Aromatic Plant Research Center
230 N 1200 E STE 100
Lehi, UT 84043
www.aromaticplant.org

APRC®
Aromatic Plant Research Center

Laboratory Test Report

SAMPLE NAME : Ginger Zingiber officinale
CLIENT NAME : American College of Healthcare Sciences (ACHS)
CLIENT LOT # : 29329R
APRC LOT# : ACH251030A

Column : ZB5 (60 m length × 0.25 mm inner diameter × 0.25 µm film thicknes
Instrument : Shimadzu GCMS-QP2010 Ultra
Carrier gas : Helium 80 psi
Temperature ramp : 2 degrees Celsius per minute up to 260-degree Celsius
Split ratio : 30:1
Sample preparation : 5% w/v solution with Dichloromethane

Interpretation on this sample
The analysis of Ginger sample meets the standard chemical profile of Zingiber officinale essential oil.

Analyzed by : Dr Prabodh Satyal
Reviewed by : Ambika Poudel

Issued Date : 11/1/2025

Aromatic Plant Research Center
230 N 1200 E STE 100
Lehi, UT 84043
www.aromaticplant.org

Physical Analysis Report

PRODUCT INFORMATION

Analyzed by	: Dr. Prabodh Satyal
Analyzed	: 11/1/2025 1:22:26 AM
Sample Type	: Essential Oil
Sample Name	: Ginger Zingiber officinale
Client Name	: American College of Healthcare Sciences (ACHS)
Client Lot#	: 29329R
APRC Lot#	: ACH251030A

Organoleptic Information

Appearance	Clear mobile liquid
Color	Yellow
Aroma	Warm, spicy

Physical Constants Information (at 20 °C)

Tests	Observed Value	ISO Range †
Optical Rotation	-34.76°	-50° to -27°
Refractive Index	1.49293	1.484 to 1.498
Specific Gravity	0.88568	0.872 to 0.890

†ISO 16928, First edition, 2014-04-15

Comments:

The physical constant of Ginger essential oil complies with the ISO range.

Prepared by : Joseph Hilton Date: 11/1/2025
Reviewed by: Ambika Poudel Date: 11/1/2025

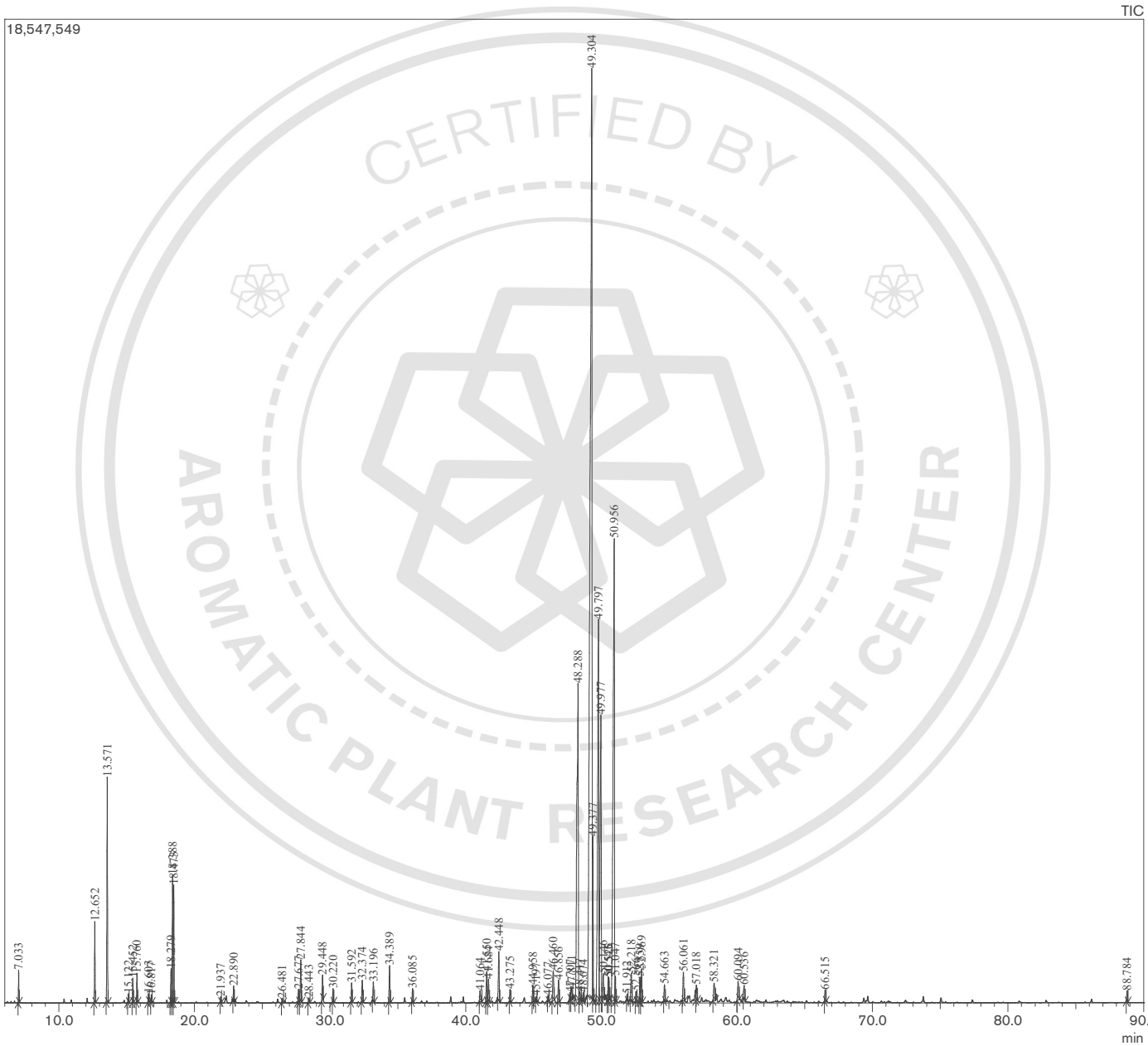
Aromatic Plant Research Center
230 N 1200 E STE 100
Lehi, UT 84043
www.aromaticplant.org

