

Hellenic Accreditation System



Annex F1/A20 to the Certificate No. **44-5**

SCOPE of ACCREDITATION of the **Analytical Laboratory** of **AGROLAB S.A. (Laboratory in Thessaloniki)**

Materials / Products Tested	Types of Test / Properties	Applied Standards / Techniques
Chemical Testing		
1. Food (methods apply to various food categories, accredited to a flexible scope-the detailed scope can be found in the <u>catalogue of accredited activities</u> in the laboratory website).	1. Determination of Moisture	Modified AOAC (AOAC Lat. Ed) methods for each category of products
	2. Determination of Ash	Modified AOAC (AOAC Lat. Ed) methods for each category of products
	3. Determination of Fat Content	Modified AOAC (AOAC Lat. Ed) and ISO methods for each category of products
	4. Determination of Proteins	Modified AOAC (AOAC Lat. Ed) methods for each category of products
	5. Determination of Dietary Fibers	Modified AOAC (AOAC Lat. Ed) methods for each category of products

Materials / Products Tested	Types of Test / Properties	Applied Standards / Techniques
2. Milk, cheese	Determination of Total Solids - Moisture	OB.01.107, OB.01.106 Modified method based on: 925.23 (milk), 920.115 (condensed milk) 948.12 (cheese) AOAC Lat. Ed.
3. Food, oils and feed. (Accreditation applies to various categories of food, oils and feed in a flexible scope. It is described in detail in the List of Accredited Activities available in the laboratory website)	1. Determination of metallic elements	Modified method using ICP-MS OB.01.138
4. Food and Drinks (Accreditation applies to various categories of food and drinks in a flexible scope. It is described in detail in the List of Accredited Activities available in the laboratory website)	1. Determination of Sorbic Acid	Modified method using HPLC-DAD OB.01.134
	2. Determination of Benzoic Acid	Modified method using HPLC-DAD OB.01.134
	3. Determination of total Sulfur Dioxide (SO ₂)	Modified method using distillation in a nitrogen stream OB.01.136
Test categories 1, 3 and 4 are accredited in a flexible scope. Therefore the laboratory may modify, improve or develop new methods, which are considered accredited according to Guideline KO-EYEA/01/00/28-07-2011. It is described in detail in the List of Accredited Activities available in the laboratory website		
5. Food	1. Determination of sugars (fructose, glucose, sucrose, maltose, lactose)	OB.01.137 Modified method based on 982.14 (AOAC Lat. Ed.)
6. Animal Feed	1. Determination of Moisture	OB.01.120 Modified method based on EN ISO 6496:1999
	2. Determination of Ash	OB.01.121 Modified method based on ISO 5984:2002
	3. Determination of Fat Content	OB.01.123 Modified method based on ISO 6492:1999
	4. Determination of Protein	OB.01.122 Modified method based on 984.13 (AOAC Lat. Ed.)
7. Vegetables, fruits and products thereof	1 Determination of nitrate ions NO ₃ ⁻	OB.01.133 Modified method based on EN 12014-2
8. Meat and meat products, cold cuts	1. Determination of nitrate and nitrite salts (FIA)	OB.01.149 In-house method based on AN 5210 & 5211 FOSS
9. Fruits, vegetables, juices, jams, syrups, compotes	1. Determination of soluble dry residue (Brix)	OB.01.150 Modified method based on Regulation (EE) 974/2014

