

Versuchs- und Lehranstalt
für Brauerei in Berlin (VLB) e.V.



VLB
BERLIN



SERVICE PORTFOLIO

FOR THE BREWING, MALTING, BEVERAGE AND SPIRITS INDUSTRIES
AND FOR APPLIED BIOTECHNOLOGY



**SCIENCE
GENERATES
QUALITY**





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VLB BERLIN:

OUR GOALS – YOUR ADVANTAGES

The Versuchs- und Lehranstalt für Brauerei in Berlin (VLB, Research and Teaching Institute for Brewing in Berlin) is a German private institute which was founded in 1883. Originally focused on the brewing and malting industry, today the VLB also works in the fields of non-alcoholic beverages, water, spirits and applied biotechnology – nationally and internationally. Around 135 staff are engaged in the fields of research, teaching, service and information.

VLB Berlin is one of the leading independent international centres of expertise for application-oriented research, training, and services for the brewing and beverage industries, their suppliers and customers. The close partnership with our members, the regular exchange of information in our Technical-Scientific and Business-Management Committees as well as the close connection to our customers guarantee that our services are anchored in practical experience.

We use our industrial, collaborative and mission-oriented research, our close links to the Technische Universität Berlin and our intensive contacts with associations and institutes at national and international levels to continuously extend our expertise. We use this expertise to benefit our members and customers by developing innovative solutions to current problems and long-term core topics within our industry.

We provide up-to-date analyses, customer-oriented services, expert consultancy and practice-oriented further education. Our high standards are secured by means of modern technical equipment as well as the high motivation, qualifications and communication capabilities of our employees. The knowledge gained in our work is also integrated into our education and training courses which are very practice-oriented. As the organiser of national and international specialist conventions, we provide a platform for an interdisciplinary, cross-company exchange of information.

At the interface of research, teaching and industrial practice, we continually develop our expertise at an international level and adapt our services offerings to meet the continually changing requirements of our members and customers.

Don't hesitate to contact us to discuss your requirements.

The VLB in brief

Founded:	1883
Legal structure:	Registered association
Location:	Berlin, Germany
Staff:	Approx. 135 employees from 18 nations, including around 80 academic staff
Annual budget:	About EUR 11 million
Fields of expertise:	Research, further education, services and information
Scope:	Brewing and malting technology, non-alcoholic beverage technology and beverages, analysis of beer, beverages, water and spirits, applied biotechnology
Structure:	5 research institutes, several departments, 2 committees (TSC and BMC) and a subsidiary (VLB LaboTech GmbH)
Focus:	National and international members and customers
Partner:	Cooperation partner of Technische Universität Berlin, Department of Brewing and Beverage Technology and Department Energy Process Engineering and Conversion Technologies for Renewable Energies

RESEARCH



Innovations are the key to progress. VLB therefore invests part of its resources in research and development. In addition to publicly funded applied research and contract research, close cooperation with the Technische Universität Berlin also plays an important role. In addition, VLB scientists actively participate in the working groups of international organizations such as EBC, MEBAK, ASBC, CNRIFFI and the DLG.

Our projects are financially supported, among other things, by various funding programmes of the Federal Ministry of Economic Affairs and Energy (BMWE) via its project management organization as well as the Science Promotion of the German Brewing Industry e.V., the European Commission and, last but not least, the contributions of our members.

Numerous clients from the industry work specifically with VLB in national and international collaborative projects.

VLB's research institutes cover the entire value chain of the brewing and beverage industry – from raw materials to the entire supply chain, logistics and energy issues.

Our cross-sectoral approach enables the development of products and processes with high practical relevance. Our research institutes work in the areas of:

- + Brewery raw materials (cereals), analysis of beer and beverages
- + Biotechnology and microbiology
- + Beer and beverage production
- + Management, logistics, beverage packaging
- + Sustainability, energy supply and optimisation, AI

Research findings are transferred through innovative services, VLB publications, and high-quality events and training programmes. The know-how built up through research at VLB is thus available to the entire industry and the interested public.

✉ research@vlb-berlin.org

🌐 www.vlb-berlin.org/en/research



TRAINING AND CONVENTIONS

VLB Berlin offers a wide range of education and training programmes for brewers and employees of the beverage and spirits industries, also in English and Spanish.

Certified Brewmaster Course

This popular training course for prospective brewing professionals starts every year in January in Berlin. All lessons are held entirely in English. The 6-month course provides the core knowledge required for technical brewery management.

Study programmes for brewers at university level

We actively support Technische Universität Berlin in delivering degree programmes for brewers (e.g. B.Sc./M.Sc. Brau- und Getränketechnologie, B.Eng. Brauwesen). German-language proficiency is required.

Workshop "Beverage Technology for Brewers"

A ten-day full-time course that provides up-to-date knowledge in the production of soft drinks, non-alcoholic beverages and mixed beverages. (in English)

Training "Applied Microbiology"

A one-week seminar on current microbiological methods in the brewing and beverage industry. (in English)

Brewing in a Nutshell – Online

100% online course providing detailed basic knowledge of beer brewing. (on demand, in English)

 www.vlb-berlin.org/en/training



In-house training courses

We also offer fully customised in-house training courses in English and Spanish (on-site and online).



