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Testing performed at the above address only

DETAIL OF ACCREDITATION

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
ANIMAL FEEDINGSTUFFS	<u>Chemical Tests</u> * Indicates analysis performed under Food Standards Scotland designation as Official Laboratory in accordance with retained Regulation (EU) 2017/625	Documented In-House Methods identified by method number GAx based on SI 1999, No 1663 'The Feedingstuffs (Sampling and Analysis) Regulations
	*Compositional Analysis, Additives, colourings, preservatives and related contaminants	Development and modification of methods for analysis using Flexible Scope Procedure PFG 1 (HPLC, GC, GC-MS and UV spectroscopy)
	*Determination of Elements	Development and modification of methods for analysis using Flexible Scope Procedure PFG 2 (AAS and ICP-OES)
	*Foreign Body identification	Development and modification of methods for analysis using Flexible Scope Procedure PFG 3 (Light Microscopy)
	*Compositional Analysis, Additives, colourings, preservatives and related contaminants	Development and modification of methods for analysis using Flexible Scope Procedure PFG 4 (Gravimetric, titremetric and other classical wet chemistry technicques)

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
ANIMAL FEEDINGSTUFFS (cont'd)	Chemical Tests (cont'd)	Documented In-House Method identified by method number
	*Indicates analysis performed under Food Standards Scotland designation as Official Laboratory in accordance with retained Regulation (EU) 2017/625	
	*Aflatoxin B1, B2, G1, G2 and Ochratoxin A	PF099 by HPLC fluorescence with Kobra Cell
	*Deoxynivalenol	PF091 by immunoaffinity column separation and HPLC
	*Zearalenone	PF088 by immunoaffinity column separation and HPLC
	*Ash	GA008 based on EC152/2009
	*Crude Fibre	GA010 based on EC152/2009
	*Moisture	GA002 by oven drying based on EC152/2009
	*Oil (total)	GA004 based on EC152/2009
	*Nitrogen and Protein	PF082 using the Dumas Combustion method
	*Vitamins A and E	PF061 using High Performance Liquid Chromatography
	*Cobalt *Copper *Iron *Manganese *Zinc	GA013 using Flame Atomic Absorption Spectrometry
	*Cadmium *Lead	GA012 using Flame Atomic Absorption Spectroscopy
	*Arsenic *Selenium	GA014 using Hydride Generation Atomic Absorption Spectrometry

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
FOODS	Chemical Tests (cont'd) *Indicates analysis performed under Food Standards Scotland designation as Official Laboratory in accordance with retained Regulation (EU) 2017/625	Methods documented in 'Analytical Methods Manual for VEMS' Association of Public Analysts and identified by method number or Documented In-House Methods identified by method number PFx
Bakery wares e.g. bread, toasted bread, crisp bread and biscuits, potato products e.g. potato chips and crisps	*Acrylamide	PF105 by GC-MS
DAIRY PRODUCTS	*Fat	PF092 by alkaline hydrolysis (Rose Gottlieb method)
Cream	*Acidity (titratable)	F/0251 by titration
	*Fat	F/0216 by Gerber technique
Milk, Liquid	*Acidity (titratable)	VEMS F/0131
	*Antibiotics	PF070 using Delvo kit
	*Fat	F/0008 using Gerber technique
	*Freezing Point	PF008 using Thermistor Cryoscope
	*Total solids	PF057 using Gravimetry
FAT	*Butyric acid	F/0289 by gas chromatography
FATS and OILS	*Peroxide value	F/0009 by titration
	*Fatty acid profile	PF 051 GC/FID (analysis of fatty acids converted to fatty acid methyl esters)
	*Free fatty acids	F/0010 by titration
FISH - FRESH and FROZEN, FISH PRODUCTS and PROCESSED FISH	*Ash	PF012 by muffle furnace