GCMS Analysis

Sample Information

Analyzed by	: Dr. Prabodh Satyal
Analyzed	: 11/1/2025 1:22:26 AM
Sample Type	: Essential Oil
Sample Name	: Ginger Zingiber officinale
Client Name	: American College of Healthcare Sciences (ACHS)
Client Lot#	: 29329R
APRC Lot#	: ACH251030A
Injection Volume	: 0.30

Chromatogram



Aromatic Plant Research Center
230 N 1200 E STE 100
Lehi, UT 84043
www.aromaticplant.org

Peak Report

Peak#	R.Time	Name	Area%
1	7.033	Hexanal	0.29
2	12.652	alpha-Pinene	0.97
3	13.571	Camphene	2.93
4	15.122	beta-Pinene	0.11
5	15.452	6-Methyl-5-hepten-2-one	0.31
6	15.760	Myrcene	0.37
7	16.603	n-Octanal	0.10
8	16.817	alpha-Phellandrene	0.09
9	18.279	Limonene	0.57
10	18.388	beta-Phellandrene	1.98
11	18.473	1,8-Cineole	1.53
12	21.937	Terpinolene	0.06
13	22.890	Linalool	0.21
14	26.481	Citronellal	0.07
15	27.677	Rosefuran epoxide	0.19
16	27.844	Borneol	0.68
17	28.443	Terpinen-4-ol	0.08
18	29.448	alpha-Terpineol	0.38
19	30.220	n-Decanal	0.20
20	31.592	Citronellol	0.29
21	32.374	Neral	0.34
22	33.196	Geraniol	0.29
23	34.389	Geranial	0.58
24	36.085	2-Undecanone	0.20
25	41.064	Cyclosativene	0.24
26	41.550	alpha-Copaene	0.53
27	41.684	Geranyl acetate	0.37
28	42.448	beta-Elemene	0.81
29	43.275	Sesquithujene	0.20
30	44.958	gamma-Elemene	0.28
31	45.197	trans-alpha-Bergamotene	0.07
32	46.077	Velarinadiene isomer	0.07
33	46.460	trans-beta-Farnesene	0.59
34	46.856	allo-Aromadendrene	0.39
35	47.707	Selina-4,11-diene	0.11
36	47.811	trans-Cadina-1(6),4-diene	0.22
37	48.288	ar-Curcumene	9.33
38	48.417	Aristolochene	0.21
39	48.674	beta-Selinene	0.13
40	49.304	alpha-Zingiberene	37.59
41	49.377	alpha-Muurolene	2.10
42	49.797	trans-trans-alpha-Farnesene	8.88
43	49.977	beta-Bisabolene	6.63
44	50.146	gamma-Cadinene	0.53
45	50.526	delta-Cadinene	0.33
46	50.545	7-epi-alpha-Selinene	0.34
47	50.956	beta-Sesquiphellandrene	12.87
48	51.047	trans-gamma-Bisabolene	0.32
49	51.912	Cadinene ether	0.09
50	52.218	alpha-Elemol	0.47
51	52.566	cis-Sesquisabinene hydrate	0.17
52	52.859	Germacrene B	0.42
53	52.969	trans-Nerolidol	0.56
54	54.663	trans-Sesquisabinene hydrate	0.27
55	56.061	Zingiberenol	0.52
56	57.018	7-epi-cis-Sesquisabinene hydrate	0.25
57	58.321	alpha-Eudesmol	0.39
58	60.094	7-epi-trans-Sesquisabinene hydrate	0.35
59	60.536	2-cis-6-cis-Farnesol	0.25
60	66.515	Epoxy zingiberene	0.19
61	88.784	6-Shogaol	0.17
			100.00