International conventions & symposia

VLB organises several regular congresses for the brewing and beverage industries – nationally and internationally. In addition, we offer workshops and symposia for special topics such as analytical methods or packaging:

- + Ibero-American Symposium "Brewing & Filling Technology"
- + Africa Brewing Conference
- + Brewing Conference Bangkok
- + Symposium on "Acidic fermented non-alcoholic beverages"
- + VLB October Convention incl. International Malting Barley Seminar
- + International Brewing & Engineering Congress ("Spring Conference")
- + North American Brewing Conference
- + BioProScale Symposium



 brewmaster@vlb-berlin.org

 www.vlb-berlin.org/en/events

BARLEY, MALT AND ADJUNCTS

VLB offers consultancy and analytical services covering all brewing raw materials.

Our service profile:

- + **Analysis and assessment** of malting barley, wheat and other cereals
- + **Varietal testing and recommendations worldwide:** Spring barley, winter barley, wheat
- + **Varietal identification** of barley and malt in commercial samples using protein electrophoresis and DNA diagnostics
- + **Malt analysis:** Evaluation of the technical quality of cereals involving hand evaluation, grain and malt analysis
- + **Enzyme analysis:** Amylases, limit dextrinases, proteases, glucanases, xylases, lipoxxygenases
- + **Micromalting** (2 g to 200 kg) using standard or customised malting programs
- + **Examination of the hygienic status** of malting cereals and malt – mould contamination, mycotoxins, gushing
- + **Residue analysis:** Heavy metals, pesticides and other contaminants
- + **Contract research** in all areas of the production of raw materials for breeders, farmers, grain traders and the malting and brewing industry



Our laboratories meet the requirements of the international standard DIN EN ISO/IEC 17025:2018.

✉ customer.service-fir@vlb-berlin.org

🌐 www.vlb-berlin.org/en/laboratory-and-consulting/raw-materials



PURE YEAST AND STARTER CULTURES

The VLB yeast collection offers a wide range of yeast strains for use in the brewing, beverage and distilling industry. Most of them are bottom- (e.g. Pils, Lager or Märzen) or top-fermenting strains (e.g. wheat beer, Alt beer or Kölsch). We also cultivate wine, sparkling-wine and distilling yeasts, as well as mixed cultures for the production of non-alcoholic fermented beverages.

We deliver the pure yeast cultures worldwide as:

- + **Slope cultures** in test tubes
- + **Dry yeast** on filter paper
- + **Liquid concentrates in aluminum bottles** (7-litre liquid cultures concentrated down to 700 – 800 milliliter)

Additional services:

- + Screening and propagation of **special yeast strains** in EBC test tubes
- + **External backup storage** of your brewery's house yeast

Benefit from the diversity offered by using specialist yeast strains in your brewery!



✉ hefe@vlb-berlin.org

🌐 www.vlb-berlin.org/en/yeast

✉ biolab@vlb-berlin.org



WATER



VLB's expertise in water and its associated service portfolio have supported the brewing and beverage industry for more than a century. We also serve as an officially recognised analytical laboratory for operators of public and private drinking-water systems. Our research findings and analytical expertise enable us to provide expert advice and advanced training courses.

We also serve as an officially recognised analytical laboratory for operators of public and private drinking-water systems.

Water analysis

- + Qualified sampling (drinking water)
- + Chemical, physical and microbiological analyses, e.g.:
 - + *Legionella* spp.
 - + heavy metals
 - + TOC/DOC
 - + disinfection by-products
- + Sensory analyses and evaluation

Water quality

- + Evaluation of:
 - + drinking water
 - + mineral and table water
 - + brewing water
 - + process water

Optimisation of water management

- + Water savings
- + Water recycling

Water treatment: process optimisation and validation

- + Removal of iron and manganese
- + Activated carbon filtration
- + Ion exchange, ultrafiltration, reverse osmosis
- + Cleaning and disinfection

Our laboratories meet the requirements of the international standard DIN EN ISO/IEC 17025:2018.

✉ wasser@vlb-berlin.org

🌐 www.vlb-berlin.org/en/wmt



ANALYSIS OF BEER, BEVERAGES AND HOPS



Whether you require analyses of beer, non-alcoholic beer, intermediate products, hops or filter aids – our laboratories offer a broad variety of analytical services for breweries and maltings and the whole beverage industry.

✉ zentrallabor@vlb-berlin.org

🌐 www.vlb-berlin.org/en/beer

Analysis of beer and beverages:

- + **Standard beer analysis:** e.g. original gravity, alcohol, bitterness, foam stability by methods of MEBAK, EBC and ASBC
- + **Elemental analysis:** Heavy metals, beer-soluble components of filter aids, trace analysis by ICP-MS
- + **Flavor analysis:** Aroma compounds in hops, fermentation by-products, sulfur compounds, aging carbonyls
- + **Off-flavor analysis:** Testing of barrier properties of packaging materials against volatile organic compounds (e.g. TCA)
- + **Sensory evaluation:** Tasting according to 5-point testing, triangle tasting, descriptive tasting
- + **Microbiological analysis:** Detection and identification of beer-spoilage microorganisms
- + **Identification of turbidity:** Microscopic evaluation and particle measurement
- + **Determination of nutritional value:** BIG7, vitamins
- + **Certificates of free sale:** Analysis, microbiology, sensory evaluation and labelling compliance check
- + **Analysis of sugars:** Sugar range by HPLC and enzymatic tests
- + Assessment of **isotonicity** by osmometry
- + **Spirits analysis** → p. 15



Our laboratories meet the requirements of the international standard DIN EN ISO/IEC 17025:2018.

