



VLB
BERLIN



SERVICE OFFERS

FOR THE BREWING, MALTING, BEVERAGE AND SPIRIT INDUSTRIES
AND 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 works also in the fields of non-alcoholic beverages, water, spirits and applied biotechnology. Around 130 staff are engaged in the fields of research, teaching, service and information.

VLB Berlin is one of the leading internationally independent competence centers for application-oriented research, training, and services for the brewing and beverage industries, their suppliers and customers. Close partnerships with our members, the exchange of current information in our Technical-Scientific and Business-Management Committees as well as the proximity to our customers guarantee that our services are anchored in practical experience.

We use our industrial community and mission-oriented research, our close links to the Technische Universität Berlin and our intensive contacts with associations and institutes on a national and international level to continuously extend our expertise. This is used to the advantage of our members and customers for the development of innovative solutions to current problems and long-term core topics within our industry.

We provide up-to-date analyses, customer-oriented services, competent consulting 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 organizer 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 are continually developing our competencies also at an international level, and adjust our service offers to meet the continually changing requirements of our members and customers.

Let us know your demands!

The VLB in brief

Founded:	1883
Legal structure:	Registered association
Location:	Berlin, Germany
Staff:	about 130, including about 90 research associates holding an academic degree
Annual budget:	About 11 Mio €
Fields of expertise:	Research, further education, services and information
Scope::	Brewing and malting technology, technology of non-alcoholic soft drinks and beverages, analysis of beer, beverages, water and spirits, applied biotechnology
Structure:	4 research institutes, several departments and committees
Focus:	National and international members and customers
Partner:	Cooperation partner of Technische Universität Berlin (Chair of Brewing and Beverage Science)

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 Technical University of Berlin also plays an important role. In addition, VLB scientists actively participate in the working groups of international organizations like EBC, MEBAK, ASBC, CNIIFI and the DLG.

✉ research@vlb-berlin.org

🌐 www.vlb-berlin.org/en/research

Our projects are financially supported, among other things, by various funding programmes of the Federal Ministry of Economic Affairs and Climate Action (BMWK) 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 cooperations.

Supported by:



VLB's research institutes cover the entire value chain of the brewing and beverage industry - from raw materials to logistics.

on the basis of a decision by the German Bundestag

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



- + Raw materials (cereals) and water
- + Biotechnology and microbiology
- + Beer and beverage production
- + Instrumental beer, beverage analysis and sensory analysis
- + Spirits
- + Management and logistics

INNO-KOM

The transfer of the results of our research work takes place via innovative services and the VLB publications as well as our high-quality event and training offers. The know-how built up through research at VLB is thus available to the entire industry and the interested public.



TRAINING AND CONVENTIONS

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

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-months course provides the basic knowledge for the technical management of a brewery. In English, hybrid format (online + on-site)

Study programmes for brewers at university level

We support the Technical University of Berlin actively in conducting regular study programmes for brewers (e.g. B.Sc./M.Sc. Brau- und Getränke-technologie, B.Eng. Brauwesen). German skills are necessary.

Workshop “Craft Brewing in Practice”

A 10-day full time training course providing up-to-date knowledge in the field of pub and micro brewing. (in English)

Workshop “Micro Malting in Practice”

The art of malting presented in a 6-day workshop. (in English)

Training “Applied Microbiology”

A one-week seminar about up-to-date microbiological methods in the brewing and beverage industry. (in English)

 www.vlb-berlin.org/en/training

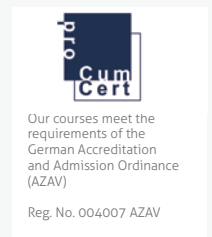


Brewing in a Nutshell – Online

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

In-house training courses

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



International conventions & symposia

VLB organizes several regular congresses for the brewing and beverage industries – nationally and internationally, on-site or online at our “VLB Virtual Campus”. In addition, we offer workshops and symposia for special topics like analyses or packaging:

- + Iberoamerican Symposium “Brewing & Filling Technology”
- + Africa Brewing Conference
- + Brewing Conference Bangkok
- + Symposium “Acidic fermented non-alcoholic beverages”
- + VLB-Jahrestagung incl. Braugersten-Seminar
- + BioProScale Symposium
- + Online Conference: International Brewing Web Conference (IBWC)
- + Online Conference: VLB International Craft Brewing Conference (ICBO)
- + Online Conference: VLB Packaging Conference (VPC)

 brewmaster@vlb-berlin.org

 www.vlb-berlin.org/en/events

BARLEY, MALT AND ADJUNCTS

The VLB offers consulting and analyses on all questions related to raw materials for brewing purposes.

