

Annex 8.1 Table of Parameters and Methods

Parameter	Test procedures (methods)		
	Reference method	Alternative method	Screening
Aflatoxin B1	DIN EN 17194:2020 Animal feeding stuffs: Methods of sampling and analysis - Determination of Deoxynivalenol, Aflatoxin B1, Fumonisin B1 & B2, T-2 & HT-2 toxins, Zearalenone and Ochratoxin A in feed materials and compound feed by LC-MS/MS	or method shown (by lab) to be equivalent	ELISA
Zearalenone (ZEA)	DIN EN 17194:2020 Animal feeding stuffs: Methods of sampling and analysis - Determination of Deoxynivalenol, Aflatoxin B1, Fumonisin B1 & B2, T-2 & HT-2 toxins, Zearalenone and Ochratoxin A in feed materials and compound feed by LC-MS/MS	or method shown (by lab) to be equivalent	ELISA
Deoxynivalenol/ Vomitoxin (DON)	DIN EN 17194:2020 Animal feeding stuffs: Methods of sampling and analysis - Determination of Deoxynivalenol, Aflatoxin B1, Fumonisin B1 & B2, T-2 & HT-2 toxins, Zearalenone and Ochratoxin A in feed materials and compound feed by LC-MS/MS	or method shown (by lab) to be equivalent	ELISA
Ochratoxin A (OTA)	DIN EN 17194:2020 Animal feeding stuffs: Methods of sampling and analysis - Determination of Deoxynivalenol, Aflatoxin B1, Fumonisin B1 & B2, T-2 & HT-2 toxins, Zearalenone and Ochratoxin A in feed materials and compound feed by LC-MS/MS	or method shown (by lab) to be equivalent	ELISA
Fumonisin B1/B2	DIN EN 17194:2020 Animal feeding stuffs: Methods of sampling and analysis - Determination of Deoxynivalenol, Aflatoxin B1, Fumonisin B1 & B2, T-2 & HT-2 toxins, Zearalenone and Ochratoxin A in feed materials and compound feed by LC-MS/MS	or method shown (by lab) to be equivalent	ELISA
T-2-/HT-2-Toxins	DIN EN 17194:2020 Animal feeding stuffs: Methods of sampling and analysis -	or method shown (by lab) to be equivalent	ELISA

Parameter	Test procedures (methods)		
	Reference method	Alternative method	Screening
	Determination of Deoxynivalenol, Aflatoxin B1, Fumonisin B1 & B2, T-2 & HT-2 toxins, Zearalenone and Ochratoxin A in feed materials and compound feed by LC-MS/MS		
Dioxins	Commission regulation (EU) No. 2017/771 Analysis of food - determination of the levels of dioxins and polychlorinated biphenyls in feed – Commission Regulation (EU) 2017/771 of 3 May 2017 amending Regulation (EC) No 152/2009 (ABl. EG L 115/22 of 04.05.2017)	or method shown (by lab) to be equivalent in conformity with EU Directive 2002/70	“bioassay” ¹
PCB (dioxin-like PCB)	Commission regulation (EU) No. 2017/771 Analysis of food - determination of the levels of dioxins and polychlorinated biphenyls in feed – Commission Regulation (EU) 2017/771 of 3 May 2017 amending Regulation (EC) No 152/2009 (ABl. EG L 115/22 of 04.05.2017)	or method shown (by lab) to be equivalent in conformity with EU Directive 2002/70	“bioassay” ¹
Non-dioxin-like PCB	Commission regulation (EU) No. 2017/771 Analysis of food - determination of the levels of dioxins and polychlorinated biphenyls in feed – Commission Regulation (EU) 2017/771 of 3 May 2017 amending Regulation (EC) No 152/2009 (ABl. EG L 115/22 of 04.05.2017)	or method shown (by lab) to be equivalent in conformity with EU Directive 2002/70	-
Organochlorine compounds (except dioxins and PCBs)	DIN EN 15741:2020 Determination of OC-pesticides and PCB's by GC/MS DIN EN 15742:2020 Determination of OC-pesticides and PCB's by GC/ECD	or method shown (by lab) to be equivalent	-
PAH (Polycyclic Aromatic Hydrocarbons)	VDLUFA MB VII, 3.3.3.2 Determination of polycyclic aromatic hydrocarbons (PAH) in plant material (GC method)	or method shown (by lab) to be equivalent	-