Analysis of hops:

- + α - and β -acids, (reduced) iso- α -acids by HPLC
- + Determination of total oil content, analysis of individual aroma compounds
- + Polyphenols, xanthohumol
- + Elemental analysis

TECHNOLOGICAL CONSULTANCY



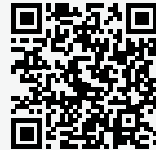
Our research institutes and consultancy services are reliable partners for all questions of brewing and malting technology, engineering and packaging technology.

Our areas of expertise are:

- + **All fields of brewing and beverage technology:** Wort production, high-gravity brewing, yeast management, fermentation control, filtration, stabilization, etc.
- + **Recipe, product and process development** for beer, non-alcoholic beer, non-alcoholic beverages and fermented beverages
- + **Factory and site acceptance testing** (FAT and SAT) of brewhouses, filtration systems and bottling lines
- + **Yeast optimisation** through strain selection
- + **Filling lines:** Validation of lines, checks of empty-bottle and full-bottle inspection machines
- + **Optimization of all processes** in breweries, maltings and filling operations, troubleshooting
- + **Brewing trials** in our pilot brewery (wort production up to filling)
- + **Troubleshooting** on site from brewhouse to filling
- + **Microbiological** and hygiene check-ups
- + **Engineering** and validation of plants
- + **Feasibility** studies/expert opinions
- + **Engineering review:** Support for investment decisions, validation of new plants, commissioning support and functional acceptance testing
- + **Hygienic-design assessments** of machinery and associated equipment; CIP strategy reviews; and material-compatibility and corrosion assessments
- + **Validation** of storage and transport conditions
- + **Water and energy management** in filling and packaging lines, recording of energy flows
- + **Sustainability, energy supply and optimisation**

✉ brewmaster@vlb-berlin.org

🌐 [www.vlb-berlin.org/en/
laboratory-and-consulting](http://www.vlb-berlin.org/en/laboratory-and-consulting)



TESTING OF PACKAGING

Since 1972, VLB has operated a laboratory specialising in the testing of packaging and packaging components for the beverage industry.

The Testing Laboratory for Packaging of VLB Berlin is a specialist laboratory for the beverage industry and its suppliers. Whether bottles, closures, crates, cans, labels, adhesives or outer packaging – the packaging testing centre has answers to nearly all questions about beverage packaging. In addition to analysing packaging, we are also happy to advise and train you.

- + **Glass bottles:** Internal pressure resistance, impact resistance, dimensional stability, empty mass and volume, reusability testing by simulating reuse cycles, thermal shock resistance, surface finish, colour properties, measurement of mouth geometry
- + **Plastic bottles:** Internal pressure resistance, impact resistance, dimensional stability, permeation analysis (oxygen & carbon dioxide permeability), stress crack test
- + **Cans & lids:** Buckle & burst test, dimensional stability, volume, axial compression strength, seaming check for original filled cans, score-line test, tear force, condition of the inner coating.
- + **Large beverage cans:** Dent resistance, dimensional stability, volume, axial compression strength, condition of the inner coating, sheet thickness
- + **Crown caps:** Internal pressure resistance, side impact strength, top-load test, paint abrasion, corrosion resistance, pasteurisation test, dimensional stability, sheet thickness, sheet hardness, odour and taste influence, permeation analysis (oxygen & carbon dioxide permeability)
- + **Aluminium roll-on closures & plastic screw caps:** Internal pressure resistance, top-load test, dimensional stability, opening torque, odour and taste impact, permeation analysis (oxygen & carbon dioxide permeability).
- + **Beverage crates:** Impact resistance (free fall & inclined plane), dimensional stability, post-shrinkage (change in dimensional stability after warm storage), weight, stacking pressure resistance, compression pressure resistance, grip performance tests, stress-free test, in-mould label tests, tape test, forced pallet impact test
- + **Multipacks for bottles and cans:** Static tensile strength of handle-hole cut-outs, bottom tear strength, dynamic stability of quill cut-outs, quill runability, continuous wet strength, dimensional stability, tensile strength and elongation, mass per unit area, specific volume, thickness, abrasion resistance of inks.
- + **Bottle burst analysis:** Glass breakage analysis: reconstruction of the destroyed bottle, localisation of the breakage starting point, determination of the cause of breakage
- + **Labels:** Reusability – alkali resistance, alkali penetration & peel time, evaluation of paper and print quality, dimensional stability, dry & wet breaking load, fibre direction, water absorption capacity, basis weight.
- + **Adhesives:** Condensation resistance, ice water resistance, release time in a caustic bath, washability of hot melts
- + **Filling quantity stencils for in-house filling quantity control:** Production of new stencils, duplication of existing stencils
- + **Advice** on selecting appropriate packaging



Contract laboratory of the German Brewers' Association and the Association of the German Fruit Juice Industry. VLB's Packaging Laboratory develops the STLbs (special technical terms of delivery and supply) for beverage packaging in cooperation with the beverage sector's associations.

