www.foodpilot.be

Lab Analyses

More than 80 methods of analysis performed under accreditation plus many more in an accredited environment.

The **Food Pilot** helps companies, labs and governments with their agri-food challenges: product development, process optimization or troubleshooting technical production problems. Within a co-creative process we bring solutions in the form of advice, lab analyses and/or pilot trials performed on semi-industrial processing equipment.
Call us today for a free, fully confidential consultation with our food technology and nutrition experts.

The Food Pilot is a collaboration between ILVO and Flanders' FOOD.

Which analysis?

Are you getting a new product ready for market? The Food Pilot staff can help determine nutritional value, shelf life and determine allergens for labeling.
Or do you have a more complex question? ILVO has advanced analysis equipment and expertise that can address even the most thorny challenges. ILVO's expertise includes control of Listeria, Salmonella and other food pathogens, cleaning and disinfection of the production site, odor or taste questions, detection of residues, GMO detection, and more.

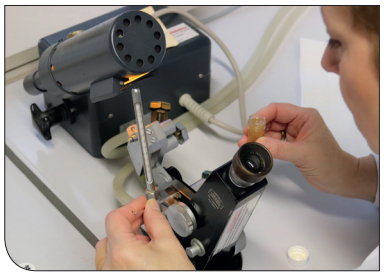
Analysis under accreditation

Our laboratories are BELAC accredited according to the ISO 17025 standard. This standard specifies competence requirements for how to perform laboratory analyses and obtain correct analysis results. We perform a number of ring trials according to the ISO 17043 standard.
All of our accredited activities are also ISO 14001 environmentally certified.

What can you expect?

After a personalized consultation based on your specific question, recipe or sample, you will receive a detailed quote with more information about possible analyses, prices and timing. After approving the quote you can then schedule the analysis with the lab manager
(see below or www.foodpilot.be).

COMPOSITION AND AUTHENTICITY



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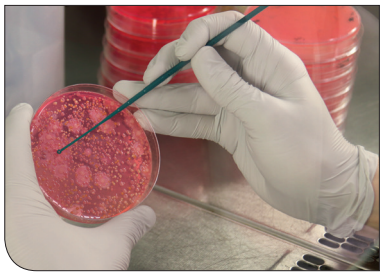
- Determination of water content (dry matter), fat, protein and other components (such as sugars, fatty acids, salt, minerals, etc.)
- Determination of lactose in lactose-free and low-lactose food products
- Measurement of heat parameters (HMF content, furosin, etc.) and enzyme activity (lipolysis, proteolysis, etc.)
- Recipe optimization

MICROBIOLOGICAL QUALITY AND SAFETY



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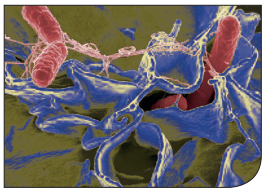
Analysis of:
- Hygiene indicators
- Microbiological indicators for spoilage
- Pathogenic bacteria (bacteria that produce toxins or cause disease in humans)

Top 4 food pathogens
Campylobacter jejuni/coli,
Listeria monocytogenes,
Salmonella spp.
shigatoxine producerende
E. coli (STEC)



FOOD PRESERVATION

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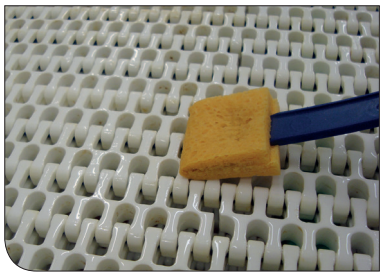
- Shelf-life: determination (and possible extension) of food product shelf life
- Quality: microbiological, (bio)chemical, physical and sensorial tests
- Challenge tests with strains of foodborne pathogens or spoilage organisms of food origin

CLEANING AND DISINFECTION



Swab sampling of conveyor belt

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- Optimization of cleaning and disinfection on site (microbiological analysis and formulation of guidelines)
- Evaluation of cleaning and disinfection products in lab, pilot and field cases

TASTE AND FLAVOR

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Sensory lab
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GC-MC (-O)
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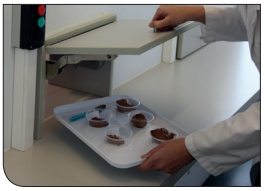
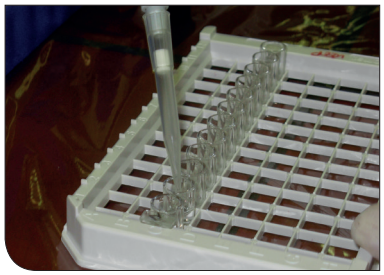
- Sensory lab with trained assessors for testing odor, taste, mouthfeel and texture through descriptive, comparative or difference tests
- Chemical odor analysis using gas chromatography-mass spectrometry (-olfactometry) (GC-MS(-O)) for the identification of several flavor components and the understanding of sensory structures and deviations