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
FOODS (cont'd)	Chemical Tests (cont'd) *Indicates analysis performed under Food Standards Scotland designation as Official Laboratory in accordance with retained Regulation (EU) 2017/625	Methods documented in 'Analytical Methods Manual for VEMS' Association of Public Analysts and identified by method number or Documented In-House Methods identified by method number PFx
FISH - FRESH and FROZEN, FISH PRODUCTS and PROCESSED FISH	*Fat *Moisture	PF002 by oven drying and Soxhlet Extraction
	*Histamine	PF117 by HPLC based on ISO 19343:2017
BREAD	*Propionic Acid	PF049 by Gas Chromatography (GC)
HONEY	*Hydroxymethyl furfural	PF046 by HPLC
	*Identification of Pollen Grains	PF045 by light microscopy
	*Moisture	F/0265 by refractometry
SPIRITS	*Apparent and Actual Alcohol	1) PF021 by Pycnometry and Obscuration (Reference Method) 2) PF019 by density meter and Obscuration (Primary Method)
	*Congeners	F/0161 by Gas Chromatogrpahy
MEAT - FRESH and FROZEN MEAT PRODUCTS and PROCESSED MEAT	*Ash	PF012 by muffle furnace
	*Fat and Moisture	PF002 by oven drying and Soxhlet extraction
	*Nitrogen and crude protein	PF082 by Dumas
FLESH FOODS and MEAT PRODUCTS	*Total volatile nitrogen	F/0157 by Distillation followed by titration
	*Hydroxyproline	PF011 based on BS 4401:Part 11:1995
	*Calculation of apparent fish content	PF017 by calculation

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
FOODS (cont'd)	Chemical Tests (cont'd) *Indicates analysis performed under Food Standards Scotland designation as Official Laboratory in accordance with retained Regulation (EU) 2017/625	Methods documented in 'Analytical Methods Manual for VEMS' Association of Public Analysts and identified by method number or Documented In-House Methods identified by method number PFx
SOFT DRINKS	*Acesulfame K Aspartame Benzoic acid Caffeine Saccharin Sorbic acid	PF023 by HPLC
SOYA SAUCE	*3-monochloropropane-1,2-diol	PF100 by gas Chromatography with Mass Spectroscometric detection (GC/MS) based on BS EN 14573:2004
FOODS, General	*Compositional Analysis, Additives, colourings, preservatives and related contaminants	Development and modification of methods for analysis using Flexible Scope Procedure PFG 1 (HPLC, GC, GC-MS and UV spectroscopy)
	*Determination of Elements	Development and modification of methods for analysis using Flexible Scope Procedure PFG 2 (AAS and ICP-OES)
	*Foreign Body identification	Development and modification of methods for analysis using Flexible Scope Procedure PFG 3 (Light Microscopy)
	*Compositional Analysis, Additives, colourings, preservatives and related contaminants	Development and modification of methods for analysis using Flexible Scope Procedure PFG 4 (Gravimetric, titremetric and other classical wet chemistry technicques)
	*Ash *Moisture	PF012 by gravimetry
	*Arsenic, Total and inorganic	PF107 by Hydride Generation Atomic Absorption

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
FOODS, General (cont'd)	Chemical Tests (cont'd) *Indicates analysis performed under Food Standards Scotland designation as Official Laboratory in accordance with retained Regulation (EU) 2017/625	Methods documented in 'Analytical Methods Manual for VEMS' Association of Public Analysts and identified by method number or Documented In-House Methods identified by method number PFx
	*Calcium	VEMS F/0183
	*Chloride, *Salt as Sodium Chloride (calculation), *Salt in Aqueous Phase (Calculation)	PF078 using Ion Chromatography
	*Dietary Fibre	PF027 by enzymatic digestion and gravimetry
	*Ethanol	PF058 by GC-FID
	*Fat (total)	PF005 by acid digestion/extraction
	*Aflatoxin B1, B2, G1, G2 and Ochratoxin A	PF099 by HPLC fluorescence with Kobra Cell
	*Deoxynivalenol	PF091 by by immunoaffinity column separation and HPLC
FOODS, Water soluble (soft drinks, sugar confectionery)	*Synthetic Food Colour (Water soluble): Allura Red (E129) Amaranth (E123) Brilliant Blue (BFCF) Carmoisine (E122) Green S Patent Blue (E131) Ponceau 4R (E124) Quinoline Yellow FCF (E104) Red 2G (E128) Sunset yellow (E110) Tartrazine (E102)	PF087 by HPLC-DAD
FOODS, General	*Zearalenone	PF088 by immunoaffinity column separation and HPLC
	*Allergens, Contaminants and Protein Species	PF069 - Flexible Scope method for performance verification and use of commercial ELISA test kits

