

CERTIFICATE OF ANALYSIS



Juniper Analytics, LLC
 1334 NE 2nd Street, Bend, OR, 97701
 541.382.3796
 ORELAP: 4101 / OLCC: 010-10035537931

Client Name: Arise Bioscience
 Contact Info:
 Sample Type: Extract
 External Batch ID: NA
 Harvest/Prod. Date: NA
 Sample ID: 0015-NAT
 METRC ID: Personal
 Juniper Batch #: 19JA3355.01
 Intake Date: 12/20/2019

NOT FOR COMPLIANCE

Sample not sampled per
 OAR 333-064-0100

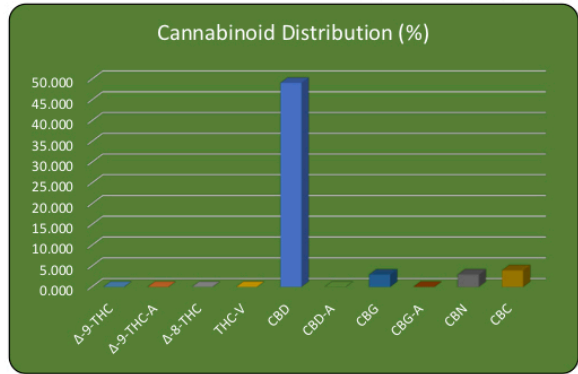


Potency Analysis (Oregon Compliance Standard OAR 333-007-0430)

ANALYSIS DATE: 12/26/2019

Instrument: HPLC/DAD
 Method: JA-Potency-Proprietary

Compound	Weight (%)	Concentration (mg/g)	LOQ * (mg/g)
Δ-9-THC	<LOQ	<LOQ	1.00
Δ-9-THC-A	<LOQ	<LOQ	1.00
Δ-8-THC	<LOQ	<LOQ	1.00
THC-V	<LOQ	<LOQ	1.00
CBD	49.136	491.36	1.00
CBD-A	<LOQ	<LOQ	1.00
CBG	2.952	29.52	1.00
CBG-A	<LOQ	<LOQ	1.00
CBN	2.963	29.63	1.00
CBC	3.956	39.56	1.00



TOTAL THC/CBD	Weight (%)	Conc (mg/g)
THC Total =	<LOQ	<LOQ

THC_{Total} = (THC-A * 0.877) + Δ9THC

CBD Total =	49.136	491.36
-------------	--------	--------

CBD_{Total} = (CBD-A * 0.877) + CBD

* < LOQ - Less than the Limit of Quantification

Residual Solvent Analysis (Oregon Compliance Standard OAR 333-007-0410)

ANALYSIS DATE:	Not Tested	
Solvent	Result (ppm)	Action Level / LOQ (ppm)
1,4-Dioxane		380 / 100
2-Butanol		5000 / 500
2-Ethoxyethanol		160 / 100
2-Propanol (IPA)		5000 / 500
Acetone		5000 / 500
Acetonitrile		410 / 100
Benzene		2 / 1
Cumene		70 / 50
Cyclohexane		3880 / 500
Dichloromethane		600 / 100
Ethyl acetate		5000 / 500
Ethyl ether		5000 / 500
Ethylene glycol		620 / 300
Ethylene oxide		50 / 10
Heptane		5000 / 500
Isopropyl acetate		5000 / 500
Methanol		3000 / 500
Propane		5000 / 500
Tetrahydrofuran		720 / 100
Toluene		890 / 100

Instrument: GC/MS	Method: USP 467 - Modified	
Solvent	Result (ppm)	Action Level / LOQ (ppm)
Pentanes;		5000 / 500
-n-pentane		**
-iso-pentane		**
-neo-pentane		**
Butanes;		5000 / 500
-n-butane		**
-iso-butane		**
Hexanes;		290 / 50
-n-hexane		**
-2-methylpentane		**
-3-methylpentane		**
-2,2-dimethylbutane		**
-2,3-dimethylbutane		**
Xylenes;		2170 / 300
-1,2-dimethylbenzene		**
-1,3-dimethylbenzene		**
-1,4-dimethylbenzene		**
-Ethyl benzene		**

**Limit based on combined results

Residual Solvents N/A

Tentatively Identified Compounds: N/A

<LOQ - Less than the Limit of Quantification

Report Revised - strain name and company name changed.

