanctions. Consequently, product liability has become much more relevant for the primary production sector. Due to the shifting of the burden of proof for e.g. non-complying with legal requirements or product standards, considerable extra costs may occur. Therefore, feedstuff operators are required to assure a monetary fund for covering costs, which may occur with withdrawal, treatment or even disposing unsafe feedstuffs and produced food. The farmer is required both to take notice and to comply with legal requirements for management, self-control, documentation, and recordkeeping as well as to demonstrate the compliance with these requirements. The authorities will control this compliance on the basis of a risk-based approach. Both the requirements and an approach for a risk based inspection will be presented.



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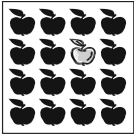
IMPLEMENTATION OF THE COMMON AGRICULTURAL POLICY OF THE EU (CROSS COMPLIANCE)

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According to the Common Agricultural Policy of the EU farmers should meet basic requirements concerning farm management and preservation of agricultural land. There are 19 associated individual directives and regulations containing rules for:

- the protection of the environment and of soils
- the registration and labeling of animals
- the use of pesticides
- the use of veterinary drugs
- animal diseases and epizootics (epidemics), and for the prohibition of certain feedstuffs
- animal protection
- the husbandry of calves and pigs

A detailed explanation (in German) of the CAP regulations is available in the Internet www.agrarrecht.de/download/GAP_LMH_Recht.pdf



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DATA TRANSMISSION IN FOOD MONITORING AND TRACEABILITY

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Cost-effective and reliable data transmission is critical for the successful implementation of all industrial monitoring systems. It is even more important in the case of monitoring systems for food traceability, food production and transportation due to the fact, that in the case of such systems, measured and provided data have to be acquired on the large area – very often from mobile terminals.

For proper development of data transmission sub-system different methods have to be considered. This paper presents advantages and disadvantages of data transmission via cable lines, low power radio, GSM network, RFID as well as satellite. It should be highlighted that new technologies creates possibility of extremely cost effective data transmission and tracking solutions especially suitable for tractability. Moreover, application of multimodal (redundant) data transmission methods gives possibility of increasing reliability of data transmission.

Possibilities of application different methods of data transmission will be considered on example of practically utilized monitoring systems. As a result general guidelines for implementation of data transmission in food monitoring and traceability will be presented.



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GALILEO-BASED SYSTEM FOR ENHANCING LIVESTOCK TRACKING

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The latest EU regulations concerning livestock tracking are a response to political pressures on establishing more strict food laws. The driving force for changes were the BSE in cattle disaster, the scare of dioxin poisoning from fish and, more recently, the outbreak of avian influenza in several European countries. In January 2002 in EC 178/2002, EU laid down the general principles and requirements of food law, established the European Food Safety Agency (EFSA) and sets out new food safety standards. By the 1st January, 2005, all European food and feed business operators, including primary producers, must have systems and procedures in place to identify from whom these businesses have been supplied (with a food, a feed, a food producing animal, or any substance intended or expected to be incorporated into a food or feed) and to whom their products have been supplied (i.e. one up, one down traceability).

Moreover, EU commission decided that ISO 11785 standard provides the technical basis for automatic tracking of animals and each country shall install a central database to store all data on individual animals, such as the identification code of the animal, month and year of birth, breed and genotype, identification code of holding, transport history, etc. The Legislation is expected to become effective from 1 July 2003 with both simple visual and electronic ID tags acceptable, followed by a transition phase to make RIFD tags mandatory by 2006.

Therefore tracking is one of the most important problems in food safety. There are many solutions to real time tracking of livestock but a few of them exploits satellite technology.

Galileo is a satellite radio navigation system. It is based on the emission from satellites of signals indicating the time extremely precisely. This enables to determine position or location of any moving or stationary object (e.g. a herd of cattle) to within one meter thanks to a small cheap individual receiver.

GALILEO is based on a constellation of 30 satellites and ground stations providing information concerning the positioning of users. There will be four kind of services offered by Galileo system: Public services, Public Regulated Services, Safety of Life Services and Public Restricted Services. In Public Regulated services there will be a guarantee continuity of service provision, signal integrity and high degree of precision.

Galileo system will allow farmers and food producers track their livestock more efficiently. In proposed solution transponders linked to a central database will trace livestock and products at all stages of their production, preparation, transport and marketing. This will improve farmers' management of direct aid.



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THE PRODUCTS AND THE EQUIPMENT OF THE INTRINSICALLY SAFE MONITORING SYSTEMS FOR GRAIN ELEVATORS

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Measurements "PIAP", Al. Jerozolimskie 202,
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Temperature monitoring systems for grain elevators perform very important task. They maintain optimal microclimate parameters, below critical values which might cause self grain ignition and explosion in storage.