Materials / Products Tested	Types of Test / Properties	Applied Standards / Techniques
<p>10. Food of plant origin (based on ESYD/G-FYTOPROST 2016. SANTE/11813/2017)</p> <p>It is described in detail in the <u>List of Accredited Activities available</u> in the laboratory website</p>	<p>Determination of pesticide residues (flexible scope) :</p> <p>Organophosphates, Organochlorines, Pyrethroids, Carbamates, Triazoles, Triazines, Dinitroanilines, Amides, Bendimidazoles, Benzoyl-ureas, Sulfonyl-ureas, Phenyl-ureas, Strobilurins, Neonicotinoids, Aryloxy-alcanoic acids, polars, dithiocarbamates and others</p> <p>It is described in detail in the <u>List of Accredited Activities available</u> in the laboratory website</p>	<p>Modified method UPLC-MS-MS OB.02.001</p> <p>Modified method GC-MS-MS OB.02.001</p> <p>Modified method GC-PFPD-S OB.02.022</p> <p>Modified method LC-MS-MS OB.02.037</p> <p>Modified method LC-MS-MS OB.02.034</p> <p>Modified method UPLC-QTOF O.B.02.036</p>
<p>11. Infant and baby foods</p>	<p>Determination of pesticide residues of the categories:</p> <p>Organophosphates, Carbamates, Triazoles, Triazines, Dinitroanilines, Amides, Bendimidazoles, Benzoyl-ureas, Sulfonyl-ureas, Phenyl-ureas, Strobilurins, Neonicotinoids, Aryloxy-alcanoic acids and others</p> <p>As described in detaile in the <u>catalogue of accredited activities</u> in the laboratory website (form <u>E.A.6.1-2</u>) (ESYD/G-FYTOPROST 2016)</p> <p>It is described in detail in the <u>List of Accredited Activities available</u> in the laboratory website</p>	<p>Modified method UPLC-MS-MS OB.02.001</p>
<p>12. Food and Drinks, Infant and Baby Foods, Animal Feed</p> <p>(Accreditation applies to various categories of food, drinks, infant and Baby food and animal feed in a flexible scope. It is described in detail in the <u>List of Accredited Activities available</u> in the laboratory website)</p>	<p>Determination of Toxins (flexible scope)</p> <p>The detailed scope can be found in the <u>catalog of accredited activities</u> in the laboratory website (form <u>E.A.6.1-2</u>)</p> <p>It is described in detail in the <u>List of Accredited Activities available</u> in the laboratory website</p>	<p>Modified method UPLC-MS-MS O.B.02.021</p>

Materials / Products Tested	Types of Test / Properties	Applied Standards / Techniques
13. Water (Accreditation applies to various categories of water, with the exception of sea water, in a flexible scope. It is described in detail in the <u>List of Accredited Activities</u> available in the laboratory website)	Determination of pesticide residues (flexible scope) : The detailed scope can be found in the <u>catalog of accredited activities</u> in the laboratory website (form <u>E.A.6.1-2</u>)	Modified method UPLC-MS-MS OB 02.020 Modified method GC-MS-MS OB 02.032
Categories 10, 11, 12&13 are accredited to a flexible scope. Flexibility applies to (a) the incorporation of new pesticides / toxins to existing methods / matrices (b) the addition of existing matrices to existing methods / pesticides / toxins (c) the addition of new matrices to existing methods / pesticides / toxins (d) the modification of existing methods (analytical technique, range of measurement, quantitation limit). The accredited tests are described in detail in the <u>Analytical List of Accredited Activities</u>, which is available at the laboratory web site.		
14. Potable water, irrigation water, borehole water, groundwater	1. Determination of pH	4500-H, B(APHA, Standard Methods 23 rd Ed. 2017) (*) O.B.01.005
	2. Determination of Conductivity	2510 B (APHA, Standard Methods 23 rd Ed. 2017) (*) O.B.01.006
	3. Determination of Chloride ions	Modified method based on 4500-Cl, B (APHA, Standard Methods 23 rd Ed. 2017) (*) O.B.01.007
	4. Determination of Sulphate ions	Modified method based on 4500 SO ₄ , E (APHA, Standard Methods 23 rd Ed. 2017) (*) O.B.01.008
	5. Determination of Hardness	Modified method based on 2340 B (APHA, Standard Methods 23 rd Ed. 2017) (*) O.B.01.013
	6. Determination of Nitrite ions	Modified method based on 4500 NO ₂ , (APHA, Standard Methods 23 rd Ed. 2017) (*) O.B.01.011
	7. Determination of Ammonium ions	Modified method based on 4500 NH ₃ , -(APHA, Standard Methods 23 rd Ed. 2017) (*) O.B.01.009
	8. Determination of Nitrate ions	Modified method based on 4500 NO ₃ ⁻ -B(APHA, Standard Methods 23 rd Ed. 2017) (*) O.B.01.018
	9. Determination of COD	HACH LCK 314, LCK 514 O.B.01.023

