

Deutsche Akkreditierungsstelle

Annex to the Partial Accreditation Certificate D-PL-14082-01-01 according to DIN EN ISO/IEC 17025:2018

Valid from: 02.06.2023

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This annex is a part of the accreditation certificate D-PL-14082-01-00.

Holder of partial accreditation certificate:

AGROLAB LUFA GmbH
Dr.-Hell-Straße 6, 24107 Kiel, Germany

The testing laboratory meets the requirements of DIN EN ISO/IEC 17025:2018 to carry out the conformity assessment activities listed in this annex. The testing laboratory meets additional legal and normative requirements, if applicable, including those in relevant sectoral schemes, provided that these are explicitly confirmed below.

The management system requirements of DIN EN ISO/IEC 17025 are written in the language relevant to the operations of testing laboratories and confirm generally with the principles of DIN EN ISO 9001.

Tests in the fields:

Sensory, physical, physico-chemical, chemical, microbiological, molecular biological and immunological analysis of food and feed;
Microbiological, molecular biological and immunological analysis of surrounding samples, fitment and utensils in food and feed areas

This certificate annex is only valid together with the written accreditation certificate and reflects the status as indicated by the date of issue. The current status of any given scope of accreditation can be found in the directory of accredited bodies maintained by Deutsche Akkreditierungsstelle GmbH at <https://www.dakks.de>.

Within the given testing field marked with */**, the testing laboratory is permitted, without being required to inform and obtain prior approval from DAkkS, the following:

- * the free choice of standard or equivalent testing methods.
- ** the modification, development and refinement of testing methods.

The listed testing methods are exemplary.

The testing laboratory is permitted, without being required to inform and obtain prior approval from DAkkS, to use standards or equivalent testing methods listed here with different issue dates.

The testing laboratory maintains a current list of all testing methods within the flexible scope of accreditation.

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1 Analysis of food and feed

1.1 Sensory analysis of food and feed by simple descriptive tests **

DIN ISO 22935-2 2012-12	Milk and milk products – Sensory analysis – Part 2: Recommended methods for sensory evaluation (Modification: <i>Extension to matrix food</i>)
DIN ISO 22935-3 2012-12	Milk and milk products – Sensory analysis – Part 3: Guidance on a method for evaluation of compliance with product specifications for sensory properties by scoring (Modification: <i>Extension to matrix food</i>)
DIN 10964 2014-11	Sensory analysis – Simple descriptive test (Modification: <i>No coding of samples</i>)
MP-00167-DE 2022-09	Simple descriptive sensory analysis pet food

1.2 Physical, physico-chemical and chemical analysis of food and feed

1.2.1 Sample preparation and sample pretreatment

DIN EN 12393-2 2014-03	Foods of plant origin – Multiresidue methods for the determination of pesticide residues by GC or LC-MS/MS – Part 2: Methods for extraction and cleanup (Modification: <i>Extension to matrix food of animal origin and matrix feed</i>)
DIN EN 13805 2014-12	Food – Determination of trace elements – Pressure digestion
DGF C-VI 11a 2016	Fatty acid methyl ester transmethylation with boron trifluoride (BF ₃) (Modification: <i>Use also in milk fats, without C4 and C6 fatty acid determination; transesterification of the entire sample without prior fat extraction</i>)
DGF C-VI 11d 1998	Preparation of fatty acid methyl esters (alkaline transesterification) (Modification: <i>Transesterification with sodium methylate</i>)

1.2.2 Determination of parameters by physical, physico-chemical and chemical analysis

DIN 10311 1985-08	Determination of the water dispersion in butter; indicator paper method
DIN 10331 1996-03	Determination of the hardness of butter
VDLUFA III, 25.1 1997	Determination of net energy lactation (estimation method); gas formation according to Hohenheim feed value test
VDLUFA VI, C 12.2 2003	Milk and milk products, determination of density by the pycnometer
VDLUFA VI, C 26.4 1995	Milk and milk products, determination of bulk density
OIML R87 2016	Quantity of product in prepackages

1.2.3 Determination of parameters and ingredients by gravimetry in food and feed **

Regulation (EC) 152/2009 Annex III, A Last amended 27.01.2009	Commission Regulation (EC) No 152/2009 of 27 January 2009 laying down the methods of sampling and analysis for the official control of feed – Methods of analysis to control the composition of feed materials and compound feed – Determination of moisture (Modifications: <i>Single determinations, drying time 4h with vacuum variant, no final drying</i>)
Regulation (EC) 152/2009 Annex III, H Last amended 27.01.2009	Commission Regulation (EC) No 152/2009 of 27 January 2009 laying down the methods of sampling and analysis for the official control of feed – Methods of analysis to control the composition of feed materials and compound feed – Determination of crude oils and fats
Regulation (EC) 152/2009 Annex III, I Last amended 27.01.2009	Commission Regulation (EC) No 152/2009 of 27 January 2009 laying down the methods of sampling and analysis for the official control of feed – Methods of analysis to control the composition of feed materials and compound feed – Determination of crude fibre

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Regulation (EC) 152/2009 Annex III, M Last amended 27.01.2009	Commission Regulation (EC) No 152/2009 of 27 January 2009 laying down the methods of sampling and analysis for the official control of feed – Methods of analysis to control the composition of feed materials and compound feed – Determination of crude ash
Regulation (EC) 152/2009 Annex III, N Last amended 27.01.2009	Commission Regulation (EC) No 152/2009 of 27 January 2009 laying down the methods of sampling and analysis for the official control of feed – Methods of analysis to control the composition of feed materials and compound feed – Determination of ash which is insoluble in hydrochloric acid
ISO 6496 1999-08	Animal feeding stuffs – Determination of moisture and other volatile matter content (Modification: <i>Single determination</i>)
ISO 16472 2006-04	Animal feeding stuffs – Determination of amylase-treated neutral detergent fibre content (aNDF)
DIN EN ISO 13906 2008-11	Animal feeding stuffs – Determination of acid detergent fibre (ADF) and acid detergent lignin (ADL) contents
ASU L 00.00-18 1997-01 Corrigendum 2017-10	Determination of total fibre in food
ASU L 06.00-3 2014-08	Analysis of food – Determination of water content in meat and meat products – Gravimetric method – Reference method (Modification: <i>Extension to matrix food</i>)
ASU L 06.00-4 2007-04	Analysis of food – determination of ash in meat and meat products (Modification: <i>Extension to matrix food</i>)
ASU L 06.00-6 2014-08	Analysis of food – Determination of total fat content in meat and meat products – Weibull-Stoldt gravimetric method – Reference method (Modification: <i>Extension to matrix food</i>)
ASU L 17.00-1 2002-12	Determination of loss on drying in bread including small baked products made of bread dough (Modifications: <i>No pre-drying, drying time 4h, extension to matrix food</i>)

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ASU L 17.00-3 1982-05 Corrigendum 2002-12	Determination of ash in bread including small baked products made of bread dough (Modification: <i>Extension to matrix food</i>)
ASU L 17.00-4 2017-10	Determination of total fat content in bread including small baked products made of bread dough after acid digestion by extraction and gravimetry (Modification: <i>Extension to matrix dry food</i>)
VDLUFA III, 6.6.1 1997	Determination of enzyme-soluble organic matter (cellulase method)
VDLUFA VI, C 10.2 2000	Determination of total ash (Modification: <i>Ashing time 10h</i>)
VDLUFA VI, C 35.3 2020	Dry matter (water content); sea sand method (Modification: <i>Drying time 4h</i>)
CODEX STAN 70 1981	Codex Standard for Canned Tuna And Bonito
CODEX STAN 92 1981	Codex Standard for Quick Frozen Shrimps or Prawns
CODEX STAN 165 1989	Standard for Quick Frozen Blocks of Fish Fillets, Minced Fish Flesh and Mixtures
MP-00166-DE 2022-09	Weight percentages and number of components in food and feed