Industrial Research Institute for Automation and Measurements in Warsaw has developed the temperature monitoring system based on Dallas Semiconductor 1-Wire network. The system uses Dallas intelligent temperature sensors, which assure resolution of 9 to 12 bit and accuracy of $\pm 0,5\%$.

These systems are applicable to grain elevators and cooperation objects in the same storage, for example: silos batteries, horizontal storages and others. In these large-area objects there are many independent computer stations cooperating with the central station.

The paper presents the extended intrinsically safe systems of temperature monitoring developed in PIAP, which use heavy duty temperature cables with intelligent sensors. The systems allows to transmit the measuring date by radio and by INTERNET.

Application tests have confirmed advantages of the intelligent sensors and their usefulness in the temperature monitoring systems and particularly: accuracy, reliability, facility for intrinsically safe systems, low cost etc. There is possible to monitor the other parameters of environment via 1-Wire net as well.



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AUTOMATIC NUMBER PLATES RECOGNITION SYSTEMS AS A TOOL SUPPORTING MONITORING OF FOOD PRODUCTION AND DISTRIBUTION PROCESS

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ANPR (Automatic Number Plates Recognition) is a modern computer technology based system developed for identification of cars based on their number plates. Currently ANPR systems are commonly used in many countries of European Union (UK is one of the world leaders), USA, Australia for monitoring of traffic in the city, car parks, airports, toll collect highways. The article describes a new potential usage of this technology within a food production and distribution. The author presents advantages of usage of ANPR technology and describes both software (CARBER) and hardware (SPIKE™) solutions.

ANPR systems automatically read number plates of vehicles involved in food production process that enter, move around and leave the monitored area. Number plate recognition takes place in well-illuminated places such as entry / exit gates with standard CCTV cameras, while specialized IR cameras (using infrared spectrum) are used to ensure proper recognition in limited visibility situations. The recognition can be performed with stationary cameras connected to centralized computer systems or mobile standalone devices installed temporary for inspection purposes. All acquired data, including vehicle number, date, time, camera ID and vehicle photography, is stored in a database and accessible by all interested parties. Gathered data is a source of information for decision takers, food makers, distributors, logistic companies.



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EQUIPMENT FOR LEAKAGES TESTING IN PLASTIC PIECES IN AUTOMATED PRODUCTION LINES

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02-486 Warsaw, Poland

Many industrial and food productions systems required hermetic packages. It has to be protected against of pouring, emission to the environment, as well infiltration of the microbes from external environment. Simultaneously the package should be cheap, and comfortably for use.

In nowadays most popular are packages made from plastic injection moulding materials. Manufactured turn buttons, caps, snap fasteners, containers as well as many others, has various contractions and perforations. During productions, as special in injection process could be formed determined defects, which can effects on leakproof. For quality assurances reasons in packages, these products should be testing as well as segregate during production process.

For realization of this task in ESCO was designed device for fast testing – HV- DETECTOR, assembled from:

- high voltage generator HV 0...15kV
- measurement configuration and current detection
- control systems

Man idea of this device is based on the ionization current. In testing detail are putted probes surrounded the surface. Probes are connected to voltage HV+ and HV-. If the measuring detail is defective – has got leakages or substandard contacting, there will be flow of ionization current.

This devices was tested in cork manufacture- VIKI PLAST.



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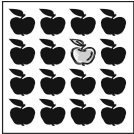
SIGNIFICANCE THE RESEARCH STUDIES DURING THE DESIGNING MILK TURBINE COUNTER

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02-486 Warsaw, Poland**

Designing process of each new construction of measuring device is very complex and require thig collaboration specialist from many areas of engineering sciences. From the reason, that research are one of the most popular, basics techniques of data verification for chosen solutions, their time factor often has large impact for overall operating time (from idea to manufacturing), what can be factoring for financing. The wage of this problem is growing up, when the projecting measuring device will be one pecace of the technological system, servant for food production for example in milk production.

Inseparable element of construction each new technology for flowmeters as well as counter device for liquid volume is taking into consideration pervious (in parallel or made with advance) research study results.

In this paper are presented main idea and rules applying in milk turbine counter together with shortly described study of durability and operating performance, Besides this is described the influence of results chosen solutions applied in turbine milk device.



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PH AS A VERY IMPORTANT ELEMENT OF THE FOOD QUALITY ESTIMATION

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02-486 Warsaw, Poland

One of the major cause of food quality control is a keeping microbiological safety and a creation the best conditions which enable using the microbes in industrial processes. Not keeping microbiological safety may cause food's destruction by microorganisms like bacteria, virus, mildew and fungus. Microbiological damage depends on type of organism, type of food, temperature and another agents. One of this agents is a pH.

pH measurement is used not only to ensure food safety against spoilage and creation advisable conditions to do metabolic microbes' process. It is criterion of raw products selection and acceptance them to use in production. It is a factor to determine completion time of a given phase of production. That is why pH measurement is very important at the beginning, during and at the end of production process.