APPROVAL

[Signature]
 QA Review

Report Date: 12/26/2019



Customer: Arise Bioscience
Product identity: 0015-NAT
Client/Metric ID: .
Laboratory ID: 20-000078-0001

Sample Date: 12/30/19

Summary

Residual Solvents:

All analytes passing and less than LOQ.

Pesticides:

Analyte	Result (mg/kg)	Limits (mg/kg)	Status
Metolachlor†	0.39		
Ethofumesate†	0.27		
Ethoprophos†	0.099		
Fluopyram†	0.033		

Metals:

Less than LOQ for all analytes.

Microbiology:

Less than LOQ for all analytes.



Customer: Arise Bioscience
4855 Technology Way, Suite 500
Boca Raton, FL 33431
United States

Product identity: 0015-NAT
Client/Metric ID: .
Sample Date: 12/30/19
Laboratory ID: 20-000078-0001
Relinquished by: UPS
Temp: 16.9 °C

Sample Results

Microbiology								
Analyte	Result	Limits	Units	LOQ	Batch	Analyze	Method	Notes
E.coli	< LOQ		cfu/g	10	2000080	01/06/20	AOAC 991.14 (Petrifilm)	X
Total Coliforms	< LOQ		cfu/g	10	2000080	01/06/20	AOAC 991.14 (Petrifilm)	X
Mold (RAPID Petrifilm)	< LOQ		cfu/g	10	2000081	01/06/20	AOAC 2014.05 (RAPID)	X
Yeast (RAPID Petrifilm)	< LOQ		cfu/g	10	2000081	01/06/20	AOAC 2014.05 (RAPID)	X

Solvents		Method EPA5021A				Units µg/g	Batch 2000066	Analyze 01/03/20 01:43 PM			
Analyte	Result	Limits	LOQ	Status	Notes	Analyte	Result	Limits	LOQ	Status	Notes
1,4-Dioxane	< LOQ	380	100	pass		2-Butanol	< LOQ	5000	200	pass	
2-Ethoxyethanol	< LOQ	160	30.0	pass		2-Methylbutane	< LOQ		200		
2-Methylpentane	< LOQ		30.0			2-Propanol (IPA)	< LOQ	5000	200	pass	
2,2-Dimethylbutane	< LOQ		30.0			2,2-Dimethylpropane	< LOQ		200		
2,3-Dimethylbutane	< LOQ		30.0			3-Methylpentane	< LOQ		30.0		
Acetone	< LOQ	5000	200	pass		Acetonitrile	< LOQ	410	100	pass	
Benzene	< LOQ	2.00	1.00	pass		Butanes (sum)	< LOQ	5000	400	pass	
Cyclohexane	< LOQ	3880	200	pass		Ethyl acetate	< LOQ	5000	200	pass	
Ethyl benzene	< LOQ		200			Ethyl ether	< LOQ	5000	200	pass	
Ethylene glycol	< LOQ	620	200	pass		Ethylene oxide	< LOQ	50.0	30.0	pass	
Hexanes (sum)	< LOQ	290	150	pass		Isopropyl acetate	< LOQ	5000	200	pass	
Isopropylbenzene	< LOQ	70.0	30.0	pass		m,p-Xylene	< LOQ		200		
Methanol	< LOQ	3000	200	pass		Methylene chloride	< LOQ	600	200	pass	
Methylpropane	< LOQ		200			n-Butane	< LOQ		200		
n-Heptane	< LOQ	5000	200	pass		n-Hexane	< LOQ		30.0		
n-Pentane	< LOQ		200			o-Xylene	< LOQ		200		
Pentanes (sum)	< LOQ	5000	600	pass		Propane	< LOQ	5000	200	pass	
Tetrahydrofuran	< LOQ	720	100	pass		Toluene	< LOQ	890	100	pass	
Total Xylenes	< LOQ		400			Total Xylenes and Ethyl	< LOQ	2170	600	pass	