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:** Amylase, Grenzextrinase limit dextrinase, protease, glucanase, xylase, LOX
- + **Micro maltings:** (2 g to 200 kg) according to standard of or customized malting programmes
- + **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



VLB's Research Institute for Raw Materials is a reference laboratory and a board of arbitration.



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

✉ customer.service-fir@vlb-berlin.org

PURE YEAST AND STARTER CULTURES

The VLB yeast collection offers a wide range of yeast strains for the use in the brewing, beverage and distilling industry. Most of them are bottom (e.g. Pils, Lager or Märzen) or top fermenting types (e.g. wheat beer, Alt beer or Kölsch). We also offer yeast strains for beer specialties like Porter or Berliner Weisse (sour beer). Additionally, we also cultivate some wine, champagne and spirit yeasts as well as mixed cultivations for the production of non-alcoholic fermented beverages.

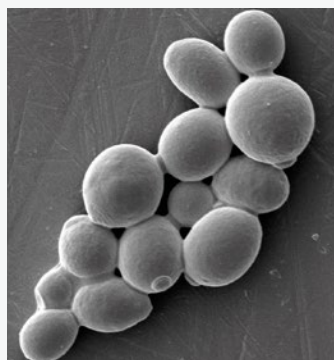
We deliver the pure yeast cultures worldwide as:

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

Additional services:

- + Screening and growing of **special yeast strains** in EBC test tubes
- + **Storage** of your **brewery's house yeast** as an external „safety“

Take advantage of the diversity which is offered by the application of special yeast strains in the brewery!



✉ hefe@vlb-berlin.org

🌐 www.vlb-berlin.org/en/yeast

WATER



The expertise in water and the relating service portfolio offered by the VLB has been used by the beverage industry for nearly a century. We are also offering our services as official analytical laboratory for drinking water for persons in charge of public and private drinking water systems. Our research results and the resultant analytics allow us competent advice and the provision of long-term training courses.

Water analysis

- + Qualified sampling (e.g. drinking water, waste 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
- + Disinfection

Our analytical water laboratory possesses:

- + an official approval regarding to indirect discharger ordinance (IndV) of the federal state Berlin
- + an official approval as analytical laboratory for drinking water (including qualified sampling).



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

✉ wmt@vlb-berlin.org

🌐 www.vlb-berlin.org/en/wmt

ANALYSIS OF BEER, BEVERAGES AND HOPS



No matter if it is about (non-alcoholic) beer, intermediate products, hops or filter aids – our laboratories offer a broad variety of analytical services for breweries and malt houses and the whole beverage industry.

✉ zentrallabor@vlb-berlin.org

🌐 www.vlb-berlin.org/en/beer

Analysis of beer and beverages:

- + **Classic beer analysis:** e.g. original gravity, alcohol, bitterness, foam stability by methods of MEBAK, EBC and ASBC
- + **Elemental analysis:** Heavy metals, beer-soluble parts of filter aids, trace analysis by ICP-MS
- + **Flavor analysis:** Aroma compounds in hops, fermentation by-products, sulfuric compounds, aging carbonyls by GC
- + **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 micro organisms
- + **Identification of turbidity:** Microscopic evaluation and particle measurement
- + **Determination of nutritional value:** BIG7, vitamins
- + **Certificates of free sale:** Analysis, microbiology, sensory evaluation and declaration check
- + **Analysis of sugars:** Sugar range by HPLC and enzymatic tests
- + **Isotonic beverages** by osmometry
- + **Spirits analysis** → p. 15

Analysis of hops:

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



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

TECHNOLOGICAL CONSULTANCY



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

✉ brewmaster@vlb-berlin.org

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

Our areas of expertise are:

- + **All fields of brewing and beverage technology:** Wort production, high gravity, yeast management, fermentation control, filtration, stabilization etc.
- + **Yeast optimization** by selection
- + **Filling lines:** Validation, optimization
- + **Optimization of all processes** in breweries, malt houses and at filling operations, troubleshooting
- + **Brewing trials** in our pilot brewery (wort production up to filling)
- + **Trouble-shooting** with special equipment (high-speed camera, endoscopy "Tank-o-Scope", acoustical camera)
- + **Microbiological** and hygiene check-ups
- + **Engineering** and validation of plants
- + **Feasibility** studies/expert opinions
- + **Engineering check:** Planning support with investment decision / validation of new plants / accompaniment of initial operations / functional acceptance checks
- + **Status control of hygienic design** of machines and corresponding equipment / CIP strategy checks / Material compatibility – Corrosion
- + **Validation** of storage and transport conditions
- + **Water and energy management** in filling and packaging lines, recording of energy flux
- + **Product development** (alcoholic & non-alcoholic beverages)

Whether your requirements are for a short term intervention on-site, a regular review or the final inspection of new machinery – VLB experts provide support for your company and help you to optimize your product and your production processes efficiently.

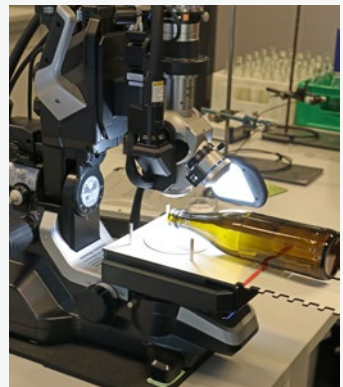
TESTING OF PACKAGING

Since 1972, the VLB has conducted a laboratory that is specialized on testing of packaging and means of packaging for the beverage industry.

The Testing Laboratory for Packaging of VLB Berlin is a special 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.

Our testing and service programme covers:

- + **Glass bottles:** Internal pressure resistance, impact resistance, dimensional stability, empty weight & volume, reusability - simulation of circulations, thermal shock resistance, surface finish, colour properties.
- + **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 cork:** 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 values, 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.
- + **Multi-Packs for bottles and cans:** Static tensile strength 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 water 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 the selection of adequate packaging



Contractual laboratory of the German Association of Brewers and of the Association of the German 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 a great potential for optimization 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.

✉ fim@vlb-berlin.org

🌐 www.vlb-berlin.org/en/fim

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

FIN Database

A central database maintains details, provided by the participating companies, of the vehicles and their superstructures used for beverage transportation (tractor units, semi-trailers, motor vehicles, trailers). Data is collated from the vehicle registration documents such as vehicle type, vehicle owner, load capacities and axle loads. This data is enhanced with information taken from vehicle inspection certificates such as the certification code according to DIN EN 12642 and includes for which loads the vehicle is suited. 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 security. Services offered by the database are available to registered members.



✉ fim@vlb-berlin.org

🌐 www.fin-datenbank.de

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 information, cheaply and easily, 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 together with their own consignment in the transport container. The subsequent recovery of the data, the analysis of the measurements and the presentation of the acquired information can be carried out, when desired, by experts from the VLB Berlin.



Mobile Motion Base

With our mobile motion base, we are able to carry out both static and dynamic trials to determine and optimize the secure loading of cargos for breweries, mineral water companies and other beverage producers. The stability of the cargo can be tested, altered and compared on-site under the same conditions. In this way, weak points can be identified and optimized. In the development phase for returnable crates, prototypes can be used to examine the recovery behavior after a simulated tilting test in practice. Adhesion friction and sliding friction coefficients 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.



BIOTECHNOLOGY

Microbiological research and the comprehension 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 (i.a. impedance measuring process, flow cytometry, electro-optical in-line measurement, scanning electron microscopic analyses)
- + Adaptation of traditional production processes of **complex fermentation products** (e.g. kombucha, water kefir) to industrial processes.
- + **Contract fermentations** 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. More than 1500 yeasts and 600 bacteria are available to our customers.