Aromatic Plant Research Center
230 N 1200 E STE 100
Lehi, UT 84043
www.aromatcplant.org

Instrument Analysis Report

Glyphosate Certificate of Analysis

Client:	ACHS	Date Received:	10/30/2025
Sample Name:	Ginger Zingiber Officinale	Date Tested:	11/03/2025
Sample Matrix:	Essential Oil		
Sample Lot:	29329R		

ID #	Analyte	Finding	Action Limit (ppm)	Pass/Fail
1	Glyphosate	ND	Pass/Fail	Pass

Analyzed by: A. Rokaya Reviewed by: N. Saichek

Notes: Current limit of detection for sample for pass fail determination is 0.1 ppm in sample

Matrix SCIENCES | PAL PACIFIC AGRICULTURAL LABORATORY

PACAGLAB.COM
503.626.7943
21830 S.W. Alexander Ln
Sherwood, OR 97140

American College Of Healthcare Sciences
5005 S. Macadam Ave
Portland, OR 97239

Client Sample ID: Ginger Zingiber officinale lot 29329R
PAL Sample ID: P252241-01

Report Number: P252241
Report Date: November 06, 2025
Client Project ID:

Sample Date: 10/28/2025
Received Date: 10/30/2025
Extraction Date: 10/31/2025

Certificate of Analysis

Results Summary

Analyte	Amount Detected	Limit of Quantitation
Mefenoxam	2.1 mg/kg	0.50
Chlorpyrifos	1.2 mg/kg	0.50
Other Pesticides	ND	See COA

Modified EPA 8270D (GC-MS/MS)

Analysis Date	Analyte	Amount Detected	LOQ (mg/kg)	Notes
10/31/2025	2,6-Dichlorobenzamide	ND	0.50	
10/31/2025	Acetochlor	ND	0.50	
10/31/2025	Aldrin	ND	0.50	
10/31/2025	Aspon	ND	0.50	
10/31/2025	Benfluralin	ND	0.50	
10/31/2025	Bromopropylate	ND	0.50	
10/31/2025	Captan	ND	10	
10/31/2025	Chlorfenvinphos	ND	0.50	
10/31/2025	Chloroneb	ND	0.50	
10/31/2025	Chlorpropham	ND	0.50	
10/31/2025	Chlorpyrifos-methyl	ND	0.50	
10/31/2025	Cyfluthrin	ND	2.5	
10/31/2025	Dacthal	ND	0.50	
10/31/2025	Deltamethrin	ND	2.5	
10/31/2025	Diazinon	ND	0.50	
10/31/2025	Dichlorofenthion	ND	0.50	
10/31/2025	Diclofop-methyl	ND	0.50	
10/31/2025	Dicofol	ND	0.50	
10/31/2025	Dimethenamid	ND	0.50	
10/31/2025	Diphenylamine	ND	0.50	
10/31/2025	Dithiopyr	ND	0.50	
10/31/2025	Endosulfan II	ND	1.0	
10/31/2025	Endrin	ND	0.50	
10/31/2025	Endrin ketone	ND	0.50	
10/31/2025	a-BHC	ND	0.50	
10/31/2025	Alachlor	ND	0.50	
10/31/2025	Ametryn	ND	0.50	
10/31/2025	b-BHC	ND	0.50	
10/31/2025	Bifenthrin	ND	0.50	
10/31/2025	Buprofezin	ND	0.50	
10/31/2025	Chlordane	ND	0.50	
10/31/2025	Chlorobenzilate	ND	0.50	
10/31/2025	Chlorothalonil	ND	0.50	
10/31/2025	Chlorpyrifos	1.2 mg/kg	0.50	
10/31/2025	cis-Nonachlor	ND	0.50	
10/31/2025	Cypermethrin	ND	2.5	
10/31/2025	d-BHC	ND	0.50	
10/31/2025	Demeton	ND	0.50	
10/31/2025	Dichlobenil	ND	0.50	
10/31/2025	Dichlorvos	ND	0.50	
10/31/2025	Dicloran	ND	2.5	
10/31/2025	Dieldrin	ND	0.50	
10/31/2025	Diphenamid	ND	0.50	
10/31/2025	Disulfoton	ND	0.50	
10/31/2025	Endosulfan I	ND	1.0	
10/31/2025	Endosulfan sulfate	ND	1.0	
10/31/2025	Endrin aldehyde	ND	0.50	
10/31/2025	EPN	ND	0.50	