Pesticides Method AOAC 2007.01 & EN 15662 (mod) Units mg/kg Batch 2000198 Analyze 01/10/20 11:20 AM

All compounds on the attached sheet were found to be <LOQ except those listed

Analyte	Result	Limits	LOQ	Status	Notes	Analyte	Result	Limits	LOQ	Status	Notes
Ethofumesate [†]	0.27		0.050			Ethoprophos [†]	0.099		0.020		
Fluopyram [†]	0.033		0.020			Metolachlor [†]	0.39		0.100		

Metals

Analyte	Result	Limits	Units	LOQ	Batch	Analyze	Method	Notes
Arsenic	< LOQ		mg/kg	0.0497	2000160	01/07/20	AOAC 2013.06 (mod.)	X
Cadmium	< LOQ		mg/kg	0.0497	2000160	01/07/20	AOAC 2013.06 (mod.)	X
Lead	< LOQ		mg/kg	0.0497	2000160	01/07/20	AOAC 2013.06 (mod.)	X
Mercury	< LOQ		mg/kg	0.0249	2000160	01/07/20	AOAC 2013.06 (mod.)	X

Mycotoxins

Analyte	Result	Limits	Units	LOQ	Batch	Analyze	Method	Notes
Aflatoxin B1 [†]	< LOQ		µg/kg	5.00	2000125	01/07/20	AOAC 2007.01 & EN 15662	
Aflatoxin B2 [†]	< LOQ		µg/kg	5.00	2000125	01/07/20	AOAC 2007.01 & EN 15662	
Aflatoxin G1 [†]	< LOQ		µg/kg	5.00	2000125	01/07/20	AOAC 2007.01 & EN 15662	
Aflatoxin G2 [†]	< LOQ		µg/kg	5.00	2000125	01/07/20	AOAC 2007.01 & EN 15662	
Deoxynivalenol [†]	< LOQ		µg/kg	200	2000125	01/07/20	AOAC 2007.01 & EN 15662	
Fumonisin B1 [†]	< LOQ		µg/kg	200	2000125	01/07/20	AOAC 2007.01 & EN 15662	
Fumonisin B2 [†]	< LOQ		µg/kg	200	2000125	01/07/20	AOAC 2007.01 & EN 15662	
HT2-Toxin [†]	< LOQ		µg/kg	40.0	2000125	01/07/20	AOAC 2007.01 & EN 15662	
Nivalenol [†]	< LOQ		µg/kg	400	2000125	01/07/20	AOAC 2007.01 & EN 15662	
Ochratoxin A [†]	< LOQ		µg/kg	5.00	2000125	01/07/20	AOAC 2007.01 & EN 15662	
Ochratoxin B [†]	< LOQ		µg/kg	2.00	2000125	01/07/20	AOAC 2007.01 & EN 15662	
T2-Toxin [†]	< LOQ		µg/kg	20.0	2000125	01/07/20	AOAC 2007.01 & EN 15662	
Zearalenone [†]	< LOQ		µg/kg	200	2000125	01/07/20	AOAC 2007.01 & EN 15662	

Nutrition

Analyte	Result	Limits	Units	LOQ	Batch	Analyze	Method	Notes
Moisture (Loss on Drying)	1.33		g/100g	0.10	2000133	01/06/20	AOAC 925.10 (mod.)	X
Water Activity	0.230		Aw	0.030	2000241	01/09/20	AOAC 978.18	X



These test results are representative of the individual sample selected and submitted by the client.

Abbreviations

Limits: Action Levels per OAR-333-007-0400, OAR-333-007-0210, OAR-333-007-0220

Limit(s) of Quantitation (LOQ): The minimum levels, concentrations, or quantities of a target variable (e.g., target analyte) that can be reported with a specified degree of confidence.

† = Analyte not NELAP accredited.

Units of Measure

cfu/g = Colony forming units per gram

g/100g = Grams per 100 Grams

µg/g = Microgram per gram

µg/kg = Micrograms per kilogram = parts per billion (ppb)

mg/kg = Milligram per kilogram = parts per million (ppm)

Aw = Water Activity

% wt = µg/g divided by 10,000

Glossary of Qualifiers

X: Not ORELAP accredited.