Materials / Products Tested	Types of Test / Properties	Applied Standards / Techniques
Potable water, irrigation water, borehole water, groundwater (continued)	10.Determination of hexavalent Chromium	Modified method based on 3500 – Cr / B (APHA, Standard Methods 23 rd Ed. 2017) και HACH LCK 313 O.B.01.024
	11.Determination of Turbidity	Modified method based on 2130 B (APHA, Standard Methods 23 rd Ed. 2017) (*) using a portable turbidity meter O.B.01.028
	12. Determination of free cyanides	HACH LCK 315 O.B.01.027
	13. Determination of free Chlorine	Modified method based on 4500 ClG (APHA, Standard Methods 23 rd Ed. 2017) , ΜΕΦΟΡΗΤΟΦΩΤΟΜΕΤΡΟ O.B.01.026
	14. Determination of colour	Modified method based on 2120 C (APHA, Standard Methods 23 rd Ed. 2017) (*) O.B.01.029
	15 Determination of fluoride ions	Modified method based on 4500 F D. SPADNS (APHA, Standard Methods 23 rd Ed. 2017) (*) O.B.01.030
	16. Determination of total solids	Modified method based on 2540 B (APHA, Standard Methods 23 rd Ed. 2017) (*) O.B.01.021
	17. Potentiometric determination of chloride ions	In house method based on HACH Application DOC 316.52.93091 based on ISO 9297:2000 (*) O.B..01.042
	18. Determination of total Alkalinity	In house method based on : HACH Application DOC 52.93085 και ISO 9963-1:1994 O.B..01.043
15. Potable, irrigation, bore hole, ground and surface waters	1. Determination of 31 elements using ICP-MS Ca, Mg, K, Na, Cu, Fe, Zn, Mn, P, B, Al, Ba, Mo, Sr, Ag, Sn, Se, Sb, Si, Pb, Cd, As, Ni, Co, Cr, Hg, V, Be, U, Tl, Ti	Modified method based on 3125 A,B (APHA, Standard Methods 23 rd Ed. 2017) (*) O.B.01.040
16. Potable, bore hole and ground waters	1. Determination of bromate ions BrO ₃ ⁻	Modified method based on 4110 D (APHA, Standard Methods 23 rd Ed. 2017) (*) O.B.01.039
	2. Determination of Total Organic Carbon TOC	HACH LCK 385 (*) O.B.01.038
17. Potable, surface and ground water, intended or not for human consumption	1.Determination of 16 polycyclic aromatic hydrocarbons PAHs: Acenaphthene, Acenaphthylene, Anthracene, benzo(a) Pyrene, benzo(a)anthracene, benzo(b) fluoranthene, benzo(ghi) perylene, benzo(k) fluoranthene, Chrysene, dibenzo(ah)anthracene, Fluoranthene, Fluorene, indéno (123 cd) perylene, Naphtalene, Phenanthrene, Pyrene	Εσωτερική μέθοδος ΟΒ .15.001 GC-MS-MS τροποποιημένη και βασισμένη στις:

Materials / Products Tested	Types of Test / Properties	Applied Standards / Techniques
17. Potable, surface and ground water, intended or not for human consumption (continued)	2. Determination of 16 PCBs: PCB 18, PCB 20, PCB 28, PCB 31, PCB 44, PCB 52, PCB 101, PCB 105, PCB 118, PCB 138, PCB 149, PCB 153, PCB 170, PCB 180, PCB 194, PCB 209	1. ISO 28540 , Determination of 16 polycyclic aromatic hydrocarbons (PAH) in water- Method using gas chromatography with mass spectrometric detection 2. EAOTEN ISO 6468 , Determination of certain organochlorine insecticides, polychlorinated biphenyls and chlorobenzenes - Gas chromatography method after liquid-liquid extraction(*)
	3. Determination of 13 PCTs: 3,3"-Dichloro-o-terphenyl, 4,4"-Dichloro-o-terphenyl, 4,4"-Dichloro-p-terphenyl, 3,3",5,5"-,Tetrachloro-o-terphenyl, 3,3"-Dichloro-p-terphenyl, 3',4,4"-Trichloro-m-terphenyl, 3,3",5,5"-Tetrachloro-p-terphenyl, 3,3',3",5,5"-Pentachloro-m-terphenyl, 3,3",4,4"-Tetrachloro-p-terphenyl, 2,2",4,4",5,5"-Hexachloro-p-terphenyl, 3,3',3",4,4"-Pentachloro-m-terphenyl, 2,2",3',4,4",5,5"-Heptachloro-m-terphenyl, 3,3",4,4",5,5"-Hexachloro-p-terphenyl	
	4. Determination of 14 volatile substances VOCs: Benzene, Toluene, m-Xylene, p-Xylene, o-Xylene, Ethylbenzene, Vinylchloride, 1,2-Dichloroethane, Total trialomethanes Tribromomethane (Bromoform), Trichloromethane (Chloroform), Bromodichloromethane, Dibromochloromethane Aloethenes Trichloroethene, Tetrachloroethene	In house method (O.B.15.002) GC-MS/ HS-SPME modified and based on: 1. ISO/DIS 17943 Determination of volatile organic compounds in water- Method using headspace solid-phase micro-extraction (HS-SPME) followed by gas chromatography-mass spectrometry (GC-MS) (*)
	5. Determination of Epichlorohydrin	In house method OB.15.002 GC-MS/ HS-SPME modified and based on : EAOT-EN 14207 Determination of epichlorohydrin (*)
	6. Determination of acrylamide	In house method O.B.15.003 GC-MSHS-UPLC-MSMS modified and based on: Determination of low-level Acrylamide in drinking water by liquid chromatography /tandem mass spectrometry , AOAC , Vol. 92, No. 1, p. 263-270 , 2009 (*)
	7. Determination of 9 phenols: 2,3,4, 6 tetrachlorophenol, 2 chlorophenol, 2,4,5-Trichlorophenol, 2,4,6-Trichlorophenol, 2,4-Dichlorophenol, 2,4-Dimethylphenol, 2,6-Dichlorophenol, 4-Chloro-3-methyl phenol, Pentachlorophenol	In house method O.B.15.004 GC-MSHS-GC-MSMS modified and based on: EAOT / EN 12673 , Gas chromatographic determination of some selected chlorophenols in water (*)
	8. Determination of Hydrocarbons dissolved or emulsified - Oils (fats and oils)	In house method O.B.15.005 GC-MSHS- GC-FID modified and based on: ISO 9377.02: "Water quality- Determination of hydrocarbon oil index-Part1:Method using solvent extraction and gas chromatography" (*)
	9. Determination of oxidisability	Modified method based on ISO 8467 (*) O.B.01.037