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
FOODS, General (cont'd)	Chemical Tests (cont'd) *Indicates analysis performed under Food Standards Scotland designation as Official Laboratory in accordance with retained Regulation (EU) 2017/625	Methods documented in 'Analytical Methods Manual for VEMS' Association of Public Analysts and identified by method number or Documented In-House Methods identified by method number PFx
	*Gluten	PF116 – by ELISA using the R-Biopharm RIDASCREEN R7001 and R7002 test kits
	*Nitrate and Nitrite	PF033 by HPLC
	*Nitrogen and Protein	PF082 using the Dumas Combustion method
	*pH	PF065 based on VEMS F0282
	*Sodium	PF052 by Flame Emission Spectrophotometry
	*Soluble Solids in food	PF 079 using refractometry
	*Sorbic acid	PF050 by HPLC
	*Sugars: (Total and Fructose, Galactose, Glucose, Lactose, Maltose, Sucrose)	PF022 by HPLC with Refractive Index detection
	*Sulphur Dioxide	PF060 using Gravimetric weighing
	*Cadmium and Lead	PF085 using ashing followed by ICP-OES
Foods - except baby foods, infant formulae and dietary foods intended for infants	*Tin	VEMS F/0134 using acid digestion followed by Flame AAS
	*Vitamins A and E	PF061 using HPLC
	*Vitamin C	PF074 using HPLC
	*Water activity	PF053 by hygrometer
	*Apparent meat content	PF056 based on APA guidelines

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
FOODS, General (cont'd)	Chemical Tests (cont'd) *Indicates analysis performed under Food Standards Scotland designation as Official Laboratory in accordance with retained Regulation (EU) 2017/625 *Energy value	Documented In-House Methods identified by method number PFx F/0381 by calculation from analytical data
FOODS (as specified) MEAT and MEAT PRODUCTS FISH and FISH PRODUCTS Animal Feeding Stuffs, Foods and Waters	Molecular Tests *Species identification (qualitative) beef pork lamb horse chicken turkey *Species identification (qualitative) *Detection and/or determination of DNA sequences for speciation, genetically modified organisms (GMO's), allergens and microorganisms	 PF098 using RT-PCR PF094 using PCR-RFLP and Agilent 2100 Bioanalyser Development and modification of methods for analysis using Flexible Scope Procedure PFG5 (PCR, qPCR, PCR-RFLP)
DIFFUSION TUBE SAMPLERS	Chemical Tests Nitrogen dioxide	Documented In-House Methods PE002 by spectrophotometry

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
FOODS, General	Microbiological Tests *Indicates analysis performed under Food Standards Scotland designation as Official Laboratory in accordance with retained Regulation (EU) 2017/625 Detection:	Documented In-House Methods identified by method number PMFx based on/incorporating published procedures referenced by BS EN ISO Methods
	**Campylobacter* spp	PMF025 based on ISO 10272-1:2017 + AMD 1:2023
	**Escherichia coli* O157	PMF014 based on BS EN ISO 16654:2001 + A2:2023
	**Listeria monocytogenes*	PMF024 based on BS EN ISO 11290-1:2017
	**Salmonella* species	PMF009 based on BS EN ISO 6579-1:2017 AMD 1 :2020
	*Shiga Toxin-Producing *Escherichia coli* (Presumptive)	PMF029 based on CEN ISO/TS 13136:2012 by Multiplex Real-Time PCR using Life Technologies extraction and PCR test kit and Agilent MX3005 analyser
	Enumeration:	
	**Listeria monocytogenes* and other *Listeria* spp	PMF021 based on BS EN ISO 11290-2:2017
	*Yeasts and Moulds	PMF027 based on ISO 21527Parts 1 & 2: 2008
Ready-to-eat prepared foods	*Aerobic Colony Count at 30°C	PMF015 using Plate count agar at 30°C for 48 hours using spiral plating technique
	**Bacillus cereus*	PMF011 based on BS EN ISO 7932:2004 AMD 1:2020
	**Clostridium perfringens*	PMF008 based on BS EN ISO 15213-2:2023