Approved Signatory

Derrick Tanner
General Manager



Fixis Labs
Canrabis Multi-Residue Profile, Limits of Quantitation

Compound	LOQ (mg/kg)	Compound	LOQ (mg/kg)	Compound	LOQ (mg/kg)
Abamectin	0.100	CIFC	1.000	Endrin	0.100
Acephate	0.100	Clethodim	0.050	EPN	0.050
Acequinocyl	0.100	Clethodim Sulfone	0.050	EPTC	0.100
Acetamiprid	0.020	Clethodim Sulfoxide	0.050	Esfenvalerate/ Fenvalerate	0.200
Acetochlor	0.100	Cbfentazine	0.020	Etaconazole	0.100
Acrinathrin	0.100	Cbmazone	0.020	Ethalfuralin	0.100
Alachlor	0.100	Cbthianidin	0.200	Ethiofencarb	0.050
Aldicarb	0.100	Cumaphos	0.050	Ethion	0.200
Aldicarb sulfoxide	0.100	Crdoxyphos	0.020	Ethirimol	0.100
Aldoxycarb (Aldicarb-sulfone)	0.100	Cyarazine	0.020	Ethofumesate	0.050
Aldrin	0.100	Cyazofenphos	0.020	Ethoprophos	0.020
Ametoctradin	0.020	Cyathraniliprole	0.050	Etofenprox	0.020
Ametryn	0.500	Cyazfamid	0.020	Etoxazole	0.020
Aspon	0.100	Cydoate	0.100	Etridiazole	0.100
Asulam	0.100	Cyfluthrin	0.200	Etrimefos	0.020
Atrazine	0.100	Cyhalothrin, lambda	0.200	Famoxadone	0.200
Atrazine-desethyl	0.100	Cymoxanil	0.050	Famphur	0.100
Azinphos-ethyl	0.020	Cypermethrin	0.200	Fenamidone	0.020
Azinphos-methyl	0.020	Cyprodinil	0.100	Fenamiphos	0.020
Azoxystrobin	0.020	Dadhal	0.100	Fenamiphos sulfone	0.020
Beralaxyl	0.020	Damnozide	0.100	Fenamiphos sulfoxide	0.020
Berthiocarb	0.020	DCPMU	0.050	Fenazaquin	0.100
Berfluralin	0.100	DDD, qp'	0.100	Fenbuconazole	0.100
Berxacor	0.050	DDD, p,p'	0.100	Fenchlorphos	0.100
Bersulide	0.050	DCE, o,p'	0.100	Fenchlorphos-oxon	0.100
BHC alpha isomer	0.100	DCE, p,p'	0.100	Fenhexamid	0.100
BHC beta isomer	0.100	DDT, o,p'	0.100	Fenitrothion	0.100
BHC delta isomer	0.500	DDT, p,p'	0.100	Fenobucarb	0.050
Bifenazate	0.020	DEF (Tribufos)	0.100	Fenoxycarb	0.020
Bifenthrin	0.020	Deltamethrin	0.100	Fenpropathrin	0.050
Boscalid	0.020	Desmedipham	0.100	Fenpyroximate	0.020
Bromophos-ethyl	0.100	Diallate	0.100	Fenson	0.100
Bromophos-methyl	0.200	Diazinon	0.020	Fensulfthion	0.020
Bromopropylate	0.100	Diazoxon	0.100	Fensulfthion oxon	0.020
Bromuconazole	0.100	Dichlobenil	0.100	Fensulfthion sulfone	0.100
Bupirimate	0.020	Dichlofluanid	0.100	Fensulfthion-oxon-sulfone	0.020
Buprofezin	0.050	Dichlorvos	0.100	Fenthion	0.050
Butachlor	0.500	Diclobutrazol	0.050	Fenthion oxon	0.020
Butralin	0.200	Dicofol	0.100	Fenthion oxon sulfone	0.100
Butylate	0.100	Dicrotophos	0.050	Fenthion oxon sulfoxide	0.020
Cadusafos	0.020	Dieldrin	0.100	Fenthion sulfoxide	0.100
Captan	1.000	Diethofencarb	0.020	Fenthion sulfone	0.050
Cartaryl	0.050	Diethyltoluamide (DEET)	0.050	Fenuron	0.020
Cartendazim	0.100	Difenoconazole	0.100	Fipronil	0.100
Cartofuran	0.020	Dimethenamid	0.050	Fonicamid	0.100
Cartophenothion	0.100	Dimethoate	0.050	Rucloralin	0.100
Cartoxin	0.020	Dimethomorph	0.020	Rucluthrinat	0.100
Carfentrazone-ethyl	0.100	Diniconazole	0.200	Rudioxonil	0.200
Chlorantraniliprole	0.020	Dinotefuran	0.200	Rufenacet	0.020
Chordane, cis	0.200	Dioxathion	0.100	Rumioxazin	0.100
Chordane, trans	0.200	Diphenamid	0.020	Fuometuron	0.020
Chorfenapyr	0.500	Diphenylamine	0.100	Fuopicolide	0.050
Chorfenoson	0.200	Disulfoton	0.100	Fuopyram	0.020
Chorfenvinphos	0.050	Disulfoton sulfone	0.100	Fuoxastrobin	0.050
Chorobenzilate	0.100	Disulfoton sulfoxide	0.100	Fuopyradfurone	0.020
Choroneb	0.200	Diuron	0.050	Furidone	0.100
Chorpyrifos	0.050	Edifenphos	0.050	Fusilazole	0.020
Chorpyrifos-methyl	0.200	Endosulfan alpha	0.200	Flutolanil	0.020
		Endosulfan beta	0.200	Flutriafol	0.020
		Endosulfan sulfate	0.100	Fluvalinate, tau-	0.100
				Fluxapyroxad	0.020