Strain collection

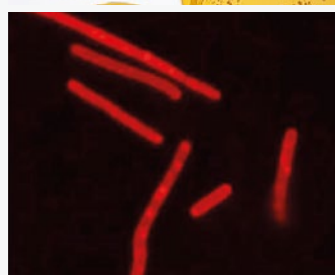
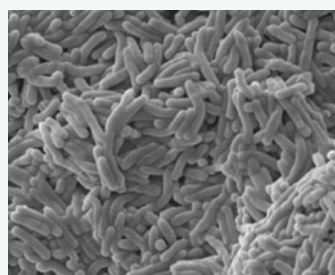
- + **Strain screening**
- + **Isolation and identification** of microorganisms / customer-oriented **long-term storage** of pure cultures
- + Production of **starter cultures** for food and beverage production
- + Production of **microorganism and spore preparations** and subsequent performance and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

Microbiological culture media

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

Services

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



✉ mibi@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 e.g. for alcohol-free beer, soft drinks, mineral water or fermented non-alcoholic beverages suitable instruments for quality assurance. We also offer compatible 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 products
- + **Microbiological analysis:** Determination and identification of beverage spoiling organisms
- + **Determination of nutritional value:** BIG7, vitamins
- + **Certificates of marketability:** Analysis, microbiology, sensory evaluation and declaration check
- + **Off-flavor 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 contaminations** with organic compounds (acetaldehyde, formaldehyde and others)

Miscellaneous tests

- + **Evaluation** of oxygen sensitivity of beverages
- + **Assessment** of flavors (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 optimization** 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
- + Optimizing 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 offers trainings and services specifically for this target group. We also organize 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 optimizing:** Raw materials, brew house, 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. Counter checks and ring analyses, VLB "Craft Beer Check" → p. 8
- + **Laboratory equipment** and consumables up to turn-key labs → p. 16

Workshops / Training courses

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

- + **Workshop "Craft Brewing in Practice":** 2 weeks of comprehensive practical training for pub and microbrewers in Berlin, Germany (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)
- + **Workshop "Micro Malting in Practice":** 6 days of comprehensive workshop for malting on a small scale in 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, Spanish, Russian and Chinese
- + **Textbook "The Yeast in the Brewery"** by Dr. Hans-J. Manger/ Prof. Gerolf Annemüller. Advanced knowledge about handling and application of yeast 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 Brewing and Malting Technologists"** by Dr. Hans-J. Manger/Prof. Gerolf Annemüller. 366 pp. In English
- + All publications in the specialist book range can be ordered online via our **book shop:** vlb-books.myshopify.com/



✉ brewmaster@vlb-berlin.org

PORTFOLIO FOR THE SPIRITS INDUSTRY

The VLB also offers a wide range of very different services and training courses for the spirits industry.

✉ spirituosenanalytik@vlb-berlin.org
🌐 spirituosen.ifgb.de

Analytics is an essential instrument for quality assurance. Analyses e.g. are used for documentary evidence of origin of raw materials and products. Analyses help to detect turbidity sources and are essential for proving counterfeits.

Standard analytics

- + Measuring of **density, extract and alcohol**
- + **Detecting volatile** components by Gas chromatography (GC) and GC Mass spectrometry (MS)
- + Analysis of **emulsion liqueur** (alcohol, density, extract, egg and fatty content)
- + High pressure 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. Asaron, Thujon
- + Determination of **volatile acids** by ion chromatography (IS)
- + Determination of **trace elements** by mass spectrometry (MS) with inductively coupled plasma mass spectrometry (ICP-MS)
- + Structural clarification of **organic substances** in pure or in a mixture by HPLC-MS/MS and GC-MS/MS
- + **Aroma profiling** by GC/MS
- + Determination of **off-flavor compounds**
- + Determination of **origin** by stable isotope analysis
- + Determination of **turbidity and sediments** by scanning electron microscope (REM-EDX) and Fourier transform infrared spectroscopy (FTIR)
- + **Microbiological tests**

On request, analysis results can be supplemented by informative interpretations. VLB carries out annually established market quality control 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
- + Rubric "IfGB aktuell" in our trade journal "Brauerei Forum"

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 German)
- + **Master distillers course:** 10-week training. Preparation for the discipline-specific part of the examinations Master Distiller at the German Chamber of Commerce and Industry. (in German)
- + **Special trainings:** Tailor-made trainings in-house or at the VLB Berlin. Quality assurance for lab staff, sensory evaluation, technology.

