

CERTIFICATE OF ANALYSIS

COSTUMER:

ACEITES ORO BAILÉN GALGÓN 99 S.L.U.
CTRA.DE PLOMEROS (FINCA CASA DEL AGUA)
23730 VILLANUEVA DE LA REINA
JAEN

Certificate of Analysis (1): 41129102635 / M5/I

Laboratory reference: 1/4.943

Date of receipt: 21/11/2024

Final date of Analysis: 25/11/2024

Issue date: 29/11/2024

Sample for Testing: Olive Oils

Packing: 2 BOTES VIDRIO OPACO 500 ml TAPON PRECINTO VERDE Quantity: 1L

DATA PROVIDED BY CLIENT (2)

#Sample reference: LOTE: ORO BAILÉN ARBEQUINA. DEPÓSITOS 1 Y 12. 45626 Kg. 19/11/2024

ANALYSIS RESULTS

Determination	Result	Unit	Limits	Procedure
Acidity				
Acidity	0.13	% (ac.oleic.)	≤ 0.8 (Nota 1)	PNT 1.08
Peroxide index				
Peroxide index	2.9	meq O2/kg	≤ 20 (Nota 1)	PNT 1.09
Spectrophotometric analysis				
K 270	0.12	-	≤ 0.22 (Nota 1)	PNT 1.10
K 232	1.54	-	≤ 2.50 (Nota 1)	PNT 1.10
ΔK	<0.01	-	≤ 0.01 (Nota 1)	PNT 1.10
Moisture				
Moisture and volatile matter	0.06	%	≤ 0.2 (Nota 2)	PNT 1.11
Insoluble impurities				
Impurities (Petroleum ether)	<0.05	%	≤ 0.10 (Nota 2)	PNT 1.12
Refraction Index				
Refraction Index (line D at 20°C)	1.4687	-	1.4677 - 1.4705 (Nota 2)	PNT 1.71
Ethyl Ester				
Ethyl ester	<10	mg/kg	Max 35 (Nota 1)	PNT 1.20
Content of waxes				
C40 + C42 + C44 + C46	139	mg/kg	No aplica (Nota 1)	PNT 1.20
C42 + C44 + C46	43	mg/kg	≤ 150 (Nota 1)	PNT 1.20
Total sterols and composition				
Total sterols	1404	mg/kg	≥ 1000 (Nota 1)	PNT 1.29
Cholesterol	<0.1	%	≤ 0.5 (Nota 1)	PNT 1.29
Brassicasterol	<0.1	%	≤ 0.1 (Nota 1)	PNT 1.29
Campesterol	4.1	%	≤ 4.0 (Nota 1)	PNT 1.29
Stigmasterol	0.9	%	< Camp (Nota 1)	PNT 1.29