1.2.4 Determination of parameters and ingredients by titrimetry in food and feed **

Regulation (EC) 152/2009 Annex III, C Last amended 27.01.2009	Commission Regulation (EC) No 152/2009 of 27 January 2009 laying down the methods of sampling and analysis for the official control of feed – Methods of analysis to control the composition of feed materials and compound feed – Determination of the content of crude protein
Regulation (EC) 152/2009 Annex III, J Last amended 27.01.2009	Commission Regulation (EC) No 152/2009 of 27 January 2009 laying down the methods of sampling and analysis for the official control of feed – Methods of analysis to control the composition of feed materials and compound feed – Determination of sugar

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Regulation (EC) 152/2009 Annex III, K Last amended 27.01.2009	Commission Regulation (EC) No 152/2009 of 27 January 2009 laying down the methods of sampling and analysis for the official control of feed – Methods of analysis to control the composition of feed materials and compound feed – Determination of lactose
Regulation (EC) 152/2009 Annex III, Q Last amended 27.01.2009	Commission Regulation (EC) No 152/2009 of 27 January 2009 laying down the methods of sampling and analysis for the official control of feed – Methods of analysis to control the composition of feed materials and compound feed – Determination of chlorine from chlorides
ASU L 06.00-7 2014-08	Analysis of food – Determination of raw protein content in meat and meat products –Kjeldahl titrimetric method – Reference method (Modification: <i>Extension to matrix food</i>)
ASU L 13.00-37 2018-06	Animal and vegetable fats and oils – Determination of peroxide value – Iodometric (visual) endpoint determination
ASU L 17.00-6 1988-12	Analysis of food; determination of chloride for the calculation of salt in bread, including small baked products made of bread dough (Modification: <i>Extension to matrix food</i>)
ASU L 17.00-15 2013-08	Analysis of food – Determination of raw protein content in bread including small baked products made of bread dough – Kjeldahl method (Modification: <i>Extension to matrix food</i>)
VDLUFA III, 7.2.6 2012	Determination of degree of starch breakdown
VDLUFA VI, C 8.3 2000	Determination of the acidity of milk and liquid milk products
MP-02707-DE 2021-03	Determination of the peroxide value in food and feed after cold extraction

1.2.5 Determination of ingredients and additives by photometry in food and feed **

DIN EN 12014-3 2005-08	Food – Determination of nitrate and/or nitrite content – Part 3: Spectrometric determination of nitrate and nitrite content of meat products after enzymatic reduction of nitrate to nitrite (Modification: <i>Extension to matrix food and matrix feed of animal origin, clarification of sample extracts by centrifugation/filtration</i>)
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ASU L 00.00-94 2006-09	Analysis of food – Determination of inulin in foods – Enzymatic method
ASU L 06.00-8 2017-10	Analysis of food – Determination of hydroxyproline content in meat and meat products – Photometric method after acid digestion
ASU L 17.00-7 1983-11	Determination of lactose in bread including small baked products made of bread dough (Modification: <i>Extension to matrix food</i>)
VDLUFA III, 12.3.1 1988	Determination of added and natural carotenoids in feed (Modification: <i>Extension to matrix food supplements for lutein</i>)
VDLUFA III, 13.6.1 1983	Determination of choline chloride (Modification: <i>Determination from the aqueous extract</i>)
MP-02708-DE 2022-09	Photometric determination of nitrite and nitrate in food and feed after enzymatic reduction

1.2.6 Determination of ingredients by polarimetry in food and feed *

Regulation (EC) 152/2009, Annex III, L Last amended 27.01.2009	Commission Regulation (EC) No 152/2009 of 27 January 2009 laying down the methods of sampling and analysis for the official control of feed – Methods of analysis to control the composition of feed materials and compound feed – Determination of starch
ASU L 17.00-5 2003-12	Analysis of food – Determination of starch content in bread including small baked products made of bread dough

1.2.7 Determination of parameters and ingredients by electrode measurement in food and feed *

DIN EN 16279 2012-09	Animal feeding stuffs – Determination of fluoride content after hydrochloric acid treatment by ion-sensitive electrode method (ISE)
ASU L 06.00-2 1980-09	Measurement of pH in meat and meat products
ASU L 26.04-3 1987-06	Analysis of food; measurement of pH in the cover brine and press liquor for sauerkraut

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ASU L 26.11.03-3 1983-05	Determination of pH of tomato purée
ASU L 49.00-7 2000-07	Analysis of food – Determination of fluoride in dietary foods with the ion-sensitive electrode (Modification: <i>Extension to matrix food</i>)
VDLUFA VI, C 8.2 2000	Acidity; pH value in milk and milk products
VDLUFA III, 18.1 1976	Silage, determination of pH (Modification: <i>Extension to matrix feed</i>)

1.2.8 Determination of ingredients by combustion in food and feed

DIN EN ISO 16634-1 2009-07	Food products – Determination of the total nitrogen content by combustion according to the Dumas principle and calculation of the crude protein content – Part 1: Oilseeds and animal feeding stuffs (Modification: <i>Use of argon as carrier gas</i>)
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1.2.9 Determination of elements by inductively coupled plasma optical emission spectrometry (ICP-OES) in food and feed *

DIN EN 15621 2017-10	Animal feeding stuffs – Determination of calcium, sodium, phosphorus, magnesium, potassium, sulphur, iron, zinc, copper, manganese and cobalt after pressure digestion by ICP-AES (Modification: <i>Extension for boron, reduction of the method for cobalt, digestion of premixes with aqua regia in the Odlab system</i>)
DIN EN 16943 2017-07	Food – Determination of calcium, copper, iron, magnesium, manganese, phosphorus, potassium, sodium, sulphur and zinc by ICP-OES (Modification: <i>Digestion of premixes with aqua regia in the Odlab system, no use of hydrochloric acid for standard production</i>)

1.2.10 Determination of elements by inductively coupled plasma mass spectrometry (ICP-MS) in food and feed *

DIN EN 15111 2007-06	Food – Determination of trace elements – Determination of iodine by ICP-MS (inductively coupled plasma mass spectrometry)
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DIN EN 15763 2010-04	Food – Determination of trace elements – Determination of arsenic, cadmium, mercury and lead in food by inductively coupled plasma mass spectrometry (ICP-MS) after pressure digestion (Modification: <i>Extension for the following elements: Al, Co, Cr, Mo, Ni, Sb, Se, Sn, Tl, U, V, Cu, Mn, reduction of method for Hg</i>)
DIN EN 16802 2016-07	Food – Determination of elements and their chemical species – Determination of inorganic arsenic in food of marine and plant origin by anion-exchange HPLC-ICP-MS
DIN EN 17050 2017-11	Animal feeding stuffs – Methods of sampling and analysis – Determination of iodine in animal feed by ICP-MS
DIN EN 17053 2018-03	Animal feeding stuffs – Methods of sampling and analysis – Determination of trace elements, heavy metals and other elements in feed by ICP-MS (multi-method) (Modification: <i>Extension for Al, Cr, Ni, Sb, Sn and V, reduction of method for Hg</i>)