Testing of packaging → p. 10

Laboratory equipment → p. 16

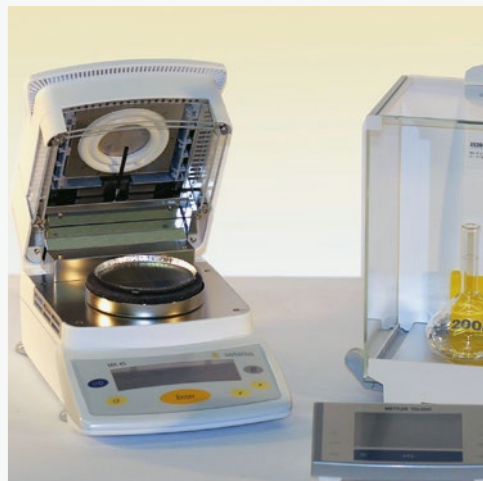
Convention IfGB-Forum

The IfGB promotes professional and scientific communication between research institutes and industry, between producers of spirits and their suppliers. The IfGB-Forum is an annual convention since 2003 which takes place at variable locations and with technical visits to various spirits companies or those of the supply industry.



✉ info@ifgb.de
🌐 spirituosen.ifgb.de

LABORATORY EQUIPMENT



VLB LaboTech GmbH is a 100 % subsidiary of VLB. It offers experience and assistance in all questions concerning laboratory equipment. The delivery program encloses new and approved laboratory devices and special products for quality assurance in the brewing, malting, beverage and spirits industries. VLB LaboTech also supplies consumables in the area of chemical and technical analyses and microbiology.

✉ labotech@vlb-berlin.org

🌐 www.vlb-berlin.org/en/labotech

Since we are independent of individual suppliers, VLB LaboTech guarantees objective consulting which leads to an optimal solution of the customers problems.

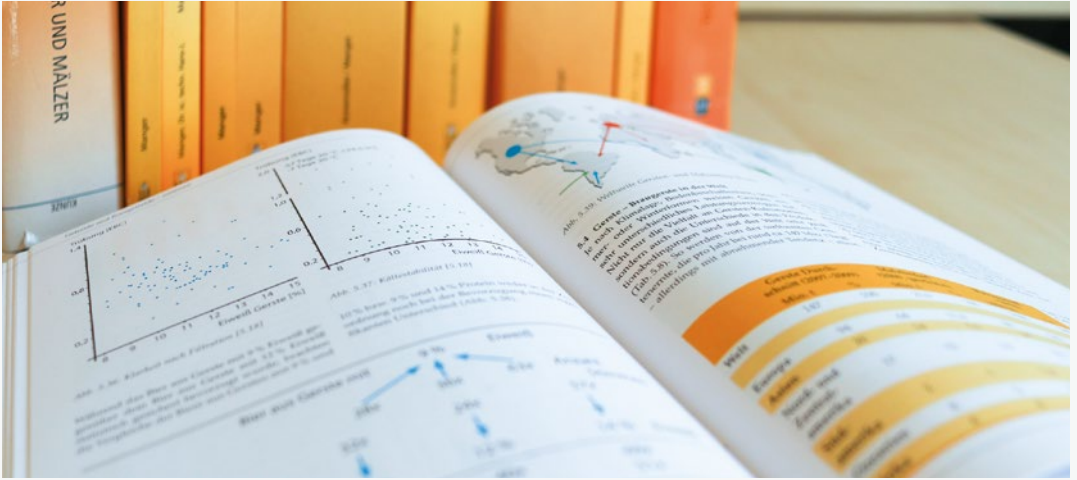
The product range includes

- + **Saccharometers**
- + Auxiliary tools for **aerometry**
- + Apparatus and instruments to **analyze raw materials**
- + Equipment for the identification of **hop compounds**
- + Tools for **water analyses**
- + Devices to analyze **mash, wort and beer**
- + **Articles of general use**
- + Equipment for the **microbiological laboratory**

Please ask for our comprehensive product catalogue!

In addition, we offer comprehensive tailor-made solutions for turn-key laboratories. Our portfolio includes assessment of floor space requirements for technical equipment as well as staff training for the implementation of new analytical devices. We evaluate your suppliers' price offers and offer assistance for investment decisions.