Our laboratories meet the requirements of the international standard DIN EN ISO/IEC 17025:2018.

✉ packaging@vlb-berlin.org

🌐 www.vlb-berlin.org/en/packaging



BEVERAGE LOGISTICS AND LOAD SAFETY

In the field of logistics, there is considerable potential for optimisation, especially in the beverage industry. The Research Institute for Management and Beverage Logistics (FIM) conducts interdisciplinary work along the supply chain from beverage producers through the beverage wholesalers to the food retail industry.

Our range of services includes, among others, the following topics:

FIN Database

A central database stores data supplied by participating companies on the vehicles and vehicle bodies used for beverage transport (tractor units, semi-trailers, motor vehicles, trailers). Data is collated from the vehicle registration documents such as vehicle type, vehicle owner, payload and axle loads. These data are supplemented with information from inspection certificates, including the DIN EN 12642 certification code and the loads for which the vehicle is approved. The certificates are kept up-to-date by the stipulated annual inspections. On the basis of the stored information, the loaders can quickly and easily monitor and control the correct loading and load securing. Services offered by the database are available to registered members.

Supply Chain Sensor Check

With the "Supply Chain Sensor Check", provided by the FIM of VLB as a technical service, breweries and beverage producers can obtain detailed, cost-effective information on transport conditions, regarding the environmental conditions along their transport routes.

The sensor systems are available for various measurements and are loaned out to breweries and other beverage producers within the framework of appropriate projects. The sensor systems are then placed in the transport container together with the customer's consignment. Data retrieval, analysis and reporting can be performed by VLB Berlin experts on request.

Mobile Motion Base

With our mobile motion base, we are able to carry out both static and dynamic trials to determine and optimise the secure loading of cargo for breweries, mineral water companies and other beverage producers. Load configurations can be tested, modified and compared on-site under the same conditions. In this way, weak points can be identified and optimised. In the development phase for returnable crates, prototypes can be used to examine the recovery behaviour after a simulated tilting test in practice. Coefficients of static and sliding friction can be determined for kegs and crates on various load carriers. Crucial phases during the transport, handling and storage processes for a particular cargo can be repeatedly examined on the mobile motion base.

✉ fim@vlb-berlin.org

🌐 www.vlb-berlin.org/en/fim



✉ fin@vlb-berlin.org

🌐 www.fin-datenbank.de



BIOTECHNOLOGY

Microbiological research and the understanding of biotechnological processes form the basis for the development of various production processes in the food, beverage and pharmaceutical industries.

- + **Development of fermentation processes** using the latest methods and process analytics (including impedance measurement, flow cytometry, electro-optical in-line measurement, scanning electron microscopy)
- + Adaptation of traditional production processes of **complex fermentation products** (e.g. kombucha, water kefir) to industrial-scale processes
- + **Contract fermentation services** for the production of starter cultures, functional ingredients, etc.
- + **Beverage and food development** based on a broad „microbiological toolbox“

Benefit from our many years of experience in customer-oriented biotechnological process development.



✉ biotech@vlb-berlin.org

🌐 www.vlb-berlin.org/en/beam

APPLIED MICROBIOLOGY

Our Applied Microbiology department has an internal strain collection with great biodiversity. We have more than 1,500 yeast and 600 bacterial strains available to our customers.

Strain collection

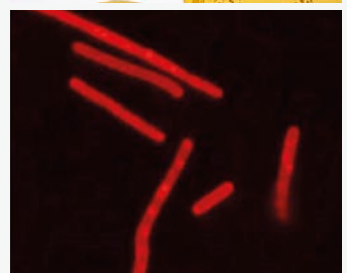
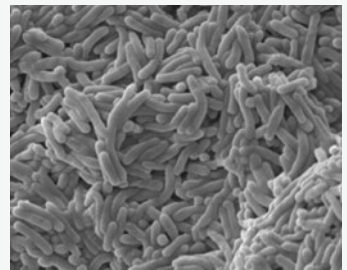
- + **Strain screening**
- + **Isolation and identification** of microorganisms / customised **long-term storage** of pure cultures
- + Production of **starter cultures** for food and beverage production
- + Production of **microbial and spore preparations** and subsequent performance and stability studies

Microbiological culture media

- + **Production of selective culture media** for the detection of general and beer-spoiling bacteria, as well as for culture yeasts and wild yeasts