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β-sitosterol (apparent)	93.9	%	≥ 93.0 (Nota 1)	PNT 1.29
Δ-7-Stigmastenol	0.3	%	≤ 0.5 (Nota 1)	PNT 1.29
Erythrodiol and Uvaol				
Erythrodiol and uvaol	2.3	%	≤ 4.5 (Nota 1)	PNT 1.29
Stigmastadienes				
Stigmastadiene	<0.02	mg/kg	≤ 0.05 (Nota 1)	PNT 1.16
Fatty acid Content				
Lauric (C12:0)	<0.02	%	No aplica	PNT 1.14
Myristic (C14:0)	0.01	%	≤ 0.03 (Nota 1)	PNT 1.14
Palmitic (C16:0)	14.51	%	7.00 -20.00 (Nota 1)	PNT 1.14
Palmitoleic (C16:1)	1.47	%	0.30 -3.50 (Nota 1)	PNT 1.14
Margaric (C17:0)	0.12	%	≤ 0.40 (Nota 1)	PNT 1.14
Margaroleic (C17:1)	0.25	%	≤ 0.60 (Nota 1)	PNT 1.14
Stearic (C18:0)	1.88	%	0.50 -5.00 (Nota 1)	PNT 1.14
Oleic (C18:1)	70.61	%	55.00 -85.00 (Nota 1)	PNT 1.14
Linoleic (C18:2)	9.61	%	2.50 -21.00 (Nota 1)	PNT 1.14
Linolenic (C18:3)	0.62	%	≤ 1.00 (Nota 1)	PNT 1.14
Arachidic (C20:0)	0.40	%	≤ 0.60 (Nota 1)	PNT 1.14
Eicosenoic (C20:1)	0.29	%	≤ 0.50 (Nota 1)	PNT 1.14
Behenic (C22:0)	0.12	%	≤ 0.20 (Nota 1)	PNT 1.14
Erucic (C22:1)	<0.10	%	No aplica	PNT 1.14
Lignoceric (C24:0)	0.09	%	≤ 0.20 (Nota 1)	PNT 1.14
Sum of trans Isomers				
Tr Oleic (C18:1T)	<0.03	%	≤ 0.05 (Nota 1)	PNT 1.14
Tr L (C18:2T) + Tr Ln (C18:3T)	<0.03	%	≤ 0.05 (Nota 1)	PNT 1.14
Dif ECN42 (HPLC) and ECN42 theoretical				
Difference ECN42	<0.05		≤ 0.2 (Nota 1)	PNT 1.19
2-glyceril Monopalmitate				
2-glyceril monopalmitate	0.6	%	Ver Nota A (Nota 1)	PNT 1.58
*Unsaponifiable fraction				
* Unsaponifiable matter	8.65	g/kg	Max 15 (Nota 2)	PNT 1.67 (Según ISO 3596)



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*Biophenols by HPLC				
* Biophenols by HPLC	267.3	mg/kg (tirosol)		COI/T.20/Doc.29
* Tyrosol	1.2	mg/kg		COI/T.20/Doc.29
* Hydroxytyrosol	<1.0	mg/kg (tirosol)		COI/T.20/Doc.29
* Oleacein	92.0	mg/kg (tirosol)		COI/T.20/Doc.29
* Oleocanthal	22.7	mg/kg (tirosol)		COI/T.20/Doc.29
*Total Polyphenols				
* Polyphenols (Cafeic)	292	mg Ac.cafeico/kg		PNT 1.56 (Folin -Ciocalteu)
*Quats				
* Cloromequat	<0.01	mg/kg	≤ 0.01	PNT.QUATs
* Diquat	<0.01	mg/kg	≤ 0.05	PNT.QUATs
* Paraquat	<0.01	mg/kg	≤ 0.02	PNT.QUATs
* Mepiquat	<0.01	mg/kg	≤ 0.05	PNT.QUATs
*Cupric chlorophyllins				
* Cupric chlorophyllins	<0.05	mg/Kg		
*Hexane				
* Hexane	<1.0	mg/kg		PNT 1.59
Metals.Note f)				
Iron	<1.0	mg/kg	Max 3 (Nota 2)	ICP/MS (Ver Nota f)
Copper	<0.10	mg/kg	Max 0.1 (Nota 2)	ICP/MS (Ver Nota f)
Lead	<0.020	mg/kg	Max 0.10 (Nota 4)	ICP/MS (Ver Nota f)
Total Arsenic	<0.020	mg/kg	Max 0.1 (Nota 2)	ICP/MS (Ver Nota f)
*Aflatoxin				
* Aflatoxin B1	<0.5	ug/kg		HPLC-MS
* Aflatoxin B2	<0.5	ug/kg		HPLC-MS
* Aflatoxin G1	<0.5	ug/kg		HPLC-MS
* Aflatoxin G2	<0.5	ug/kg		HPLC-MS
* Total Aflatoxins	<0.5	ug/kg		HPLC-MS
Polycyclic aromatic hydrocarbons				
Benzo(a)anthracene	<0.5	ug/kg		PNT 1.23
Chrysene	<0.5	ug/kg		PNT 1.23