Materials / Products Tested	Types of Test / Properties	Applied Standards / Techniques
(*) Methods marked with (*) comply with the performance criteria specified in KYA 39381 (Government Gazette 3282) concerning the quality of drinking water.		
18. Wastewater	1. Determination of chloride ions	Modified method based on 4500-Cl, B (APHA, Standard Methods 23 rd Ed. 2017) O.B.01.007
	2. Determination of pH	4500-H, B (APHA, Standard Methods (APHA, Standard Methods 23 rd Ed. 2017) O.B.01.005
	3. Determination of conductivity	2510 B (APHA, Standard Methods 23 rd Ed. 2017) O.B.01.006
	4. Determination of COD	HACH LCK 314, LCK 514 O.B.01.023
	5. Determination of hexavalent Chromium	Modified method based on 3500 – Cr / (APHA, Standard Methods 23 rd Ed. 2017) and HACH LCK 313 O.B.01.024
19. Soil	1. Determination of Cu, Zn, Mn, Fe	Modified method using ICP based on W. L. Lindsay, W.A. Norvell, Soil Science Society, American Journal vol.42, 1978, extraction with DTPA O.B.01.302
	2. Determination of Mg, K	Modified method using ICP based on “Method of Soil Analysis” 1982, American Society of Agronomy, p. 559-581, extraction with ammonium acetate O.B.01.301
	3. Determination of pH	Modified method based on Method of Soil Analysis” 1982, American Society of Agronomy, p. 488, extraction with water 1:2 O.B.01.300
	4. Determination of total CaCO ₃	Pressure Calcimeter Method Modified based on Method of Soil Analysis 1996 Part 3 O.B.01.303
	5. Determination of organic carbon	Modified Walkley-Black method based on Method of Soil Analysis 1996 Part 3 (Modified) O.B.01.304

Materials / Products Tested	Types of Test / Properties	Applied Standards / Techniques
	6. Determination of 55 pesticide residues 2,4'-DDD, 2,4'-DDE, 2,4'-DDT, 4,4'-DDD, 4,4'-DDE, 4,4'-DDT, Alachlor, Aldrin, Alpha-Endosulfan, Benfluralin, Beta-Endosulfan., Bifenox, Bifenthrin, Biphenyl, Bromopropylate, CHLORDANE CIS, CHLORDANE TRANS, Dicofol, Dieldrin, Diphenyl sulfide, EPN, Endosulfan-sulfate, Endrin, Ethafluralin, Ethoprophos, Fenitrothion, Fensulfothion, Fluotrimazol, alpha-HCH, beta-HCH, delta-HCH, Heptachlor, Heptachlor-endo-epoxide, Heptachlor-exo-epoxide, Hexachlorobenzene, Leptophos, Lindane, Methacriphos, Metolachlor-S, Oxyfluorfen, ParathionEthyl, ParathionMethyl, PirimiphosEthyl, Propanil, Propetamphos, Propham, Prothiofos, Quinalphos, Quintozene, Tecnazene, Tefluthrin, Terbacil, Tetradifon, Transfluthrin, Trifluralin	Modified method using GC-MS-MS based on ISO 10382: Determination of organochlorine pesticides in soil OB 02.035
20. Swimming pool water	1. Determination of pH	4500-H, B (APHA, Standard Methods (APHA, Standard Methods 23rd Ed. 2017) O.B.01.005
	2. Determination of total Alkalinity	In house method based on HACH Application DOC 316.52.93085 and ISO 9963-1:1994 O.B..01.043
	3. Determination of Turbidity	Modified method based on 2130 B (APHA, Standard Methods 23rd Ed. 2017) using a portable turbidity meter O.B.01.028
21. Liquid Fertilizers	1. Determination of total Kjeldahl nitrogen (N) % w/v	Modified method based on AOAC 978.02 O.B.08.101
22 Solid and Liquid Fertilizers	1. Determination of Water Soluble Phosphorous (P ₂ O ₅) % w/w	Modified method based on Regulation (EU) 2003/2003M.3.1.6 και M.3.2 O.B.08.103
	2. Determination of Water Soluble potassium (K ₂ O) % w/w	Modified method based on Regulation (EU) 2003/2003M.4.1 (flame photometry) O.B.08.104
	1. Determination of Total Nitrogen (N) % w/w using the DUMAS method	Modified method based on AOAC 993.13 O.B.08.102
23. Liquid and solid formulations of plant protection products. (accreditation applies to various formulations and various active substances in a flexible scope and It is described in detail in the <u>List of Accredited Activities available</u> in the laboratory website)	1. Quantitative determination of active substance using HPLC	Modified method based on CIPAC L, 649/TC/M/2.1 (HPLC-DAD) O.B.08.301
	2. Quantitative determination of active substance using GC	Modified method based on CIPAC G, 471/TC/M/2.1 (GC-FID) O.B.08.302
Test categories 23.1 and 23.2 are accredited in a flexible scope. Therefore the laboratory may modify, improve or develop new methods, which are considered accredited according to Guideline KO-EYEA/01/00/28-07-2011.		