1.2.11 Determination of elements by atomic absorption spectrometry (CV-AAS) in food and feed *

DIN EN 13806 2002-11	Food – Determination of trace elements – Determination of mercury by cold-vapour atomic absorption spectrometry (CVAAS) after pressure digestion
DIN EN 16277 2012-09	Animal feeding stuffs – Determination of mercury by cold-vapour atomic absorption spectrometry (CVAAS) after microwave pressure digestion (extraction with 65% nitric acid and 30% hydrogen peroxide) (Modification: <i>Without hydrogen peroxide</i>)

1.2.12 Determination of nitrate by ion chromatography (IC) in food

DIN EN 12014-2 2018-02	Food – Determination of nitrate and/or nitrite content – Part 2: HPLC/IC method for the determination of nitrate content of vegetables and vegetable products (Modification: <i>Extraction at 70 °C</i>)
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1.2.13 Determination of ingredients, additives and residues of pharmacological substances by liquid chromatography (LC) with conventional detectors (DAD, ELSD, FLD, ELCD) in food and feed **

<p>Regulation (EC) 152/2009 Annex III, F Last amended 27.01.2009</p>	<p>Commission Regulation (EC) No 152/2009 of 27 January 2009 laying down the methods of sampling and analysis for the official control of feed – Methods of analysis to control the composition of feed materials and compound feed – Determination of amino acids (except tryptophane) (Modification: <i>Extension to infant formula and dietary food</i>)</p>
<p>Regulation (EC) 152/2009 Annex III, G Last amended 27.01.2009</p>	<p>Commission Regulation (EC) No 152/2009 of 27 January 2009 laying down the methods of sampling and analysis for the official control of feed – Methods of analysis to control the composition of feed materials and compound feed – Determination of tryptophan (Modification: <i>Extension to matrix food</i>)</p>
<p>Regulation (EC) 152/2009 Annex IV, A Last amended 27.01.2009</p>	<p>Commission Regulation (EC) No 152/2009 of 27 January 2009 laying down the methods of sampling and analysis for the official control of feed – Methods of analysis to control the composition of feed materials and compound feed – Determination of vitamin A (Modification: <i>Extension to matrix food, saponification without addition of Na₂S, single extraction of a defined aliquot of the saponification preparation in 15 ml petroleum spirit, optional sample grinding</i>)</p>
<p>Regulation (EC) 152/2009 Annex IV, B Last amended 27.01.2009</p>	<p>Commission Regulation (EC) No 152/2009 of 27 January 2009 laying down the methods of sampling and analysis for the official control of feed – Methods of analysis to control the composition of feed materials and compound feed – Determination of vitamin E (Modification: <i>Extension to matrix food, saponification without addition of Na₂S, single extraction of a defined aliquot of the saponification preparation in 15 ml petroleum spirit, optional sample grinding</i>)</p>
<p>DIN EN ISO 9167 2020-03</p>	<p>Rapeseed and rapeseed meals – Determination of glucosinolates content – Method by high-performance liquid chromatography (Modification: <i>Extraction with 70% methanol</i>)</p>

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DIN EN 12821 2009-08	Food – Determination of vitamin D by high performance liquid chromatography – Measurement of cholecalciferol (D ₃) or ergocalciferol (D ₂) (Modification: <i>Saponification without addition of Na₂S, single extraction of a defined aliquot of the saponification preparation in 15 ml petroleum spirit, optional sample grinding</i>)
DIN EN 12822 2014-08	Food – Determination of vitamin E by high performance liquid chromatography – Measurement of α-, β-, γ- and δ-tocopherols (Modification: <i>Extension to matrix feed, single extraction of a defined aliquot of the saponification preparation in 15 ml petroleum spirit/diethyl ether (80:20)</i>)
DIN EN 12823-2 2000-07	Food – Determination of vitamin A by high performance liquid chromatography – Part 2: Measurement of β-carotene (Modification: <i>Extension to matrix feed, single extraction</i>)
DIN EN 14122 2014-08	Food – Determination of vitamin B ₁ by high performance liquid chromatography (Modification: <i>Extension to matrix feed, reduced autoclaving time</i>)
DIN EN 14152 2014-08	Food – Determination of vitamin B ₂ by high performance liquid chromatography (Modification: <i>Extension to matrix feed, reduced autoclaving time</i>)
DIN EN 14663 2006-03	Food – Determination of vitamin B ₆ (including glucosidic bound compounds) with HPLC (Modification: <i>Extension to matrix feed, reduced autoclaving time</i>)
DIN EN 15086 2006-06	Food – Determination of isomalt, lactitol, maltitol, mannitol, sorbitol and xylitol in food (Modification: <i>Use of a light scattering detector (ELSD), use of a HILIC HPLC column, no determination of isomalt</i>)
DIN 10758 1997-05	Analysis of honey – Determination of the content of saccharides fructose, glucose, sucrose, turanose and maltose – HPLC method (Modification: <i>Extension to matrix food and matrix feed; use of a light scattering detector (ELSD), use of a HILIC HPLC column, no determination of turanose, extension of the method for lactose</i>)
AOAC 999.12 2003	Taurine in pet food
ASU L 18.00-16 1999-11	Analysis of food – Determination of theobromine and caffeine in pastries (Modification: <i>Extension to matrix food and matrix feed</i>)

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VDLUFA III, 4.11.5 1997	Determination of methionine in feed with high chloride content
VDLUFA III, 13.8.1 1997	Determination of vitamin D ₃ in feed; HPLC method (Modification: <i>Saponification without addition of Na₂S, single extraction of a defined aliquot of the saponification preparation in 15 ml petroleum spirit, optional sample grinding</i>)
VDLUFA III, 13.9.1 2006	Feed – Determination of B vitamins including nicotinic acid; HPLC method (Modification: <i>Extension to matrix food, no determination of nicotinic acid</i>)
VDLUFA III, 14.22.1 2006	Determination of monensin sodium (HPLC method) (Modification: <i>Extension to determination of lasalocid, narasin and maduramycin</i>)
VDLUFA III, 14.23.1 2006	Determination of salinomycin sodium (HPLC method)
MP-00191-DE 2017-12	Determination of menadione (vitamin K ₃) in feed; HPLC method
MP-00192-DE 2020-08	Determination of vitamin K ₁ (phylloquinone); HPLC method with post-column derivatisation
MP-00231-DE 2021-01	Determination of preservatives in food by HPLC
MP-00240-DE 2022-08	Determination of taurine in selected food and beverages by HPLC
MP-00244-DE 2021-02	Determination of coumarin in food samples by HPLC-UV
MP-00247-DE 2021-01	Determination of nicarbazin in feed, premixes and high concentrates by HPLC
MP-01280-DE 2021-02	Determination of ethoxyquin, propyl gallate, butylated hydroxyanisole (BHA) and butylated hydroxytoluene (BHT) by HPLC
MP-01308-DE 2022-08	Determination of betaine and carnitine in concentrates by HPLC