Breonna Davidson

Breonna Davidson, Lab Tech

Matrix SCIENCES | PAL PACIFIC AGRICULTURAL LABORATORY

PACAGLAB.COM
503.626.7943
21830 S.W. Alexander Ln
Sherwood, OR 97140

American College Of Healthcare Sciences
5005 S. Macadam Ave
Portland, OR 97239

Report Number: P252241
Report Date: November 06, 2025
Client Project ID:

Client Sample ID: Ginger Zingiber officinale lot 29329R
PAL Sample ID: P252241-01

Sample Date: 10/28/2025
Received Date: 10/30/2025
Extraction Date: 10/31/2025

Certificate of Analysis
(Continued)

Analysis Date	Analyte	Amount Detected	LOQ (mg/kg)	Notes	Analysis Date	Analyte	Amount Detected	LOQ (mg/kg)	Notes
Modified EPA 8270D (GC-MS/MS) (Continued)									
10/31/2025	EPTC	ND	0.50		10/31/2025	Esfenvalerate	ND	0.50	
10/31/2025	Ethalfluralin	ND	0.50		10/31/2025	Ethofumesate	ND	0.50	
10/31/2025	Ethoprop	ND	0.50		10/31/2025	Ethoxyquin	ND	0.50	
10/31/2025	Etoxazole	ND	0.50		10/31/2025	Etridiazole	ND	0.50	
10/31/2025	Fenarimol	ND	0.50		10/31/2025	Fenitrothion	ND	0.50	
10/31/2025	Fenoxaprop-ethyl	ND	0.50		10/31/2025	Fenthion	ND	0.50	
10/31/2025	Fenvalerate	ND	0.50		10/31/2025	Fipronil	ND	0.50	
10/31/2025	Fluazifop-p-butyl	ND	0.50		10/31/2025	Fludioxonil	ND	0.50	
10/31/2025	Fluroxypyr-meptyl	ND	0.50		10/31/2025	Flutolanil	ND	0.50	
10/31/2025	g-BHC	ND	0.50		10/31/2025	Heptachlor	ND	0.50	
10/31/2025	Heptachlor epoxide	ND	0.50		10/31/2025	Hexachlorobenzene	ND	0.50	
10/31/2025	Kresoxim-methyl	ND	0.50		10/31/2025	lambda-Cyhalothrin	ND	1.0	
10/31/2025	Leptophos	ND	0.50		10/31/2025	Malathion	ND	0.50	
10/31/2025	Mefenoxam	2.1 mg/kg	0.50		10/31/2025	Methoxychlor	ND	0.50	
10/31/2025	Metolachlor	ND	0.50		10/31/2025	MGK-264	ND	0.50	
10/31/2025	Myclobutanil	ND	0.50		10/31/2025	Napropamide	ND	0.50	
10/31/2025	o-Phenylphenol	ND	0.50		10/31/2025	Ovex	ND	0.50	
10/31/2025	Oxadiazon	ND	0.50		10/31/2025	Oxyfluorfen	ND	0.50	
10/31/2025	p,p'-DDD	ND	0.50		10/31/2025	p,p'-DDE	ND	0.50	
10/31/2025	p,p'-DDT	ND	0.50		10/31/2025	Paclobutrazol	ND	0.50	
10/31/2025	Parathion	ND	0.50		10/31/2025	Parathion-methyl	ND	0.50	
10/31/2025	PCA	ND	0.50		10/31/2025	PCB	ND	0.50	
10/31/2025	PCNB	ND	0.50		10/31/2025	Pendimethalin	ND	0.50	
10/31/2025	Pentachlorothioanisole	ND	0.50		10/31/2025	Permethrin	ND	2.5	
10/31/2025	Phorate	ND	0.50		10/31/2025	Procymidone	ND	0.50	
10/31/2025	Prodiamine	ND	0.50		10/31/2025	Pronamide	ND	0.50	
10/31/2025	Propachlor	ND	0.50		10/31/2025	Pyriproxyfen	ND	0.50	
10/31/2025	Quinoxyfen	ND	0.50		10/31/2025	Ronnel	ND	0.50	
10/31/2025	Spirodiclofen	ND	0.50		10/31/2025	Sulfotep	ND	0.50	
10/31/2025	Tefluthrin	ND	0.50		10/31/2025	Terbufos	ND	0.50	
10/31/2025	Tetraconazole	ND	0.50		10/31/2025	Tetradifon	ND	0.50	
10/31/2025	Thionazin	ND	0.50		10/31/2025	Tokuthion	ND	0.50	
10/31/2025	trans-Nonachlor	ND	0.50		10/31/2025	Trichloronate	ND	0.50	
10/31/2025	Trifluralin	ND	0.50		10/31/2025	Vinclozalin	ND	0.50	
Modified EPA 8321B (HPLC MS-MS)									
					11/04/2025	3-Hydroxycarbofuran	ND	0.50	