Fixis Labs
Cannabis Multi-Residue Profile, Limits of Quantitation

Compound	LOQ(mg/kg)	Compound	LOQ(mg/kg)	Compound	LOQ(mg/kg)
Fomesafen	0.100	Mexacarbate	0.020	Propamocarb	0.050
Fonofos	0.100	MGK 264	0.020	Proparil	0.050
Forchlorfenuron	0.050	Mirex	0.100	Propargite	0.050
Formetanate	0.050	Molinate	0.050	Propazine	0.020
Furathiocarb	0.020	Monocrotophos	0.100	Propetamphos	0.050
Heptachlor	0.100	Monolinuron	0.020	Propham	0.050
Heptachlor epoxide	0.100	Myclobutanil	0.050	Propiconazole	0.050
Heptenophos	0.100	Naled	0.100	Propoxur	0.050
Hexachlorobenzene	0.100	Napropamide	0.050	Propoxycarbazone Na	0.050
Hexaconazole	0.100	Neburon	0.020	Propyzamide	0.050
Hexazinone	0.100	Nitrapyrin	0.100	Prthiofos	0.100
Hexythiazox	0.020	Norflurazon	0.050	Pyraclostrobin	0.020
Imazalil	0.100	Omethoate	0.100	Pyrazophos	0.050
Imidacloprid	0.100	O-Phenylphenol	0.100	Pyrethrins	0.050
Indaziflam	0.020	Oxadixyl	0.100	Pyridaben	0.020
Indoxacarb	0.020	Oxamyl	0.100	Pyridafol	0.100
Iprobenfos	0.100	Oxamyl-oxime	0.100	Pyridate	0.020
Iprodione	0.100	Oxychlorane	0.100	Pyrimethanil	0.050
Isobenzan	0.100	Oxydemeton-Methyl	0.100	Pyriproxifen	0.020
Isocarbophos	0.500	Oxythioquinox	0.200	Pyroxasulfone	0.020
Isodrin	0.100	Paclobutrazol	0.050	Pyroxulam	0.020
Isufenphos	0.050	Paraoxon-ethyl	0.020	Quinalphos	0.050
Isufenphos-methyl	0.020	Paraoxon methyl	0.100	Quinoxifen	0.050
Isufenphos oxon	0.050	Parathion ethyl	0.100	Quintozene (PCNB)	0.200
Isoprocarb	0.020	Parathion methyl	0.200	Resmethrin	0.050
Isopropalin	0.200	Perconazole	0.050	Rotenone	0.050
Isoprothiolane	0.050	Perdimethalin	0.050	S421	0.100
Isoproturon	0.050	Perflufen	0.020	Smazine	0.100
Isoxaben	0.050	Pertachloroaniline	0.100	Smetryn	0.200
Isoxaflutole	0.050	Pertachloroanisole	0.100	Spinetoram	0.020
Kresoxim-methyl	0.050	Pentachlorobenzene (PCB)	0.100	Spinosad	0.050
Ladofen	0.500	Pentachloroanisole (PCTA)	0.100	Spirodiclofen	0.100
Lenadi	0.100	Perthiopyrad	0.020	Spiromesifen	0.050
Lindane (gammaBHC)	0.100	Permethrin	0.050	Spirotetramat	0.050
Linuron	0.020	Pethane	0.100	Spiroxamine	0.020