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MP-01372-DE 2022-09	Chromatographic determination of vitamin D ₂ , D ₃ and 25-OH-D ₃ in food and feed and ergosterol in food
MP-01373-DE 2017-12	Determination of vitamin E acetate in feed and food, HPLC method
MP-01375-DE 2018-02	Determination of vitamin C (ascorbic acid) in food and feed, HPLC method
MP-02428-DE 2022-09	Determination of vitamin D ₃ and D ₂ in high concentrates and 25-hydroxy vitamin D ₃ (precursor of the biologically active vitamin D ₃ form (calcitriol)) in premixes, HPLC method
MP-02570-DE 2021-12	Determination of tocopherol isomer mixtures in concentrates, HPLC method
1.2.14	Determination of ingredients, pesticide residues, residues of pharmacologically active substances and organic contaminants by liquid chromatography (LC) with mass selective detectors (MS/MS) in food and feed **
EN 15662 2018-05	Foods of plant origin – Multimethod for the determination of pesticide residues by GC- and LC-based analysis following acetonitrile extraction/partitioning and cleanup by dispersive SPE – Modular QuEChERS-method (Modification: <i>Extension to matrix food of animal origin and matrix feed</i>)
DIN EN 15055 2006-08	Non-fatty foods – Determination of chlormequat and mepiquat – LC-MS/MS method (Modification: <i>Extension to matrix food and matrix feed, 60 min extraction by shaking</i>)
ASU L 15.01/02-5 2012-01	Analysis of food – Determination of ergot alkaloids in rye and wheat – HPLC method with cleanup on a basic aluminium oxide solid phase (Modification: <i>Extension to matrix cereals and cereal products, no cleanup of extracts, measurement with LC-MS/MS</i>)
MP-00180-DE 2022-03	Determination of selected mycotoxins by HPLC-MS/MS
MP-00182-DE 2021-01	Determination of chloramphenicol, ivermectin and benzimidazoles by HPLC-MS/MS (acetonitrile extraction)

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MP-00211-DE 2020-11	Determination of glyphosate, AMPA and glufosinate as FMOC derivatives (HPLC-MS/MS method)
MP-00225-DE 2021-01	Determination of polar pesticides in food and feed (HPLC-MS/MS method)
MP-00234-DE 2020-08	Determination of melamine and cyanuric acid in food and feed by HPLC-MS/MS
MP-00237-DE 2022-08	Determination of acrylamide in food and feed – HPLC-MS/MS method
MP-00238-DE 2020-06	Determination of selected antibiotics in food and feed by HPLC-MS/MS (buffer extraction)
MP-00242-DE 2022-08	Determination of polypeptides in feed by HPLC-MS/MS (acid extraction)
MP-00245-DE 2020-12	Determination of fumonisins (mycotoxins) by HPLC-MS/MS method
MP-01306-DE 2019-12	Determination of patulin in fruit and fruit preparations by LC-MS/MS
MP-01309-DE 2021-03	Determination of total folate content in food, LC-MS/MS method
MP-01372-DE 2022-09	Chromatographic determination of vitamin D ₂ , D ₃ and 25-OH-D ₃ in food and feed and ergosterol in food
MP-02089-DE 2020-10	Determination of aflatoxin M1 in milk and milk products by LC-MS/MS
MP-02090-DE 2021-03	Determination of sugars (residues and low levels) in selected food by LC-MS/MS
MP-02177-DE 2020-12	Determination of diquat and paraquat in plant-based food and feed by LC/MS-MS
MP-02196-DE 2020-02	Determination of nicotine in foodstuff and feedstuff samples by LC-MS/MS
MP-02331-DE 2022-09	Determination of PTU and ETU in food and feed by LC-MS/MS

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MP-02601-DE 2021-03	Determination of purines in dry and wet feed by LC-MS/MS
MP-02602-DE 2021-03	Determination of pyrrolizidine alkaloids and tropane alkaloids in plant material by LC-MS/MS
MP-02998-DE 2022-09	Determination of residues of selected lactam antibiotics in food of animal origin by HPLC-MS/MS
MP-03063-DE 2022-07	Determination of residues of selected aminoglycoside antibiotics in food of animal origin by HPLC-MS/MS
MP-03096-DE 2022-09	Determination of glycoalkaloids (solanine, chaconine) in food and feed by LC-MS/MS
MP-03124-DE 2022-09	Determination of total carnitine in food and feed by LC-MS/MS
MP-03126-DE 2022-08	Determination of Alternaria toxins in plant products by HPLC-MS/MS

1.2.15 Determination of ingredients and pesticide residues by gas chromatography (GC) with conventional detectors (FID, ECD, FPD) in food and feed **

ISO 15885 IDF 184 2002-11	Milk fat – Determination of the fatty acid composition by gas-liquid chromatography (Modification: <i>Without drying oven or nitrogen treatment</i>)
DIN EN 12393-3 2014-01	Foods of plant origin – Multiresidue methods for the determination of pesticide residues by GC or LC-MS/MS – Part 3: Determination and confirmatory tests (Modification: <i>Extension to matrix food and matrix feed</i>)
ASU L 05.00-16 2014-08	Analysis of food – Determination of cholesterol content in eggs and egg products – Gas chromatographic method (Modification: <i>Extension to matrix food</i>)
DGF C-VI 10a 2016	Gas chromatography: Analysis of fatty acids and fatty acid distribution (Modification: <i>Use also in milk fats, without C4 and C6 fatty acid determination</i>)

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1.2.16 Determination of pesticide residues and contaminants by gas chromatography (GC) with mass selective detectors (MS, MS/MS, HRMS) in food and feed **

EN 15662 2018-05	Foods of plant origin – Multimethod for the determination of pesticide residues by GC- and LC-based analysis following acetonitrile extraction/partitioning and cleanup by dispersive SPE – Modular QuEChERS-method (Modification: <i>Extension to matrix food of animal origin and matrix feed</i>)
DIN EN 13191-2 2000-10	Non-fatty foods – Determination of bromide residues – Part 2: Determination of inorganic bromide (Modification: <i>Measurement by GC-MS</i>)
DIN EN 12393-3 2014-01	Foods of plant origin – Multiresidue methods for the determination of pesticide residues by GC or LC-MS/MS – Part 3: Determination and confirmatory tests (Modification: <i>Extension to matrix food and matrix feed</i>)
DIN EN 12396-2 1998-12	Non-fatty foods – Determination of dithiocarbamate and thiuram disulfide residues – Part 2: Gas chromatographic method (Modification: <i>Measurement by GC-MS, extension to matrix low-fat feed, lower sample weight</i>)
DIN EN 16215 2012-07	Animal feeding stuffs – Determination of dioxins and dioxin-like PCBs by GC/HRMS and of indicator PCBs by GC/HRMS (Modification: <i>Extension to matrix food; measurement also by GC-MS/MS</i>)
VDLUFA VII, 3.3.3.2 2011	Determination of polycyclic aromatic hydrocarbons (PAHs) in plant material (Modification: <i>Extension to matrix food and matrix feed; measurement by GC-MS/MS; modified composition of extraction solvent; no cleanup on silica gel and Sephadex</i>)
MP-00183-DE 2021-03	Determination of volatile organic compounds (BTEX, VOC, hexane, hexanal, furan) in food and feed by headspace GC-MS
MP-02840-DE 2021-10	Determination of ethylene oxide and 2-chloroethanol in food and feed by GC-MS/MS

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1.3 Microbiological analysis of food and feed

1.3.1 Sample preparation and sample pretreatment by dilution for microbiological analysis of food and feed *

DIN EN ISO 6887-2
2017-07 Microbiology of food and animal feeding stuffs – Preparation of test samples, initial suspension and decimal dilutions for microbiological examination – Part 2: Specific rules for the preparation of meat and meat products