Services

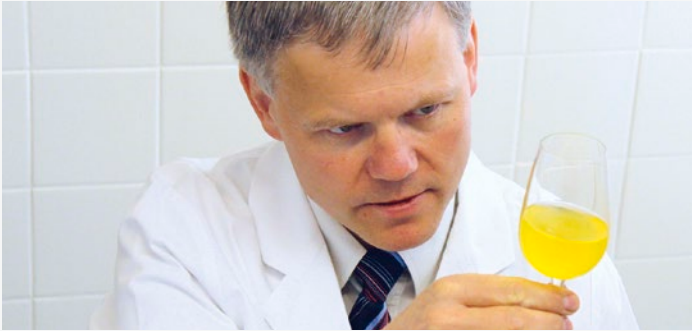
- + **Classical microbiological** and **molecular biological** analyses
- + **General microbiological** analyses of food, beverages and consumer products



✉ biolab@vlb-berlin.org

🌐 www.vlb-berlin.org/en/beam

PORTFOLIO FOR THE SOFT DRINKS AND NON-ALCOHOLIC BEVERAGE INDUSTRY



Non-alcoholic drinks belong to a growing segment of the beverage market worldwide. VLB Berlin offers suitable instruments for quality assurance e.g. for alcohol-free beer, soft drinks, mineral water or fermented non-alcoholic beverages. We also offer complementary services for production and filling processes.

Our laboratories meet the requirements of the international standard DIN EN ISO/IEC 17025:2018.

✉ brewmaster@vlb-berlin.org

🌐 www.vlb-berlin.org/en/services

Testing of quality properties

- + **Analysis of sugars** by HPLC and enzymatic tests
- + Determination of relevant **ions and organic acids**
- + **Isotonic value** by osmometry
- + Determination of **ethanol** (down to trace analysis)
- + Determination of **ingredients** like caffeine, sweeteners and others
- + **Sensory evaluation** of soft drinks, water and near-water beverages
- + **Microbiological analysis:** Determination and identification of beverage-spoilage organisms
- + **Determination of nutritional value:** BIG7, vitamins
- + **Certificates of marketability:** Analysis, microbiology, sensory evaluation and declaration check
- + **Off-flavour analysis:** Testing of barrier properties of packaging materials against volatile organic compounds (e.g. TCA), migration of acetaldehyde through PET bottles
- + **Identification of turbidity:** Microscopic evaluation and particle measurement
- + **Water analysis** → p. 7

Residue analysis

- + Detection of **heavy metals**
- + Detection of **pesticides and mycotoxins**
- + **Identification of contamination** by organic compounds (acetaldehyde, formaldehyde and others)

Miscellaneous tests

- + **Evaluation** of oxygen sensitivity of beverages
- + **Assessment** of flavours (natural, artificial, fermented)
- + **Sensory evaluation** of soft drinks, water and near-water products
- + **Microbiological stability** in terms of selected contaminants
- + **Species-specific identification** of beverage-spoiling microorganisms

Filling lines, product and process development

- + **Evaluation and optimisation** of quality and performance
- + **Validation** of aseptic processes
- + **Sensory evaluation/chemical properties**
- + **Non-alcoholic beers**
- + **Fermented** non-alcoholic beverages
- + **Soft drinks**
- + **Pure yeast cultures** and mixed cultures for non-alcoholic beverage production
- + Optimising the **stability and shelf-life** of naturally cloudy beverages
- + Application of **functional carbohydrates** in beverages
- + Development of **fermented non-alcoholic beverages** (kombucha, water kefir, etc.)



PORTFOLIO FOR CRAFT BREWERS

Craft beer is an established segment in the international beer market. Since 2006, VLB Berlin has offered training courses and services specifically for this target group. We also organise international conventions and seminars for craft brewers.

Services / Consulting

- + **Pure yeast cultures:** Our yeast collection offers German-style bottom- and top-fermenting brewing yeasts (e.g. Pilsner, Kölsch, Alt, wheat beer), Brettanomyces strains and other micro-organisms for beer and beverage production → p. 6
- + **Process optimisation:** Raw materials, brewhouse, fermentation/ maturation, yeast management, filling
- + **Hop addition strategies/product development:** Individual consultancy and product development in our 5 L, 2 hL or 5 hL pilot brewery plants, Consulting → p. 9
- + **Analytical services:** Assessment of malt, hops, intermediate products, beer and beverages. Verification analyses and proficiency/ ring tests, VLB "Craft Beer Check" → p. 8
- + **Laboratory instruments** and consumables up to turnkey labs → p. 16

Workshops / Training courses

(our offer includes in-person, online and hybrid workshops)

- + **Workshop "Beverage Technology for Brewers":** A ten-day full-time course that provides up-to-date knowledge of soft drink, alcohol-free beverage and other mixed beverage production. (in English)
- + **VLB Certified Brewmaster Course:** Comprehensive 6-month training course for prospective brewing professionals in Berlin, Germany (in English)
- + **Training "Applied Microbiology":** 1-week training course on practical microbiology for the brewing and beverage industry, Berlin, Germany (in English)
- + **Training "Brewing in a Nutshell – Online":** 100% online course providing detailed basic knowledge of beer brewing (on demand, in English).