PUBLISHING



Textbooks

“**Technology Brewing and Malting**” by Wolfgang Kunze is the English translation of the leading German textbook for the training of brewers and maltsters. The book with its practice-oriented descriptions has become a unique source of knowledge for all brewing professionals. Since its first edition in 1961 the book has been translated into 7 languages including English, Russian, Chinese and Spanish. All in all more than 70 000 copies have been sold all over the world.

✉ buchbestellung
@vlb-berlin.org

All publications in the specialist book range can be ordered online via our **book shop**:

🌐 vlb-books.myshopify.com

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”

✉ editor@vlb-berlin.org

Our trade journal “Brauerei Forum” comes out eight times a year in German, twice a year in English (print and online).

🌐 www.brauerei-forum.de

Digital Media / Newsletter

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

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

✉ newsletter@vlb-berlin.org

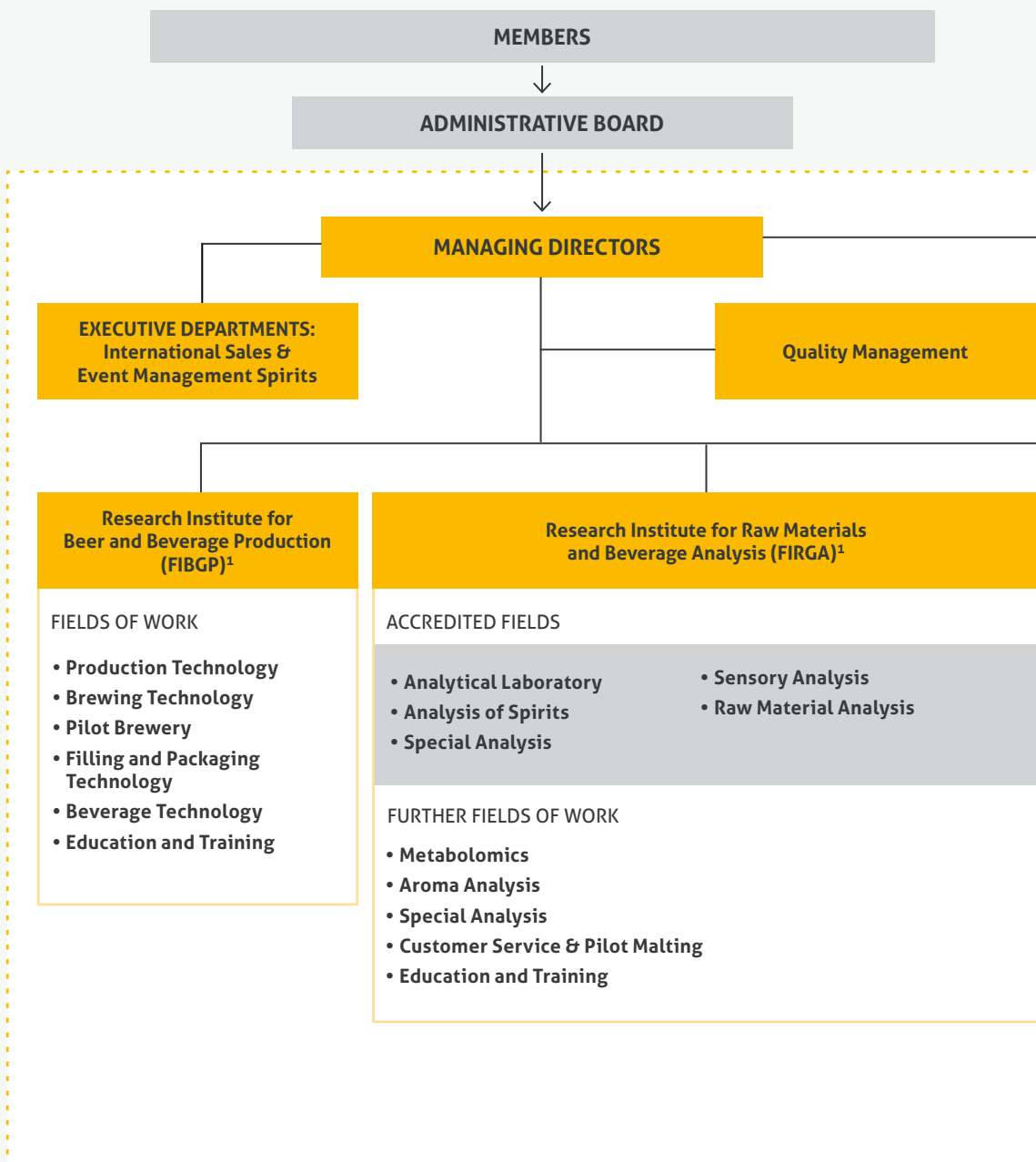
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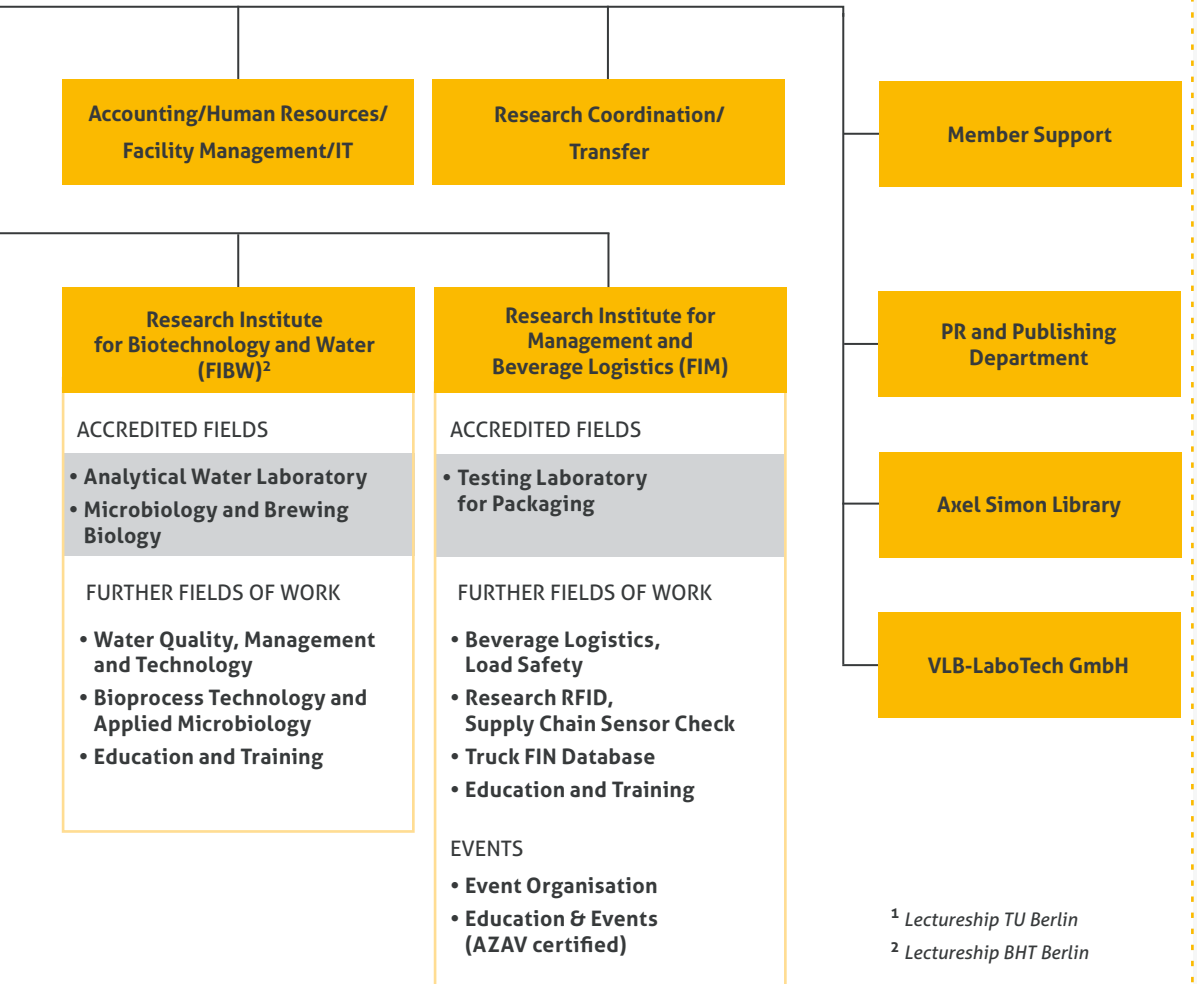
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