Malaaxon	0.050	Phenmedipham	0.050	Sulfotep	0.050
Malathion	0.050	Phenhoate	0.050	Sulfoxatlor	0.050
Mandipropamid	0.020	Phorate	0.050	Sulprofos	0.020
Mecarbam	0.020	Phorate Sulfone	0.050	Tebuconazole	0.100
Mepanipyrim	0.050	Phorate Sulfoxide	0.050	Tebufenozide	0.020
Merphos	0.500	Phosalone	0.050	Tebuthiuron	0.020
Metalaxyl	0.050	Phosmet	0.100	Tecnazene	0.100
Metaldehyde	0.050	Phosphamidon	0.050	Tefluthrin	0.100
Metconazole	0.100	Phoxim	0.050	Terbufos	0.020
Methacrifos	0.100	Pinoxaden	0.020	Terbufos sulfone	0.050
Methamidophos	0.050	Piperonyl butoxide	0.050	Terbufos sulfoxide	0.050
Methidathion	0.050	Pirimicarb	0.020	Terbutylazine	0.020
Methiocarb	0.050	Pirimiphos-methyl	0.050	Terbutryn	0.020
Methiocarb sulfone	0.100	Pirimiphos-ethyl	0.020	Tetraclorvinphos	0.050
Methiocarb sulfoxide	0.100	Pralethrin	0.100	Tetraconazole	0.050
Methomyl	0.100	Prochloraz	0.020	Tetradifon	0.200
Methoxychlor	0.100	Procymidone	0.100	Tetramethrin	0.050
Methoxyfenozide	0.020	Profenofos	0.100	Tetrasul	0.100
Metobromuron	0.050	Profluralin	0.100	Thiabendazole	0.100
Metolachlor	0.100	Promecarb	0.050	Thiabendazole, 5-hydroxy	0.100
Metolcarb	0.050	Prometon	0.100	Thiadoprid	0.050
Metazerenone	0.050	Prometryn	0.020	Thiamethoxam	0.100
Metribuzin	0.100	Propachlor	0.020	Thiobencarb	0.050
Mevinphos	0.100			Thiodicarb	0.050
				Thiophanate-methyl	0.050



PIXIS Labs
Cannabis Multi-Residue Profile, Limits of Quantitation

Compound	LOQ(mg/kg)	Compound	LOQ(mg/kg)	Compound	LOQ(mg/kg)
Tolclofos-methyl	0.100	Triazophos	0.020	Trifloxystrobin	0.020
Triforin	0.100	Tolyfluanid	0.050	Triticonazole	0.050
Tralkoxydim	0.100	Tridiphane	0.500	Vindozolin	0.100
Triadimefon	0.050	Triflumizde	0.020	Zoxamide	0.020
Triallate	0.100	Trifluralin	0.100		

LOQ=Limit of Quantitation, mg/kg

Factors affecting the LOQ include instrumentation sensitivity for a particular analyte, sample size, moisture content (percent solids) of the sample, effectiveness of the cleanup on the sample extract, and especially the type of sample matrix.