Publications → p. 17

- + **Textbook "Technology Brewing & Malting"** by Wolfgang Kunze. The complete technology of malting, brewing and filling explicitly and clearly explained (948 pages). Available in English, German and Spanish.
- + **Textbook "The Yeast in the Brewery"** by Dr. Hans-J. Manger/ Prof. Gerolf Annemüller. Advanced knowledge of yeast handling and application in the brewing process. Available in English and German.
- + **Textbook: "Processing of various adjuncts in beer production",** Raw grain adjuncts – Sugars and sugar syrups – Malt substitutes. 164 pp. In English
- + **Textbook: "Applied Mathematics for Malting and Brewing Technologists"** by Dr. Hans-J. Manger/Prof. Gerolf Annemüller. 366 pp. In English



✉ brewmaster@vlb-berlin.org



PORTFOLIO FOR THE SPIRITS INDUSTRY

Under the label IfGB, VLB also offers a wide range of customised services and further training for the spirits industry. ✉ spirituosenanalytik@vlb-berlin.org
🌐 spirituosen.ifgb.de

Analytical testing is an essential tool for quality assurance. It can document the origin of raw materials and products, identify sources of turbidity and detect counterfeit products.

Standard analytics

- + Measurement of **density, extract and alcohol**
- + **Detecting volatile** components by Gas chromatography (GC) and GC Mass spectrometry (MS)
- + Analysis of **emulsified liqueurs** (alcohol, density, extract, egg and fatty content)
- + High-performance liquid chromatography (HPLC) for measuring **non-volatile substances**, e.g. sugars
- + **Sensory evaluation**
- + Assessment of **labels and declarations**

Special analyses

- + Determination of **substances with safety limits**, e.g. asarone, thujone
- + Determination of **volatile acids** by ion chromatography (IS)
- + Determination of **trace elements** by mass spectrometry (MS) with inductively coupled plasma mass spectrometry (ICP-MS)
- + **Aroma profiling**
- + Determination of **off-flavor compounds**
- + Determination of **turbidity and sediments** by scanning electron microscope (SEM-EDX) and Fourier transform infrared spectroscopy (FTIR)



On request, analysis results can be supplemented by informative interpretations. VLB conducts established annual market-quality monitoring tests for spirits. The institute has at its disposal a wide range of machines and apparatus as well as qualified staff for analysis, food legislation and tasting.

Our laboratories meet the requirements of the international standard DIN EN ISO/IEC 17025:2018.

Publications → p. 17

- + Textbooks
- + Section "IfGB aktuell" in our trade journal "Brauerei Forum"

Testing of packaging → p. 10

Laboratory equipment → p. 16

Training and events for the spirits industry

Further education

- + **Distiller's course:** 2-week training for staff of distilleries and producers of spirituous beverages. Theoretical and practical knowledge from water concepts via product development up to quality assurance, in Berlin. (in German)
- + **Master distillers course:** 10-week training. Preparation for the discipline-specific part of the Master Distiller examination administered by a German Chamber of Industry and Commerce in Berlin. (in German)
- + **Specialises training:** Tailor-made trainings in-house or at the VLB Berlin. Quality assurance for lab staff, sensory evaluation, technology.

Convention IfGB-Forum

The IfGB promotes professional and scientific communication between research institutes and industry, between producers of spirits and their suppliers. The IfGB Forum has been held annually since 2003 at different locations and with technical visits to various spirits companies or those of the supply industry.



✉ info@ifgb.de
🌐 spirituosen.ifgb.de



LABORATORY INSTRUMENTS



VLB LaboTech GmbH: Laboratory equipment and consultancy services as a wholly owned subsidiary of VLB Berlin.

As an expert partner, we offer you our experience and support on all matters relating to quality assurance. Our target audience comprises laboratories in breweries, maltings and the beverage and spirits industries, both nationally and internationally.

In addition, our services are also aimed at the agricultural trade and the farming sector, which are increasingly reliant on reliable analytical methods and quality assurance measures.

The product range includes, amongst other things:

- + **Laboratory supplies:** consumables for chemical and technical analysis
- + **Hop analysis:** International HPLC calibration standards
- + **Process control:** Specialised equipment for mash, wort and beer
- + **Hydrometry:** High-quality saccharimeters, alcoholometers and hydrometers
- + **Microbiology:** VLB culture media, equipment and consumables
- + **Process laboratory analysis:** Equipment for water and wastewater analysis and thermometers

Haven't found what you're looking for?

Our range includes far more products and services than are shown in our online catalogue.

Our staff advise you personally and assist you with your specific requirements regarding raw materials, analysis and equipment.

Please contact us by telephone or via our contact form. We will be happy to help and will get back to you as soon as possible.