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Benzo(b)fluoranthene	<0.5	ug/kg		PNT 1.23
Benzo(a)pyrene	<0.5	ug/kg	Máx 2.0 (Nota 4)	PNT 1.23
PAH4 (sum B(a)A+Cr+B(b)F+B(a)P)	<2.0	ug/kg	Máx 10.0 (Nota 4)	PNT 1.23

Multiresidue (GC-MS/MS)

Procedure: PNT 1.13

Unit: mg/kg

Determination	Result	Determination	Result	Determination	Result
* 2,4-Methoxychlor	<0.010	2-Phenylphenol(OPP)	<0.010	Acetochlor	<0.010
Acrinathrin	<0.010	Alachlor	<0.010	* Aldrin	<0.010
* Ametryn	<0.010	Anthraquinone	<0.010	Atrazine	<0.010
* Azinphos-ethyl	<0.010	* Azinphos-methyl	<0.010	Azoxystrobin	<0.010
Benalaxyl	<0.010	* Bendiocarb	<0.010	Benfluralin	<0.010
* Bifenox	<0.010	Bifenthrin	<0.010	* Biphenyl	<0.010
Boscalid	<0.010	* Bromacil	<0.010	Bromfenvinphos-ethyl	<0.010
Bromfenvinphos-methyl	<0.010	Bromophos-ethyl	<0.010	Bromophos-methyl	<0.010
Bromopropylate	<0.010	Bupirimate	<0.010	Buprofezin	<0.010
* Carbaryl	<0.010	* Carbofuran (No Sum)	<0.010	Carbophenothion	<0.010
Carfentrazone-ethyl (No Sum)	<0.010	Chlorantraniliprole	<0.010	Chlorbenside	<0.010
Chlordane (cis+trans)	<0.015	Chlordane cis	<0.010	Chlordane trans	<0.010
Chlorfenapyr	<0.010	Chlorfenson	<0.010	Chlorfenvinphos	<0.010
* Chlornitrofen	<0.010	Chlorobenzilate	<0.010	Chloroneb	<0.010
* Chlorothalonil	<0.010	Chlorpropham	<0.010	Chlorpyrifos	<0.010
Chlorpyrifos-methyl	<0.010	Chlorthal-dimethyl	<0.010	Chlorthiophos	<0.010
* Chlozolinate	<0.010	* Chrotoxyphos	<0.010	Clomazone	<0.010



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Coumaphos	<0.010	Cyfluthrin (sum of isomers)	<0.010	Cyhalofop-butyl	<0.010
Cypermethrin (sum of isomers)	<0.010	* Cyproconazole	<0.010	Cyprodinil	<0.010
Deltamethrin	<0.010	Di-allate	<0.010	Diazinon	<0.010
* Dichlobenil	<0.010	Dichlofluanid	<0.010	Dichlorobenzophenone, 4,4'-	<0.010
* Dichlorvos	<0.010	Dicloran	<0.010	Dieldrin	<0.010
Diethofencarb	<0.010	Difenoconazole	<0.010	Diiflufenican	<0.010
Dimethachlor	<0.010	Dimethenamid	<0.010	* Dimethoate	<0.010
Diphenamid	<0.010	Diphenylamine	<0.010	* Disulfoton (No Sum)	<0.010
* Diuron	<0.010	Edifenphos	<0.010	Endosulfan (alpha+beta+sulphate)	<0.020
Endosulfan alpha	<0.010	Endosulfan beta	<0.010	Endosulfan sulfate	<0.010
Endrin	<0.010	* Endrin ketone	<0.010	EPN	<0.010
Ethalfuralin	<0.010	Ethion	<0.010	Ethofumesate (No Sum)	<0.010
Ethylan	<0.010	* Etofenprox	<0.010	Etoxazole	<0.010
1,1-dichloro-2,2-bis(4-ethylphenyl)ethane	<0.010	Etrimfos	<0.010	Fenamidone	<0.010
* Etridiazole	<0.010	Fenarimol	<0.010	* Fenazaquin	<0.010
* Fenamiphos (No Sum)	<0.010	Fenitrothion	<0.010	Fenpropathrin	<0.010
Fenchlorphos (No Sum)	<0.010	Fenthion (No Sum)	<0.010	Fenvalerate	<0.010
Fenson	<0.010	Fluazifop-butyl (No Sum)	<0.010	Fluchloralin	<0.010
Fipronil (No Sum)	<0.010	Fludioxonil	<0.010	Flumioxazin	<0.010
Flucythrinate	<0.010	* Fluorodifen	<0.010	Fluquinconazole	<0.010
Fluopicolide	<0.010	Flusilazole	<0.010	Fluvalinate-Tau	<0.010
Fluridone	<0.010	Fonofos	<0.010	* Formothion	<0.010
* Folpet (+Folpet deg.)	<0.010	Haloxifop-etotyl	<0.010	Haloxifop-methyl (incl.H.p-methyl)	<0.010
* Genite	<0.010				