DIN EN ISO 6887-5
2011-01 Microbiology of food and animal feeding stuffs – Preparation of test samples, initial suspension and decimal dilutions for microbiological examination – Part 5: Specific rules for the preparation of milk and milk products

1.3.2 Determination of vitamins by microbiological test systems in food and feed **

DIN EN 14131
2003-09 Food – Determination of folate by microbiological assay
(Modification: *Adaptation of the enzyme treatment process step; additional determination of free folate, extension to matrix feed*)

USP 21 Method 88
1986 Biological Tests and Assays – Biotin Assay
(determination of the microbiological activity of biotin)
(Modification: *Hydrolytic release of bound biotin*)

USP 34 Method 441
2011 Niacin or Niacinamide Assay
(determination of the microbiological activity of niacin and niacinamide)
(Modification: *Extraction with HCl in steaming pot*)

USP 39 Method 91
2016 Biological Tests and Assays – Calcium Pantothenate Assay
(determination of calcium D-pantothenate)
(Modification: *Fermentative release of bound pantothenic acid*)

USP 39 Method 171
2016 Biological Test and Assays – Vitamin B₁₂ Activity Assay
(determination of the microbiological activity of vitamin B₁₂)
(Modification: *The concentration of sodium sulphite in the extraction solution is not adjusted to the sample weight*)

MP-00171-DE
2023-01 Determination of the microbiological activity of choline in food and feed

MP-02147-DE
2023-01 Microbiological determination of inositol in food and feed

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1.3.3 Determination of bacteria, yeasts and moulds by cultural microbiological methods in food and feed **

ISO 4831 2006-08	Microbiology – Horizontal method for the detection and enumeration of coliforms – MPN technique
ISO 4832 2006-02	Microbiology – Horizontal method for the enumeration of coliforms – Colony-count technique
ISO 6579-1 2017-02	Microbiology of the food chain – Horizontal method for the detection, enumeration and serotyping of salmonella – Part 1: Detection of <i>Salmonella</i> spp.
ISO 6611 2004-10	Milk and milk products – Enumeration of colony-forming units of yeasts and/or moulds – Colony-count technique at 25 °C (Modification: <i>Extension to bakery products, tea, herbs and spices, fruit and fruit products</i>)
ISO 7251 2005-02	Microbiology of food and animal feeding stuffs – Horizontal method for the detection and enumeration of presumptive <i>Escherichia coli</i> -- Most probable number technique
ISO 10272-2 2017-06	Microbiology of the food chain – Horizontal method for the detection and enumeration of <i>Campylobacter</i> spp. – Part 2: Colony-count technique
ISO 15213 2003-05	Microbiology of food and animal feeding stuffs – Horizontal method for the enumeration of sulphite-reducing bacteria growing under anaerobic conditions
ISO 15214 1998-08	Microbiology of food and animal feeding stuffs – Horizontal method for the enumeration of mesophilic lactic acid bacteria – Colony-count technique at 30 °C
ISO 21527-1 2008-07	Horizontal method for the enumeration of yeasts and moulds – Colony-count technique – Part 1: Colony count technique in products with water activity greater than 0,95
ISO 21527-2 2008-07	Horizontal method for the enumeration of yeasts and moulds – Colony-count technique – Part 2: Colony count technique in products with water activity equal to or less than 0,95
ISO 21528-1 2017-06	Microbiology of the food chain – Horizontal method for the detection and enumeration of Enterobacteriaceae – Part 1: Detection of Enterobacteriaceae

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ISO 21871 2006-01	Microbiology of food and animal feeding stuffs – Horizontal method for the determination of low numbers of presumptive <i>Bacillus cereus</i> – Most probable number technique and detection method (Modification: <i>Instead of MYP agar, BACARA agar is used for confirmation</i>)
DIN EN ISO 4833-1 2013-12	Microbiology of the food chain – Horizontal method for the enumeration of microorganisms – Part 1: Colony-count technique at 30 °C by the pour plate technique (Modification for enumeration of thermophilic microorganisms: <i>Incubation at 55 °C</i>)
DIN EN ISO 4833-2 2022-05	Microbiology of the food chain – Horizontal method for the enumeration of microorganisms – Part 2: Colony count at 30 °C by the surface plating technique
DIN EN ISO 6888-1 2022-06	Microbiology of the food chain - Horizontal method for the enumeration of coagulase-positive staphylococci (<i>Staphylococcus aureus</i> and other species) – Part 1: Method by Baird-Parker agar medium
DIN EN ISO 6888-3 2005-07	Microbiology of food and animal feeding stuffs – Horizontal method for the enumeration of coagulase-positive staphylococci (<i>Staphylococcus aureus</i> and other species) – Part 3: Detection and MPN technique for low numbers (Modification: <i>Confirmation of the coagulase reaction with Baird Parker Rabbit Plasma Fibrinogen Agar</i>)
DIN EN ISO 7937 2004-11	Microbiology of food and animal feeding stuffs – Horizontal method for the enumeration of <i>Clostridium perfringens</i> – Colony-count technique
DIN EN ISO 13720 2010-12	Meat and meat products – Enumeration of presumptive <i>Pseudomonas</i> spp.
DIN EN ISO 16649-3 2018-01	Microbiology of the food chain – Horizontal method for the enumeration of beta-glucuronidase-positive <i>Escherichia coli</i> – Part 3: Detection and most probable number technique by 5-bromo-4-chloro-3-indolyl- β -D-glucuronide

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DIN EN ISO 21528-2 2019-05	Microbiology of the food chain – Horizontal method for the detection and enumeration of Enterobacteriaceae – Part 2: Colony-count technique (Modification: <i>Confirmation of culture-typical colonies by MALDI-TOF</i>)
DIN ISO 16649-2 2020-12	Microbiology of food and animal feeding stuffs – Horizontal method for the enumeration of β -glucuronidase-positive <i>Escherichia coli</i> – Part 2: Colony-count technique at 44 °C by 5-bromo-4-chloro-3-indolyl β -D-glucuronide
VDLUFA III, 28.1.2 2012	Determination of the germ content of bacteria, yeasts, moulds and black fungi
VDLUFA III, 28.1.3 2012	Procedures for the identification of bacteria, yeasts, moulds and black fungi as indicator germs typical of a product or indicating spoilage
VDLUFA VI, M 7.8.2 1993	Determination of enterococci; colony-count technique with kanamycin-esculin-azide agar
VDLUFA VI, M 7.12.2 1993	Determination of pseudomonads: Colony count method with C-F-C-selective agar
VDLUFA VI, M 7.13 1996	Determination of thermoduric (thermoreistant) microorganisms
VDLUFA VI, M 7.17.2 1993	Determination of spores of aerobic spore formers (<i>Bacillus</i>) (Modification: <i>Extension to matrix food; use of plate count agar (PCA)</i>)
VDLUFA VI, M 7.18.2.1 1996	Detection of anaerobic spore formers (<i>Clostridium</i>) (Modification: <i>Extension to matrix food and matrix feed additives</i>)
ICUMSA GS2/3-41 2011	The Determination of the Total Mesophilic Bacterial Count in Refined Sugar Products by the Pour Plate Method or the Membrane Filtration Method (Modification: <i>Use of buffered peptone water for initial dilution; analysis as single analysis; increased count limit per plate, no membrane filtration</i>)