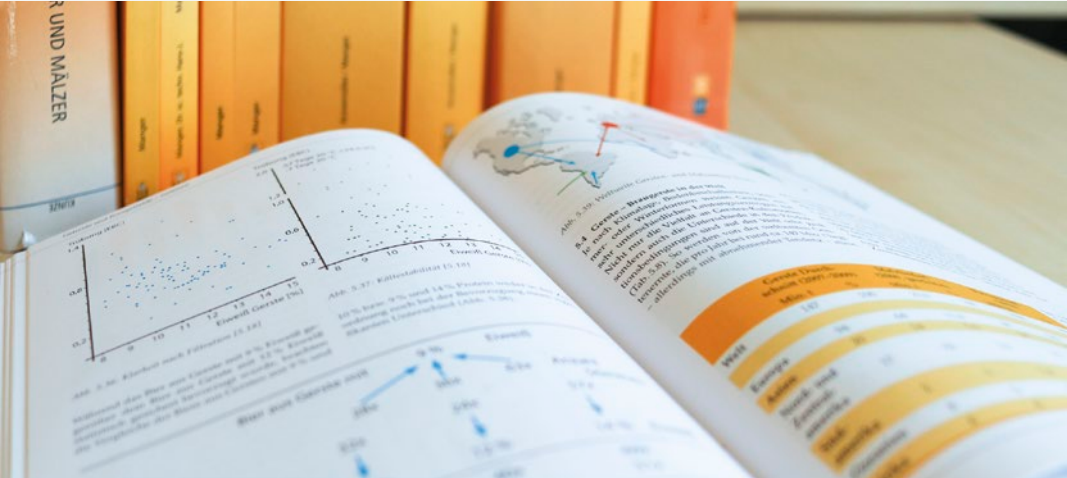
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PUBLISHING



Textbooks

“Technology Brewing & Malting” by Wolfgang Kunze is the English translation of the leading German textbook for the training of brewers and maltsters. With its practice-oriented descriptions, the book has become a unique source of knowledge for all brewing professionals. Since its first edition in 1961 the book has been translated into seven languages including English, Russian, Chinese and Spanish. All in all more than 70 000 copies have been sold all over the world.

Other English titles are:

- + “The Yeast in the Brewery – Management, Pure yeast cultures, Propagation”
- + “Processing of Various Adjuncts in Beer Production: Raw grain adjuncts – Sugars and sugar syrups – Malt substitutes”
- + “Applied Mathematics for Malting and Brewing Technologists”

Trade Journal “Brauerei Forum”

Our trade journal “Brauerei Forum” is published seven times a year in German and twice a year in English(print and online: issuu.com/brauerei-forum).

Digital Media / Newsletter

Our website www.vlb-berlin.org offers a broad range of information about our services, research institutes and training schedules in German, English and Spanish.

We also publish a regular newsletter in German and English. You can also find us on LinkedIn, Facebook and Instagram.