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Determination	Result	Determination	Result	Determination	Result
* HCH (alpha+beta+delta)	<0.020	HCH alpha	<0.010	* HCH beta	<0.010
HCH delta	<0.010	Heptachlor	<0.010	Heptachlor (+heptachlor epoxide)	<0.015
Heptachlor epoxide	<0.010	Heptenophos	<0.010	* Hexachlorobenzene	<0.010
* Hexazinone	<0.010	* Indanofan	<0.010	* Indoxacarb	<0.010
Iodofenphos	<0.010	* Iprodione	<0.010	Isazofos	<0.010
* Isodrin	<0.010	Isufenphos	<0.010	Isufenphos-methyl	<0.010
Isopropalin	<0.010	Kresoxim-methyl	<0.010	Lambda-Cyhalothrin	<0.010
* Lenacil	<0.010	Leptophos	<0.010	* Lindane (HCH-g)	<0.010
* Linuron	<0.010	Malathion (No Sum)	<0.010	Mefenpyr-diethyl	<0.010
Metazachlor (No Sum)	<0.010	Methacrifos	<0.010	Methidathion	<0.010
* Methoxychlor	<0.010	Metolachlor (No Sum)	<0.010	Metrafenone	<0.010
Metribuzin	<0.010	* Mevinphos	<0.010	Myclobutanil	<0.010
* Nitralin	<0.010	Nitrofen	<0.010	* Nonachlor (cis+trans)	<0.015
* Nonachlor cis	<0.010	* Nonachlor trans	<0.010	Norflurazon	<0.010
Nuarimol	<0.010	o,p'-DDD	<0.010	o,p'-DDE	<0.010
* o,p'-DDT	<0.010	Oxadiazon	<0.010	* Oxadixyl	<0.010
Oxyfluorfen	<0.010	* p,p'-DDD	<0.010	* p,p'-DDE	<0.010
* p,p'-DDT	<0.010	Paclobutrazol	<0.010	Parathion-ethyl	<0.010
Parathion-methyl (No Sum)	<0.010	Pebulate	<0.010	Penconazole	<0.010
Pendimethalin	<0.010	Pentachloroaniline	<0.010	* Pentachloroanisole	<0.010
* Pentachlorobenzene	<0.010	Pentachlorobenzonitrile	<0.010	* Pentachlorothioanisole	<0.010
Permethrin (cis+trans)	<0.015	Permethrin cis	<0.010	Permethrin trans	<0.010
Phenothrin	<0.010	Phenthoate	<0.010	Phorate (No Sum)	<0.010
Phosalone	<0.010	Phosmet	<0.010	Piperonylbutoxide	<0.010
Pirimicarb	<0.010	Pirimiphos-ethyl	<0.010	Pirimiphos-methyl	<0.010
Pretilachlor	<0.010	* Prochloraz	<0.010	Procymidone	<0.010
Prodiamine	<0.010	Profenofos	<0.010	Profluralin	<0.010