Paper presents the common technical problems connected with pH measurements in food industry as well as the results of investigation carried our on both milk and yoghurt stored in different conditions. The results indicate, that measurement of pH can help in estimation of food quality parameters.



FOODTRACEABILITY AS PART OF AN INTEGRATED AGRO-SOFTWARE TECHNOLOGY

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Tel: +43 4242 26332, Fax: +43 4242 26332 7**

PROGIS Software AG is one of the very few European GIS developing companies with focus on agriculture, forestry and ecology. Based on WinGIS (the brand name of the geographical information system) and the agricultural map either for a farmer or a region, more than 25 applications have been generated. This technology, called AGROOffice for machine- or farmer cooperatives, single farmers, the food chain or the agro- forestry logistics, for in depth precision farming use, covers the complete agro-food area.

Trace ability became obligatory according EU food legislation from 1.1.2005; Documentation of the farm activities is the base layer that must be provided when someone wants to trace back till to farms according the EU "farm to fork" legislation. With DokuPlant or AGROOffice you can trace back, with WinGIS as add on GIS tool you can geotrace back!

With intelligent software these solutions can be set up in any country of the world together with local partners within a few months.

But documentation is only one element of an integrated solution along the fields. For the farmers it would be boring, complicated and also risky which regards their data security to document different species towards several buyers internet platforms, subsidies towards a government solution, to do field-calculation with another software, nutrient balancing and mapping again with other solutions. With the PROGIS technology approach all activities on the farm will be done with one single click "where is growing what" with GIS integration, a time management tool and an expert database (abt. 90000 elements incl. fertilizer, herbicides, machines, costs, crops, methods etc.) - modified country by country with local partners.

The software can be used by a single farmer as end-user solution or by a public or private consultant to build up advisory services throughout the whole country/region. Due to the modularity of the system an excellent cost-value ratio is given.

Based on this platform with further enhanced models, logistics is done from cultivation till harvesting. A central installed GIS handles all fields within a region. At harvesting an SMS with route optimised daily work is sent to a mobile GIS solution. When harvesting and emptying the harvester and set the lot of sugar-beets, the coordinates taken from an integrated GPS and the weight taken from a machine interface is transmitted to the central GIS so that optimisation of trucks for transport to the factory can start. Further with additional modules precision/smart farming is done in cooperation with tractor-machinery- and hardware-producers with all its positive impact for cost and ecology optimisation.

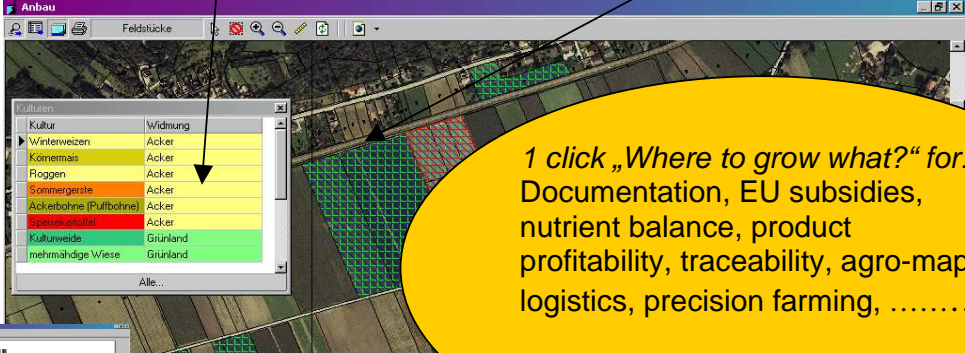
Virtual farming is a new model to overcome the European farm structure and to find solutions as they are under development and test cases in different countries (land consolidation projects with government units).

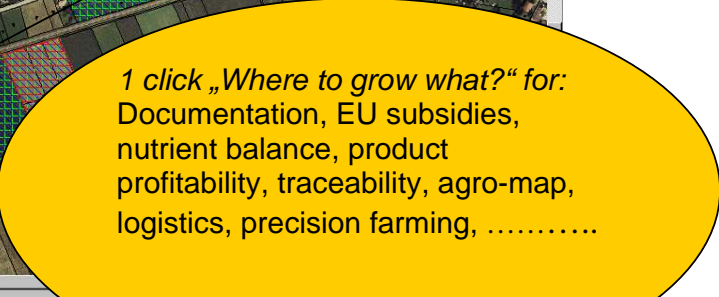
Environmental planning and rural area planning in cooperation with public and private European agro-consult organisations.