✉ buchbestellung@vlb-berlin.org

All our publications can be ordered online via our **bookshop**:
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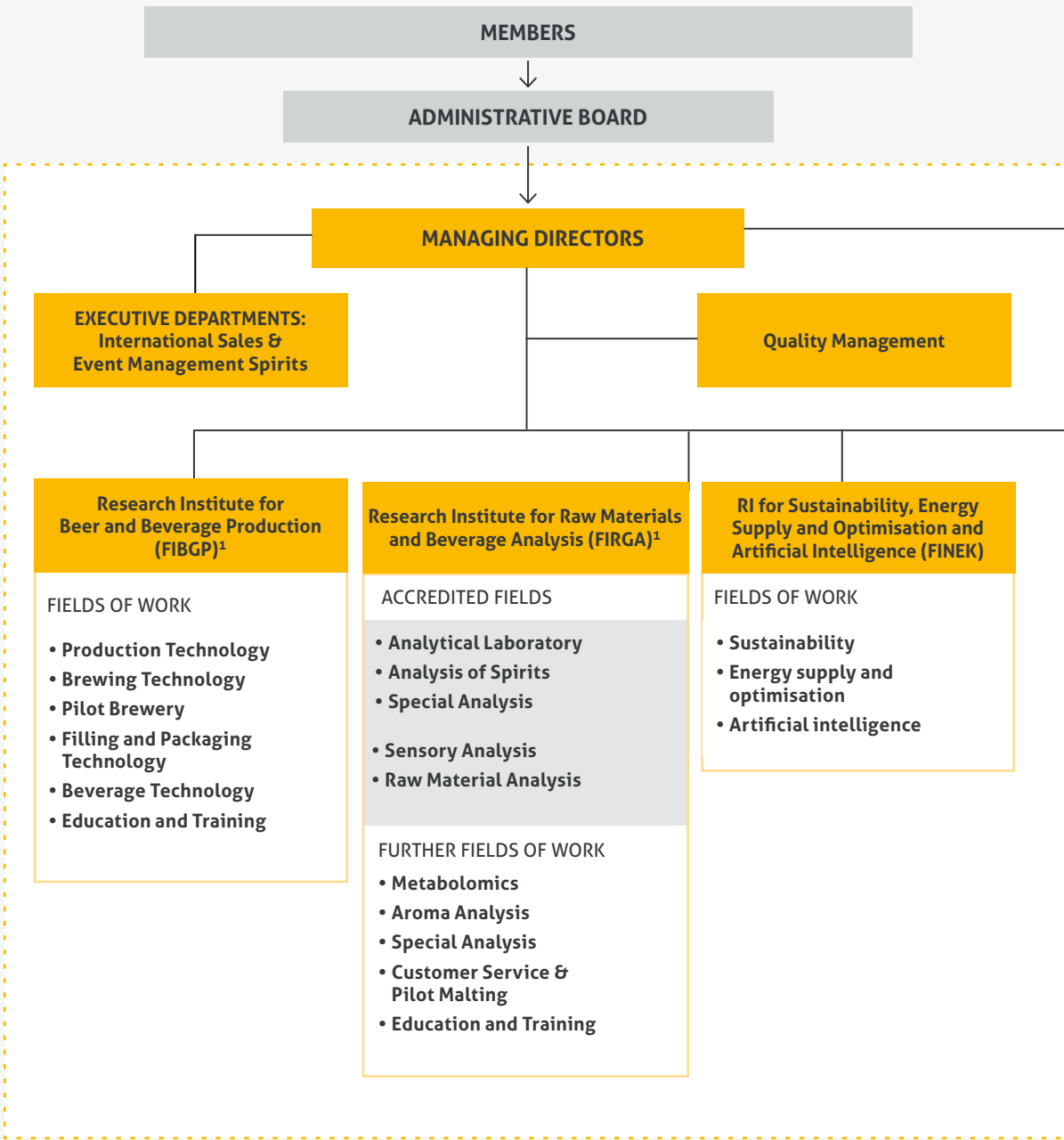
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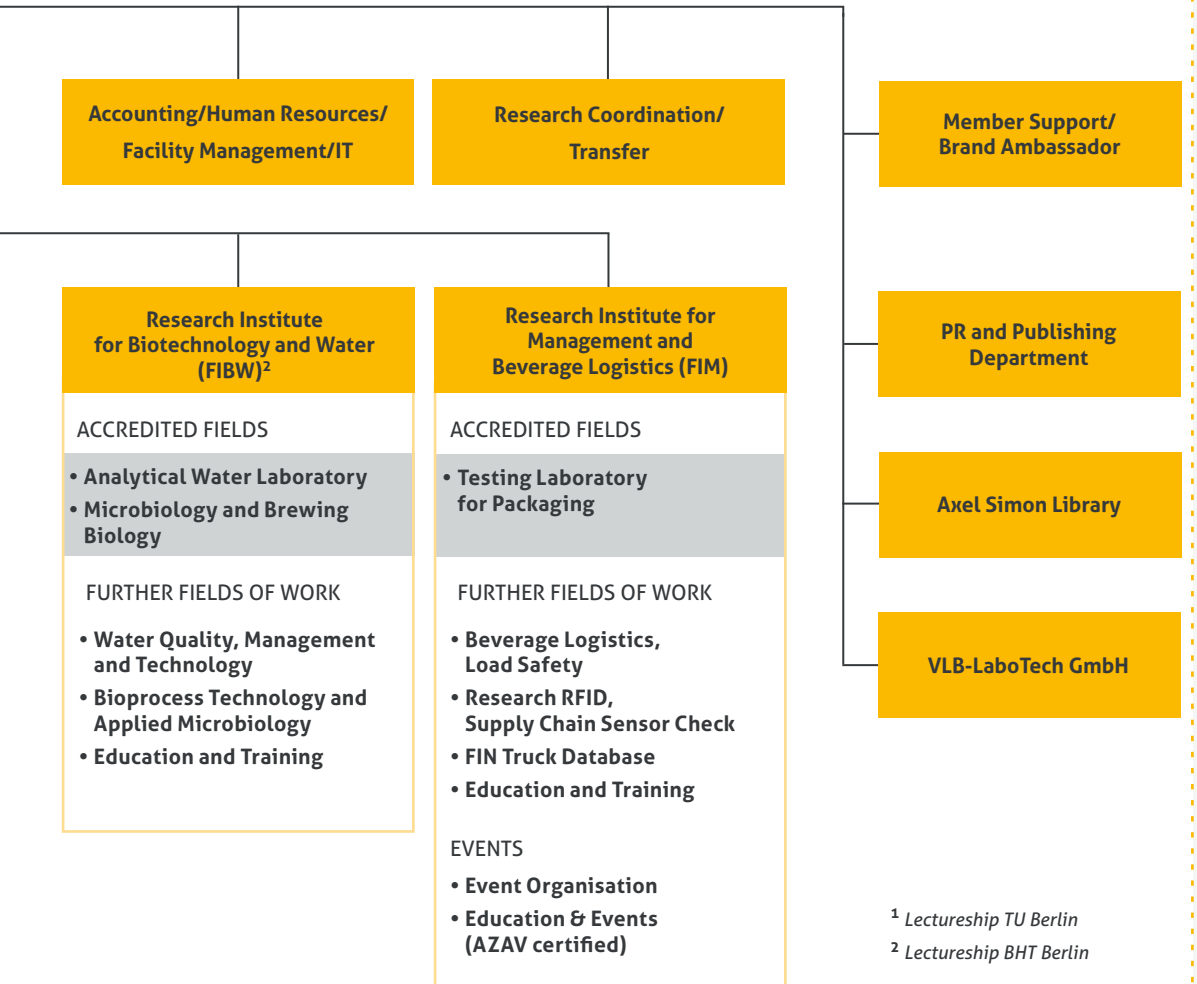
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