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Prometryn	<0.010	Propachlor (No Sum)	<0.010	Propanil	<0.010
Propargite	<0.010	Propiconazole	<0.010	Propisochlor	<0.010
Propyzamide	<0.010	* Prosulfocarb	<0.010	Prothiofos	<0.010
Pyraclufos	<0.010	* Pyraclostrobin	<0.010	Pyraflufen-ethyl (No Sum)	<0.010
Pyrazophos	<0.010	Pyridaben	<0.010	Pyridaphenthion	<0.010
Pyrifenox	<0.010	Pyrimethanil	<0.010	Pyriproxyfen	<0.010
Quinalphos	<0.010	Quinoxifen	<0.010	Quintozene	<0.010
Quintozene (+pentacloroaniline)	<0.015	* Resmethrin	<0.010	Simazine	<0.010
Sulfotep	<0.010	Sulprofos	<0.010	* Tebuconazole	<0.010
Tebufenpyrad	<0.010	Tecnazene	<0.010	Tefluthrin	<0.010
* Terbacil	<0.010	Terbufos	<0.010	* Terbumeton	<0.010
Terbutylazine	<0.010	Terbutryn	<0.010	Tetrachloroaniline, 2	<0.010
Tetrachlorvinphos	<0.010	Tetraconazole	<0.010	Tetradifon	<0.010
* Tetramethrin	<0.010	Tolclofos-methyl	<0.010	Tolyfluanid (No Sum)	<0.010
Transfluthrin	<0.010	Triadimefon	<0.010	* Triadimenol	<0.010
Tri-allate	<0.010	Triazophos	<0.010	* Tridiphane	<0.010
Trietazine	<0.010	Trifloxystrobin	<0.010	Trifluralin	<0.010
Vinclozolin	<0.010				

The values of indicated limits are for the category: Extra Virgin Olive Oil

Comments:



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Note 1: Limits indicated in Implementing Regulation (EU) 2023/731.

Note 2: Limits of CODEX Stan 33-1981. Last rev.

Note 3: Limits specified in the COI/T.15/NC N°3

Note 4: Limits specified in the (UE) Regulation 2023/915 and subsequent amendments.

The Maximum Residue Limits for Olives for oil are indicated (Reg.UE 396/2005 and post mod). According to Reg. Execution (UE) 2022/741, to calculate the MRL in olive oil, it will be multiplied by the transformation factor of the oil established in each Member State.

Pesticides indicated with "(No Sum)" do not include the full EU pesticide residue definition.

Nota f) Ensayo cubierto por la acreditación N° 493/LE1019

Nota A: Max 0.9 (si Ac.Palmitico < 14 %) y Max 1.0 (Si Ac.Palmitico >14%)

- La composición de esteroides cumple con el árbol de decisiones para el Campesterol del Reglamento Delegado (UE) 2022/2104

NOTES:

Results that are expressed as a sum have been calculated prior to the rounding of decimals of each of the individually reported results.

LC: limit of quantification. PNT: Normalized Work Procedure.

The calculated uncertainty (U), in physicochemical parameters, is for a confidence level of 95% (k = 2), expressed in absolute value.

Analytical methods results that include extraction phase have not been corrected because recovery factors are between 95% - 105%

Vº Bº Jefe de Laboratorio


M.ª Luisa Cuenca
Jefe de Laboratorio
Fdo: M.ª Luisa Cuenca de los Cobos

(1) This report has been issued by Laboratorio Juan Antonio Tello S.L.U.

(2) Laboratorio Juan Antonio Tello S.L.U. is not responsible for the information of the sample provided by the client or for the sample collection.

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