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ICUMSA GS2/3-47 2015	The Determination of Yeasts and Moulds in Refined Sugar Products by the Pour Plate Method or the Membrane Filter Method (Modification: <i>Use of buffered peptone water for initial dilution; analysis as single analysis; increased count limit per plate, no membrane filtration, no low germ levels < 10 CFU</i>)
bioMérieux BACARA™ 049969-1 2018-09	Validated for the enumeration of presumptive <i>Bacillus cereus</i>
Nordisk Metodikkomitté för Livsmedel. NMKL No. 71, 5. Ed., 1999	Detection of <i>Salmonella</i> spp. in food (<i>Salmonella. Påvisning i livsmedel</i>) (Modification: <i>Extension to matrix feed, confirmation by MALDI-TOF</i>)
Nordisk Metodikkomitté för Livsmedel. NMKL No. 86, 5. Ed., 2013	Determination of aerobic microorganisms in food (<i>Aerobe mikroorganismer. Bestemmelse i næringsmidler</i>) (Modification: <i>Extension to matrix feed</i>)
MP-00109-DE 2023-01	Determination of spores of <i>Bacillus</i> spp. and other aerobic spore formers in feed
MP-01152-DE 2021-07	Culture detection method for <i>Cronobacter</i> spp. and in particular <i>Cronobacter sakazakii</i> by Rapid' <i>Sakazakii</i> Agar® in food and surrounding samples
MP-02380-DE 2020-10	Detection of <i>Listeria</i> spp. and <i>L. monocytogenes</i> and quantification of <i>L. monocytogenes</i> by RAPID' <i>L.mono</i> Agar® in food and surrounding samples
MP-02642-DE 2023-01	Enumeration of <i>Pseudomonas</i> spp. and <i>Aeromonas</i> spp. in ready meals, fishery products and surrounding controls

1.3.4 Identification and typing of bacteria by MALDI-TOF in food and feed **

AOAC 2017.10 2017	Confirmation and identification of <i>Listeria monocytogenes</i> , <i>Listeria</i> species and other gram-positive organisms
MP-01115-DE 2023-01	Identification of bacteria by MALDI-TOF (Restriction: <i>Here for gram-negative bacteria</i>)

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1.3.5 Detection of antimicrobial substances by microbiological test systems

DSM Food Specialities B. V. Delvotest® T 28/02-02/12 2014-12	Standard diffusion test for detection of antibacterial substances in milk
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1.4 Molecular biological analysis of food and feed

1.4.1 Analysis of nucleic acids by real-time PCR

1.4.1.1 Detection of bacteria by real-time PCR in food and feed **

DIN CEN ISO/TS 13136 2013-04	Microbiology of food and animal feed – Real-time polymerase chain reaction (PCR)-based method for the detection of food-borne pathogens – Horizontal method for the detection of Shiga toxin-producing <i>Escherichia coli</i> (STEC) and the determination of O157, O111, O26, O103 and O145 serogroups
ASU L 00.00-98 2007-04	Analysis of food. Qualitative detection of <i>Salmonella</i> in food. Real-time PCR method (Modification: <i>Extension to matrix feed</i>)
MP-00158-DE 2021-08	Detection of <i>Clostridium estertheticum</i> and <i>Clostridium estertheticum</i> -like bacteria in meat juice by real-time PCR
MP-01236-DE 2022-03	Analysis of food and feed for the presence of <i>Listeria monocytogenes</i> by real-time PCR
MP-01539-DE 2022-12	Analysis of the presence of the most important virulence genes and the reproductive viability of Shiga toxin-producing <i>Escherichia coli</i> (STEC, VTEC) by real-time PCR
MP-01540-DE 2022-07	Analysis of food and feed for the presence of various pathogenic bacteria by real-time PCR

1.4.1.2 Detection of animal species by real-time PCR in food and feed **

EURL-AP recommended protocol 2013-02	Detection of horse DNA by real-time PCR
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EURL-AP SOP 2021-05	Detection of ruminant DNA in feed by real-time PCR
EURL-AP SOP 2021-09	Detection of pig DNA in feed by real-time PCR
EURL-AP SOP 2021-09	Detection of poultry (chicken and turkey) DNA in feed by real-time PCR
MP-00160-DE 2023-01	Analysis for the presence of specific bovine, porcine, ovine, caprine DNA in food and feed by real-time PCR
MP-02523-DE 2021-08	Detection of ostrich DNA in food and feed by real-time PCR
MP-02524-DE 2021-08	Detection of pheasant DNA in food and feed by real-time PCR
MP-02594-DE 2021-08	Detection of kangaroo DNA in food and feed by real-time PCR
MP-02679-DE 2022-06	Detection of different fish species by real-time PCR

1.4.1.3 Detection of allergens and plant species by real-time PCR in food and feed **

DIN EN 15634-2 2019-12	Analysis of food – Detection of a specific DNA sequence from celery (<i>Apium graveolens</i>) in cooked sausages by real-time PCR (Modification: <i>DNA extraction is carried out with the Maxwell RSC machine and the AS1600 kit</i>)
MP-01541-DE 2023-03	Analysis of food and surrounding samples for the presence of celery DNA by real-time PCR
MP-02378-DE 2022-03	Determination of the soy content in feed by real-time PCR
MP-03136-DE 2022-06	Detection of wasabi DNA in food by real-time PCR

1.4.1.4 Determination of genetically modified plants by real-time PCR in food and feed **

ASU G 30.40-17 2017-10	Detection of cauliflower mosaic virus DNA (ORF V) in plant material by real-time PCR – Element-specific method
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MP-00212-DE 2022-12	Quantification of Roundup Ready soy (event 40-3-2) in food by quantitative real-time PCR
MP-00213-DE 2022-10	Quantification of the rapeseed GMO event GT73/RT73 in food and feed by quantitative real-time PCR
MP-00214-DE 2022-12	Quantification of A2704-12 soy in food and feed by quantitative real-time PCR
MP-00215-DE 2022-12	Quantification of RR2Yield soy (event MON89788) in food and feed by quantitative real-time PCR
MP-00216-DE 2022-11	Quantification of the rapeseed GMO event T45 in food and feed by quantitative real-time PCR
MP-00217-DE 2022-11	Quantification of the rapeseed GMO event Ms8 in food and feed by quantitative real-time PCR
MP-00218-DE 2022-10	Quantification of the rapeseed GMO event Rf3 in food and feed by quantitative real-time PCR
MP-00219-DE 2022-11	Quantification of the maize GMO event MON810 in food and feed by quantitative real-time PCR
MP-00220-DE 2022-11	Quantification of the maize GMO event NK603 in food and feed by quantitative real-time PCR
MP-00222-DE 2022-11	Quantification of the maize GMO event MON89034 in food and feed by quantitative real-time PCR
MP-00223-DE 2022-12	Quantification of A5547-127 soy in food and feed by quantitative real-time PCR
MP-00250-DE 2023-01	Detection of a genetically modified DNA sequence Cry1a(c)-T-NOS in food and feed by real-time PCR
MP-00251-DE 2023-01	Detection of a genetically modified linseed DNA sequence in food and feed by real-time PCR
MP-02669-DE 2021-05	Quantification of the maize GMO event DAS-40278 in food and feed by real-time PCR
MP-02794-DE 2021-09	Quantification of the sugar beet GMO event H7-1 in food and feed by real-time PCR