Other applications available are forest-inventory, water- and wastewater-pipe- lines, smart communities, sensor integration (meteo, water, soil) etc. or customized applications on demand.

90000 data for fertilizer, herbicide, machines, rops, methodsetc. including costs
– **EXPERT SYSTEM**

Orthophoto w/wo cadastre as base layer for maps; OO(geo)db WinGIS





EU subsidy form

Nutrient

profitability calc

Relational database for activities, db-Export

Time-management for planning and documentation, activities linked

..... but use the software or addon modules also for:
 forestry, pipeline management (water, wastewater), irrigation, community management, (meteorology)-sensors-link, ecology planning, environmental planing, rural

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PARTNER SEARCH SERVICE AND PROJECT SUPPORT FOR INTERNATIONAL RESEARCH, DEVELOPMENT AND BUSINESS CO-OPERATIONS

Engineering and Consulting Bureau Kuschke specialises in - among other things - professional partner search for R+D+I and business co-operations as well as initiating projects, design and management accompaniment. Our services include: quality research, development, innovation and business consultation, project idea assessment and evaluation of realistic chances of success, strategic co-operation partner search and selection of partners, initiation of co-operating partners contacts, assistance to the project team in preparing the ground for a successful co-operation concept developing and proposal project writing (FP6, FP7 and other national, regional and EC funded programmes), information, project and quality management, strategic piloting and coordination as well as, institution, company, project and product promotion. Our customers are universities, research institutes and centres, CoE, SMEs and various economic interest groups, business-and-innovation support centres and other relevant players.

*...in this way
you will get new co-operation partner faster,
you will have better chances for successful projects,
your business contacts will become broader...*

Specific consultation of problems before starting of co-operation between research institutes/centres and companies, including small and medium enterprises (SMEs); supporting groups of scientists and companies in assessment and realization of suitable co-operation and marketable project concepts (evaluation, analysis of critical points, etc.

Active purposeful search for suitable co-operation partners based on the detailed partner required profile; information processing; consultation; ascertainment. Information sources: scientific and industrial data banks, innovation, co-operation and SMEs exchanges, NCP, IRC and technological networks and platforms, competence centres, advanced technology centres, business and innovation centres, trade fairs, Internet, online-business, daily press, specialist and technical journals, publications, bank and economic institute reports, observation of other media.

Finding and putting together individual information about potential co-operation partners (scientific institute and/or company profile, technology and management know-how, focusing on innovation and quality, current co-operation offers); producing proofs of existing technical competence.

Organizing (preparation, carrying out, feedback support) of efficient contact, information, innovation and co-operation forums, participation at fairs and the like Examination of selected candidates (investigations, personal interviews, tests, plant inspections) for their accordance with the prepared partner required profile as well as for their interest in co-operation. Gaining partners: selection of suitable candidates, contact with selected co-operation partners, establishing contact with the customer, date arrangement (interviews, contact and co-operation negotiations among others) Co-operation initiating and implementation supporting: collaboration on co-operation concepts, project proposals, strategic implementation plans, cooperation agreements, measure catalogues, etc., searching for and selecting of relevant support programmes, regularly establishing und maintaining contacts with cooperation partners, organizing of efficient cooperation and business trips, project accompaniment (project and quality management, supervision, etc.).



STRONG GROUP OF LABORATORIES

Agrolab Group is, with its 500 employees and 9 laboratories, one of the leading companies for analysis services market in Central Europe. Agrolab-Group is specialized in the field of agriculture, environmental, foodstuffs, feed, attending over 200.000 customers in Germany, Belgium, Netherlands, France, Austria, Spain and Italy.

Our scope of activity involves comprehensive services from sample collecting, through adjusted logistic analysis and assessment of results. Also analysing of soils as regards of demand for nutritious components is one of our services. Beyond of analysing soils our circle trade contains complete extends of microbiological analysis and both organic and inorganic trace analysis using the most modern method of testing. Our scope of activity contains also as idiosyncratic analysis as radioactive measurements and dioxin analysis in all matrices.

Agrolab integrate advantages of efficient and effective production process with individual services for customer specific requirements. 25 regional representatives and a group over 50 experts of varying speciality provide on-site customer services and guarantee optimum developing of customers' inquiries and orders.

Agrolab Group is the leading corporation for agricultural services in the German-speaking world. Over 100.000 farmstead owners are our customers. Beyond of analysing soils we offer varied both quality analysis of agricultural products (cereals, fruits, vegetables, vegetal oils, hop) and analysing composition used raw materials (fertilisers, seeds) and feed.

Our Customers appreciate fixed quality and services for its requirements with relation to analysis services.