Parameter	Test procedures (methods)		
	Reference method	Alternative method	Screening
PAH (Polycyclic Aromatic Hydrocarbons)	VDLUFA MB VII, 3.3.3.2 Determination of polycyclic aromatic hydrocarbons (PAH) in plant material (GC method)	or method shown (by lab) to be equivalent	-
Pesticides	Official Collection § 64: ASU L 00.00-115 Modular multi-method approach to identifying residual pesticides in feed by GC-MS(/MS) or LC-MS/MS after acetonitrile-extraction/dispersion and clean-up by dispersive SPE (QuEChERS) (ASU F 0057)	-	-
Chlormequat	DIN EN 15055:2006 Non fatty foods - Determination of chlormequat and mepiquat - LC-MS/MS method	or method shown (by lab) to be equivalent	-
Dithiocarbamate	Official Collection § 64: Determination of dithiocarbamate and thiuram disulfide residues Part 1: Spectrometric method (ASU L 00.00-49/1; F 0053) Part 2: Gas chromatographic method (ASU L 00.00-49/2; F 0054) Part 3: UV-spectral photometrical xanthate method (ASU L 00.00-49/3; F 0055)	or method shown (by lab) to be equivalent	-
Glyphosate	Quick Method for the Analysis of Highly Polar Pesticides in Food Involving Extraction with Acidified Methanol and LC- or IC-MS/MS Measurement I. Food of Plant Origin (QuPpe-PO-Method) Version 12 (22.07.2021) (EU Reference Laboratory for pesticides requiring Single Residue Methods (EURL-SRM))	or method shown (by lab) to be equivalent	-
Cadmium (Cd)	DIN EN 17053:2018 Animal feeding stuffs - Methods of sampling and analysis - Determination of trace elements,	or method shown (by lab) to be equivalent	-

Parameter	Test procedures (methods)		
	Reference method	Alternative method	Screening
	heavy metals and other elements in feed by ICP-MS (multi-method)		
Lead (Pb)	DIN EN 17053:2018 Animal feeding stuffs - Methods of sampling and analysis - Determination of trace elements, heavy metals and other elements in feed by ICP-MS (multi-method)	or method shown (by lab) to be equivalent	-
Arsenic (As)	DIN EN 17053:2018 Animal feeding stuffs - Methods of sampling and analysis - Determination of trace elements, heavy metals and other elements in feed by ICP-MS (multi-method)	or method shown (by lab) to be equivalent	-
Mercury (Hg)	DIN EN 16277:2012 by cold-vapour atomic absorption spectrometry (CVAAS) after microwave pressure digestion	or method shown (by lab) to be equivalent	-
Nickel (Ni)	VDLUFA MB VII 2.2.2.5 (2007) Determination of selected elements in plant material and feed and compound feed by ICP-MS	or method shown (by lab) to be equivalent	-
Salmonella	DIN EN ISO 6579-1:2020 Microbiology of the food chain - Horizontal method for the detection, enumeration and serotyping of Salmonella - Part 1: Detection of Salmonella spp.	or method shown (by lab) to be equivalent	PCR ¹
Antibiotic active substances	Determination by LC MS/MS ²	or method shown (by lab) to be equivalent	-
Packaging material	Accredited laboratory method for (microscopic) analysing of prohibited substances in accordance with Regulation (EC) No 767/2009 Annex III (in particular point 7)	-	-

Parameter	Test procedures (methods)		
	Reference method	Alternative method	Screening
Ergot (claviceps purpurea)	Counting (by scheme participant)		
	Calculation of Ergot content in % $= \frac{\text{Weight of ergot fragments in grams}}{\text{Weight of the final sample in grams}} \times 100$	-	-
Animal components	Commission regulation (EC) No. 152/2009 Annex VI laying down the methods of sampling and analysis for the official control of feed, amended most recently by regulation (EU) No 51/2013 (ABl. L 20 of 23.1.2013, S. 33) last amended by Commission implementing regulation (EU) 2022/893 of 7 June 2022 amending annex VI to Regulation (EC) No 152/2009 as regards the methods of analysis for the detection of constituents of terrestrial invertebrates for the official control of feed Follow-up method for positive results: PCR qualitative		
Unsoluble impurities	DIN EN ISO 663:2017 Animal and vegetable fats and oils - Determination of insoluble impurities content (ISO 663:2017)		
Hydrocyanic acid	DIN EN 16160:2012 Animal feeding stuffs - Determination of Hydrocyanic acid by HPLC	or demonstrably (by laboratory) equivalent procedure	-
Methanol	Accredited lab's own method	-	-

¹ If result is positive, a follow-up with the reference method (or equivalent) has to be carried out.

² The VDLUFA method 14.1.5 for "Determination of selected antibiotics in feedingstuffs by LC-MS/MS" can provide a basis for the method development.

Revision Information Version 01.01.2024 (Version: 01.01.2024)

Criterion	Changes	Date of change
PAHs (polycyclic aromatic hydrocarbons) in biochar	New reference method	01.01.2024