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MP-02795-DE 2021-10	Quantification of the soy GMO event SYHT0H2 in food and feed by real-time PCR
MP-02861-DE 2021-10	Screening of food and feed for Arabidopsis thaliana SSU promoter (pSSuAra) DNA sequences by real-time PCR
MP-02862-DE 2021-11	Screening of food and feed for pea E9 terminator (tE9) and pea DNA sequences by real-time PCR
MP-03010-DE 2022-03	Quantification of the maize GMO event MZHGOJG in food and feed by real-time PCR
MP-03011-DE 2022-09	Quantification of the rapeseed GMO event MON88302 in food and feed by real-time PCR
MP-00881-DE 2022-12	Quantification of MON87701 soy in food and feed by quantitative real-time PCR
MP-00934-DE 2022-11	Quantification of the maize GMO event TC1507 in food and feed by quantitative real-time PCR

1.4.2 Analysis of nucleic acids by multiplex real-time PCR

1.4.2.1 Detection of animal species by multiplex real-time PCR in food and feed **

MP-02432-DE 2021-08	Detection of brown hare and rabbit DNA in food and feed by duplex real-time PCR
MP-02619-DE 2021-08	Detection of red deer, roe deer and fallow deer DNA in food and feed by duplex real-time PCR
MP-02767-DE 2021-08	Detection of DNA from chicken, turkey, duck and goose in food and feed by multiplex real-time PCR

1.4.2.2 Detection of genetically modified plants by multiplex real-time PCR in food and feed **

ASU L 00.00-122 2008-06	Analysis of food – Detection of a specific DNA sequence, frequently used in genetically modified organisms (GMO), from the cauliflower mosaic virus (CaMV 35S promoter, P35S) and from <i>Agrobacterium tumefaciens</i> (T-nos) in food – Screening method (Modification: <i>Here also matrix feed; qualitative detection, triplex real-time PCR with a pFMV system</i>)
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ASU L 00.00-148 2014-02	Analysis of food – Detection of a DNA sequence of the FMV promoter (pFMV) in food by real-time PCR – Element-specific method (Modification: <i>Here also feed; triplex real-time PCR with a P35S and T-nos system</i>)
ASU L 00.00-154 2014-08	Analysis of food – Detection of CTP2-CP4-EPSPS, pat and bar sequences in food by triplex real-time PCR – Construct-specific and element-specific methods (Modification: <i>Here also feed</i>)
MP-02665-DE 2023-01	Screening for genetically modified soy lines without markers (MON87708, MON87769, DP-305423, CV127) in food and feed by multiplex real-time PCR

1.4.3 Detection of plant variety by gel electrophoresis

MP-01207-DE 2022-03	Determination of varietal identity of potatoes
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1.4.4 Detection of animal species by DNA sequencing in food**

ASU L 10.00-12 2021-07	Determination of fish species in raw fish and fish products by sequence analysis of cytochrome b sequences
MP-01617-DE 2022-11	Determination of tuna species by DNA sequencing

1.5 Immunological analysis of food and feed

1.5.1 Determination of mycotoxins by enzyme immunoassay (ELISA) in food and feed*

NEOGEN Veratox® HS Quantitative Aflatoxin High Sensitivity Test V-AflaHS-ENSP_1208 2017-11	Quantitative determination of aflatoxins
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NEOGEN
Veratox® for DON 5/5
V-DON_5/5_NE_0508
2019-07

Quantitative determination of deoxynivalenol

NEOGEN
Veratox® for Ochratoxin
V-Ochra-ES_1214
2017-11

Quantitative determination of ochratoxin

NEOGEN
Veratox® for Zearalenone
V-Zear_ES_0115
2017-11

Quantitative determination of zearalenone

1.5.2 Determination of allergens by enzyme immunoassay (ELISA) in food and feed *

AgraQuant® Plus Macadamia
nut
Ref. no. 10002053
2019-08

Enzyme immunoassay for quantitative determination of macadamia nut

AgraQuant® Plus Pistachio
Ref. no. 10002088
2019-08

Enzyme immunoassay for quantitative determination of pistachio

AgraQuant® Walnut
Ref. no. 10002088
2019-06

Enzyme immunoassay for quantitative determination of walnut

NEOGEN
Veratox® for Gliadin R5
V-Gliadin_R5_0114_ENSP
2018-11

Quantitative determination of gliadin/gluten

r-biopharm
RIDASCREEN® FAST
β-Lactoglobulin
Ref no. R4912
2018-04

Quantitative determination of β-lactoglobulin

r-biopharm
RIDASCREEN® FAST Casein
Ref no. R4612
2019-05

Enzyme immunoassay for quantitative determination of casein

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r-biopharm RIDASCREEN® FAST Crustacean Ref no. R7312 2018-04	Quantitative determination of crustaceans
r-biopharm RIDASCREEN® FAST Ei/Egg Protein Ref no. R6402 2018-04	Quantitative determination of egg
r-biopharm RIDASCREEN® FAST Hazelnut Ref no. R6802 2021-03	Enzyme immunoassay for quantitative determination of hazelnut
r-biopharm RIDASCREEN® FAST Lupine Ref no. R6102 2018-04	Quantitative determination of sweet lupin proteins
r-biopharm RIDASCREEN® FAST Mandel/Almond Ref no. R6901 2019-04	Enzyme immunoassay for quantitative determination of almond
r-biopharm RIDASCREEN® FAST Milk Ref no. R4652 2021-11	Enzyme immunoassay for quantitative determination of milk protein
r-biopharm RIDASCREEN® Peanut Ref no. R6811 2021-12	Enzyme immunoassay for quantitative determination of peanut or peanut protein
r-biopharm RIDASCREEN® FAST Mustard Ref no. R6152 2018-04	Quantitative determination of mustard

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r-biopharm Quantitative determination of sesame or sesame content
RIDASCREEN® FAST Sesame
Ref no. R7202
2018-04

r-biopharm Quantitative determination of soy proteins
RIDASCREEN® FAST Soya
Ref no. R7102
2018-04

1.5.3 Determination of residues of pharmacologically active substances and hormones by enzyme immunoassay (ELISA) in milk and milk powder *

Randox Quantitative determination of β -agonists
Beta-Agonist ELISA
Ref no. SU 2148
2016-05

r-biopharm Enzyme immunoassay for quantitative determination of
RIDASCREEN® Chloramphenicol chloramphenicol
Ref no. R1511
2021-02

r-biopharm Quantitative determination of streptomycin
RIDASCREEN® Streptomycin
Ref no. R3104
2018-07

r-biopharm Quantitative determination of tetracycline
RIDASCREEN® Tetracyclin
Ref no. R3505
2018-07

1.5.4 Identification and typing of bacteria by agglutination

ISO/TR 6579-3 Microbiology of the food chain – Horizontal method for the
2014-07 detection, enumeration and serotyping of salmonella – Part 3:
Guidelines for serotyping of Salmonella spp.