Materials / Products Tested	Types of Test / Properties	Applied Standards / Techniques
24. Liquid and solid formulations of plant protection products.	1. Determination of pH value	CIPAC J, MT 75.3 O.B.08.303
	2. Quantitative determination of non-dispersible material	CIPAC K, MT 185 (wet sieve) O.B.08.305
25. Liquid formulations of plant protection products.	Determination of Density	Modified method based on CIPAC F, MT 3.1 O.B.08.304
26. Solid formulations of plant protection products.	Determination of the time of complete wetting of wettable powders	CIPAC F, MT 53.3 O.B.08.306
<u>Organoleptic (Sensory) Tests</u>		
27. Potable water	1. Odour	Modified method based on 2160 C (APHA, Standard Methods 23 rd Ed. 2017) (*).O.B.01.033
	2. Taste	Modified method based on 2160 C (APHA, Standard Methods 23 rd Ed. 2017) (*).O.B.01.033
<u>Physical Tests</u>		
28. Potable water, irrigation water, ground and surface water	1. Determination of Tritium	Modified method based on EN ISO 9698:2016 with Tri-CarbLSC (**). O.B.01.036
	2. Determination of total a & total b activity concentration for the determination of Total Indicative Dose	Modified based on EN ISO 11704:2010 µe Tri-Carb LSC(**) O.B.01.041
Potable water, irrigation water, ground and surface water (continued)	3. Determination of Uranium isotopes using ICP-MS: U ²³⁴ and U ²³⁸	Modified method based on EN ISO 17294-2 (**), conforming to Presidential Act 12-1057-2016 (GG 241B-2016) and Guideline 2013-51-EURATOM O.B. 01.035
(**) Methods marked with (**) comply with the performance criteria as referred to KYA 39381 (Government Gazette 3282) concerning the quality of drinking water and in particular Government Gazette 241 / B / 9-2-2016		
<u>Sampling</u>		
29. Potable water, borehole water, seawater	1. Determination of physical-chemical parameters	ISO 5667-1:2006 ISO 5667-3:2018 ISO 5667-9:1992 ISO 5667-5:2006, ISO 5667-11:2009
	2. Determination of microorganisms	ISO 5667-1:2006 ISO 5667-3:2018 ISO 5667-9:1992 ISO 5667-5:2006, ISO 5667-11:2009, ISO 19458:2006

Materials / Products Tested	Types of Test / Properties	Applied Standards / Techniques
30. Raw and processed agricultural products (discrete lots)	Sampling for pesticide residue analysis	In-house method based on: ISO 7002:86 "Agricultural food products – Layout for a standard method of sampling from a lot", 24333:09 "Cereals and cereal products – sampling" "Commission Directive 2002/63/EC of 11 July 2002 establishing Community methods of sampling for the official control of pesticide residues in and on products of plant and animal origin and repealing Directive 79/700/EEC"

Site of assessment : **Laboratory permanent premises, Industrial Area of Thessaloniki – Sindos, Greece**

Approved signatories: **A. Giannousios, M. Stampoulidou, J.Kaidatzis, G. Bekiaropoulos, M. Nerantzaki**

This Scope of Accreditation replaces the previous one dated 29.03.2019.

The Accreditation Certificate No. **44-5**, to ELOT ISO/IEC 17025:2017, is valid until 26.11.2021.

Athens, 20.12.2019