FOOD ALLERGENS AND (SPECIES) AUTHENTICITY



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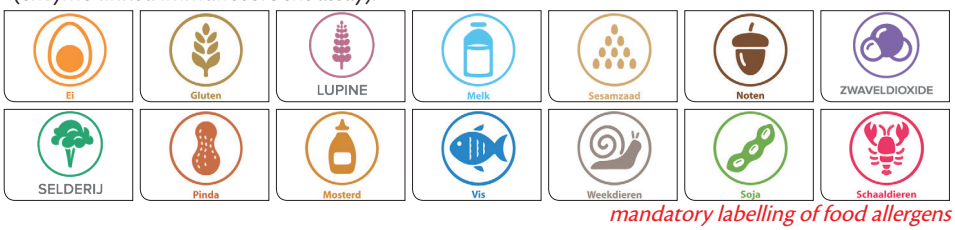
- Detection and semi-quantitative analysis of food allergens
- Qualitative analysis of plant species / species authenticity of food

Tests performed on various matrices using real-time PCR (polymerase chain reaction) and/or ELISA (enzyme-linked immunosorbent assay).



mandatory labelling of food allergens

GMOs

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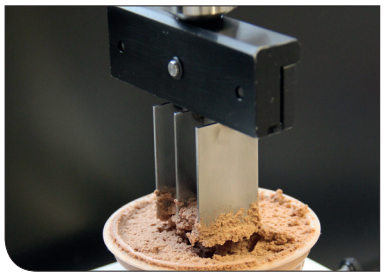
- "First-line GMO screening": a check for the presence of all GM events authorized in the EU, as well as events still in the authorization pipeline ("low level presence")
- Identification of GM events (event-specific detection)
- Quantification of identified GM events

Tests performed on various matrices (solid raw products as well as derived, processed and mixed products) using real-time PCR.

PHYSICAL CHARACTERISTICS



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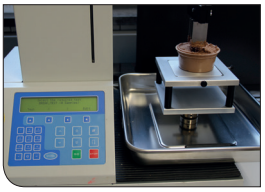
- Particle size analysis (laser diffraction)
- Reological characteristics and viscosity (rheometer)
- Physical stability (turbiscan)
- Hardness/texture/TPA (texture analyzer)
- Density, pH and titratable acidity
- Water activity
- Heat stability
- Color (spectrophotometer)
- Denaturation and degree of crystallization, heat capacity (DSC)



CHEMICAL FOOD SAFETY

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Screening lab

- Residue detection of antibiotics and chemotherapeutics by means of microbiological, immunological and receptor tests
- Validation of commercial screening tests for residue detection of antibiotics and aflatoxin M_1

Chromatographic laboratory

- Detection of residues of veterinary drugs and contaminants with LC-MS/MS and HPLC-fluorescence detection

IN VITRO SCREENING AND GASTRO-INTESTINAL SIMULATIONS

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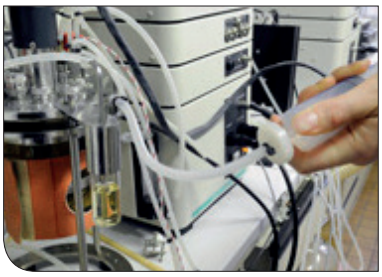

Determination of antibacterial activity (MIC, MBC*) of components or organisms

- *In vitro* : using agar plates or well plates (broth method)
- Via gastrointestinal simulation: in a fermenter vessel that mimics the gastrointestinal tract of humans or animals

**MIC: Minimum Inhibitory Concentration*
**MBC: Minimum Bactericidal Concentration*

QUALITY ASSURANCE

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Organization of **proficiency tests** (inter-laboratory studies) (inter-laboratory studies)

- Physico-chemical and microbiological analyses and analyses for antibiotics
- Mainly under ISO 17043 accreditation
- Mainly focused on raw milk

Preparation of **calibration samples** to calibrate the calibration line of IR devices

- For determination of fat, protein and dry matter
- Performed on skimmed milk, condensed milk, hard cheese, raw milk and cream

Preparation of **control samples**

- Antibiotic standards in milk
- Composition parameters in milk and cream

For more information or to schedule a free consultation, please contact:

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Who are we?

The Food Pilot is a partnership between ILVO and Flanders' FOOD. Visit the Food Pilot at the ILVO campus (Flanders Research Institute for Agriculture, Fisheries and Food) near Ghent, Belgium.

ILVO
FF FLANDERS' FOOD
www.foodpilot.be
FOOD PILOT
AGENTSCHAP INNOVEREN & ONDERNEMEN
EFRO EUROPEES FONDS VOOR REGIONALE ONTWIKKELING