2 Analysis of surrounding samples, fitment and utensils in food and feed areas

2.1 Determination of bacteria, yeasts and moulds by cultural microbiological methods in surrounding samples, fitment and utensils in food and feed areas **

ISO 6579-1 2017-02	Microbiology of the food chain – Horizontal method for the detection, enumeration and serotyping of salmonella – Part 1: Detection of <i>Salmonella</i> spp.
ISO 21527-1 2008-07	Horizontal method for the enumeration of yeasts and moulds – Colony-count technique – Part 1: Colony count technique in products with water activity greater than 0,95
ISO 21527-2 2008-07	Horizontal method for the enumeration of yeasts and moulds – Colony-count technique – Part 2: Colony count technique in products with water activity equal to or less than 0,95
ISO 21528-1 2017-06	Microbiology of the food chain – Horizontal method for the detection and enumeration of Enterobacteriaceae – Part 1: Detection of Enterobacteriaceae (Modification: <i>Extension to surface examinations by swabs</i>)
DIN EN ISO 4833-1 2013-12	Microbiology of the food chain – Horizontal method for the enumeration of microorganisms – Part 1: Colony-count technique at 30 °C by the pour plate technique
DIN ISO 16649-2 2020-12	Microbiology of food and animal feeding stuffs – Horizontal method for the enumeration of β -glucuronidase-positive <i>Escherichia coli</i> – Part 2: Colony-count technique at 44 °C by 5-bromo-4-chloro-3-indolyl β -D-glucuronide (Modification: <i>Also for surrounding samples; enumeration of β-glucuronidase-positive Escherichia coli from paddles by Hygicult E/β-Gur</i>)
DIN EN ISO 6888-1 2022-06	Microbiology of the food chain – Horizontal method for the enumeration of coagulase-positive staphylococci (<i>Staphylococcus aureus</i> and other species) – Part 1: Method by Baird-Parker agar medium
DIN EN 21528-2 2019-05	Microbiology of the food chain – Horizontal method for the detection and enumeration of Enterobacteriaceae – Part 2: Colony-count technique (Modification: <i>Confirmation of culture-typical colonies by MALDI-TOF</i>)

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Nordisk Metodikkommitté för Livsmedel. NMKL No. 71, 5. Ed., 1999	Salmonella. Detection in foods. (Modification: <i>Also for matrix surrounding samples, fitment and utensils in food and feed areas, confirmation by MALDI-TOF</i>)
MP-00098-DE 2021-02	Direct smear of gel swabs for Salmonella, total microbial count and Enterobacteriaceae
MP-02380-DE 2020-10	Detection of <i>Listeria</i> spp. and <i>L. monocytogenes</i> and quantification of <i>L. monocytogenes</i> by RAPID'L.mono Agar® in food and surrounding samples
MP-02642-DE 2023-01	Enumeration of <i>Pseudomonas</i> spp. and <i>Aeromonas</i> spp. in ready meals, fishery products and surrounding controls

2.2 Detection of Salmonella by real-time PCR

ASU L 00.00-98 2007-04	Analysis of food – Qualitative detection of Salmonella in food. Real-time PCR method (Modification: <i>Here for surrounding samples, fitment and utensils in food and feed areas</i>)
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2.3 Identification and typing of bacteria by MALDI-TOF in surrounding samples, fitment and utensils in food and feed areas **

AOAC 2017.10 2017-10	Confirmation and identification of <i>Listeria monocytogenes</i> , <i>Listeria</i> species and other gram-positive organisms
MP-01115-DE 2023-01	Identification of bacteria by MALDI-TOF (Restriction: <i>Here for gram-negative bacteria</i>)

2.4 Identification and typing of bacteria by agglutination

ISO/TR 6579-3 2014-07	Microbiology of the food chain – Horizontal method for the detection, enumeration and serotyping of salmonella – Part 3: Guidelines for serotyping of <i>Salmonella</i> spp.
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2.5 Detection of allergens by enzyme immunoassay (ELISA) in surrounding samples, fitment and utensils in food and feed areas *

<p>AgraQuant® Plus Macadamia nut Ref. no. 10002053 2019-04</p>	<p>Enzyme immunoassay for quantitative determination of macadamia nut</p>
<p>AgraQuant® Plus Pistachio Ref. no. 10002088 2019-04</p>	<p>Enzyme immunoassay for quantitative determination of pistachio</p>
<p>AgraQuant® Walnut Ref. no. 10002030 2019-06</p>	<p>Enzyme immunoassay for quantitative determination of walnut</p>
<p>NEOGEN Veratox® for Gliadin R5 V-Gliadin_R5_0114_ENSP 2018-11</p>	<p>Quantitative determination of gliadin/gluten</p>
<p>r-biopharm RIDASCREEN® FAST β-Lactoglobulin Ref. no. R4912 2018-04</p>	<p>Quantitative determination of β-lactoglobulin</p>
<p>r-biopharm RIDASCREEN® FAST Casein Ref. no. R4612 2019-05</p>	<p>Enzyme immunoassay for quantitative determination of casein</p>
<p>r-biopharm RIDASCREEN® FAST Crustacean Ref. no. R7312 2018-04</p>	<p>Quantitative determination of crustaceans</p>
<p>r-biopharm RIDASCREEN® FAST Ei/Egg Protein Ref. no. R6402 2018-04</p>	<p>Quantitative determination of egg</p>

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r-biopharm RIDASCREEN® FAST Hazelnut Ref. no. R6802 2021-03	Enzyme immunoassay for quantitative determination of hazelnut
r-biopharm RIDASCREEN® FAST Lupine Ref. no. R6102 2018-04	Quantitative determination of sweet lupin proteins
r-biopharm RIDASCREEN® FAST Mandel/Almond Ref. no. R6901 2019-04	Enzyme immunoassay for quantitative determination of almond
r-biopharm RIDASCREEN® FAST Milk Ref. no. R4652 2021-11	Enzyme immunoassay for quantitative determination of milk protein
r-biopharm RIDASCREEN® Peanut Ref. no. R6811 2021-12	Enzyme immunoassay for quantitative determination of peanut or peanut protein
r-biopharm RIDASCREEN® FAST Senf/Mustard Ref. no. R6152 2018-04	Quantitative determination of mustard
r-biopharm RIDASCREEN® FAST Sesame Ref. no. R7202 2018-04	Quantitative determination of sesame or sesame content
r-biopharm RIDASCREEN® FAST Soya Ref. no. R7102 2018-04	Quantitative determination of soy proteins

2.6 Determination of allergens by real-time PCR

MP-01541-DE Analysis of food and surrounding samples for the presence of
2023-03 celery DNA by real-time PCR

Abbreviations used:

AOAC	AOAC INTERNATIONAL (formerly Association of Official Agricultural Chemists)
ASU	Official Collection of Methods of Analysis on the basis of § 64 <i>Lebensmittel- und Futtermittelgesetzbuch</i> (German Food and Feed Act, <i>LFGB</i>)
CODEX STAN	Standard method as per Codex Alimentarius
DIN	Deutsches Institut für Normung (German Institute for Standardization)
DGF	Deutsche Gesellschaft für Fettwissenschaft (German Society for Fat Research)
EN	European standard
EURL	European Union Reference Laboratory for Animal Proteins in feedingstuffs
IDF	International Dairy Federation
IEC	International Electrotechnical Commission
ICUMSA	International Commission for Uniform Methods of Sugar Analysis
ISO	International Organization for Standardization
MP-XXXXX-DE	In-house method of AGROLAB LUFA GmbH
OIML	International Organization of Legal Metrology
TR	Technical report
USP	United States Pharmacopoeia
VDLUFA	Verband Deutscher Landwirtschaftlicher Untersuchungs- und Forschungsanstalten (Association of German Agricultural Testing and Research Institutions)
Regulation (EC)	Regulation of the European Community