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
FOODS, General (cont'd)	Microbiological Tests (cont'd) *Indicates analysis performed under Food Standards Scotland designation as Official Laboratory in accordance with retained Regulation (EU) 2017/625 Enumeration (cont'd): *Enterobacteriaceae **Escherichia coli* *Coagulase positive Staphylococci (including *Staphylococcus aureus)* **Escherichia coli*	Documented In-House Methods identified by method number PMFx based on/incorporating published procedures referenced by BS EN ISO Methods PMF023 using Pour Plate based on BS EN ISO 21528-2:2017 PMF004 based on ISO 16649-2:2001 using surface spread technique PMF006 based onBS EN ISO 6888-1:2021 + AMD 1 :2023 PMF026 using MPN based on ISO 16649-3:2015
Shellfish		

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
WATERS (regulatory testing)	Analysis for the purpose of enforcement of: - Water Supply (Water Quality) (Scotland) Regulations 2014 - The Private Water Supplies (Scotland) Regulations 2017 <u>Microbiological Tests</u> Enumeration:	Methodology meeting the requirements of The Drinking Water Testing Specification
Private water supplies Drinking waters	Total coliforms and *Escherichia coli*	PMW008 based on the Microbiology of Drinking Water (2016):Part 4D using the colilert system
	Enterococci	PMW009 based on the Microbiology of Drinking Water 2012:Part 5B using EnterolertTM
	Sporulated sulphite-reducing Clostridia and *Clostridium perfringens*	PMW007 based on The Microbiology of Drinking Water Part-6 2021 using membrane filtration
	Total Colony Count at 22 °C and 37 °C	PMW003 based on the Microbiology of Drinking Water (2020):Part 7A using YEA pour plate
Raw, drinking and recreational waters	Coliforms and *Escherichia coli*	PMW008 based on the Microbiology of Drinking Water (2016): Part 4D using the colilert system
	Total Colony Count at 22° and 37°C	PMW003 based on Microbiology of Drinking Waters (2020), Part 7A using YEA pour plate
Raw, drinking and recreational waters	Enterococci	PMW009 based on MDW 2012 Part 5B using Enterolert
Swimming pool, Spa pool, Drinking water supplies, Drinking water, (excluding Natural Mineral and Bottled Waters)	*Pseudomonas aeruginosa*	PMW010 MPN using Pseudalert at 38ºC based on MDW 2015 Part 8 Method C

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
WATERS (non regulatory testing) (cont'd)	Microbiological Tests (cont'd)	Documented in house methods based on the Microbiology of Drinking Waters
	Detection of:	
	Campylobacter spp	PMF025 based in ISO 10272-1:2017 + AMD 1:2023
	Legionella spp	PMW002 based on ISO 11731: 2017 Matrix A & B. Procedure 8, 9, 10
	Molecular Tests	Documented In-House Methods identified by method number PMWx, based on International Standards
Drinking Recreational (man made)	Detection and Quantification of DNA from *Legionella pneumophila*	PMW011 based on ISO/TS 12869:2019 by Real-Time PCR using filtration, Aquadien DNA Extraction Kit, Bio-Rad iQ Check Test Kit and Agilent MX3005 analyser
	Detection of:	
Drinking	Shiga Toxin-Producing *Escherichia coli* (Presumptive)	PMF029 based on CEN ISO/TS 13136:2012 by Multiplex Real-Time PCR using Life Technologies extraction and PCR test kit and Agilent MX3005 analyser
END		