Breonna Davidson

Breonna Davidson, Lab Tech

Matrix SCIENCES | PAL PACIFIC AGRICULTURAL LABORATORY

PACAGLAB.COM
503.626.7943
21830 S.W. Alexander Ln
Sherwood, OR 97140

American College Of Healthcare Sciences
5005 S. Macadam Ave
Portland, OR 97239

Report Number: P252241
Report Date: November 06, 2025
Client Project ID:

Client Sample ID: Ginger Zingiber officinale lot 29329R
PAL Sample ID: P252241-01

Sample Date: 10/28/2025
Received Date: 10/30/2025
Extraction Date: 10/31/2025

Certificate of Analysis
(Continued)

Modified EPA 8321B (HPLC MS-MS) (Continued)

Analysis Date	Analyte	Amount Detected	LOQ (mg/kg)	Notes	Analysis Date	Analyte	Amount Detected	LOQ (mg/kg)	Notes
11/04/2025	Abamectin	ND	0.50		11/04/2025	Acephate	ND	0.50	
11/04/2025	Acetamiprid	ND	0.50		11/04/2025	Acibenzolar-S-methyl	ND	1.0	
11/04/2025	Aldicarb	ND	0.50		11/04/2025	Aldicarb Sulfone	ND	0.50	
11/04/2025	Aldicarb Sulfoxide	ND	0.50		11/04/2025	Allethrin	ND	0.50	
11/04/2025	Ametoctradin	ND	0.50		11/04/2025	Atrazine	ND	0.50	
11/04/2025	Azinphos-ethyl	ND	0.50		11/04/2025	Azinphos-methyl	ND	1.0	
11/04/2025	Azoxystrobin	ND	0.50		11/04/2025	Bendiocarb	ND	0.50	
11/04/2025	Bensulide	ND	0.50		11/04/2025	Bifenazate	ND	0.50	
11/04/2025	Bitertanol	ND	0.50		11/04/2025	Boscalid	ND	0.50	
11/04/2025	Bromacil	ND	0.50		11/04/2025	Carbaryl	ND	0.50	
11/04/2025	Carbendazim	ND	0.50		11/04/2025	Carbofuran	ND	0.50	
11/04/2025	Carfentrazone-ethyl	ND	0.50		11/04/2025	Chlorantraniliprole	ND	0.50	
11/04/2025	Clethodim	ND	1.0		11/04/2025	Clofentezine	ND	0.50	
11/04/2025	Clothianidin	ND	0.50		11/04/2025	Cyanazine	ND	0.50	
11/04/2025	Cyantraniliprole	ND	0.50		11/04/2025	Cyazofamid	ND	0.50	
11/04/2025	Cycloate	ND	1.0		11/04/2025	Cyflufenamid	ND	0.50	
11/04/2025	Cyflumetofen	ND	0.50		11/04/2025	Cymoxanil	ND	0.50	
11/04/2025	Cyprodinil	ND	0.50		11/04/2025	Cyromazine	ND	0.50	
11/04/2025	DCPMU	ND	0.50		11/04/2025	Diazoxon	ND	0.50	
11/04/2025	Difenoconazole	ND	0.50		11/04/2025	Diflubenzuron	ND	0.50	
11/04/2025	Dimethoate	ND	0.50		11/04/2025	Dimethomorph	ND	0.50	
11/04/2025	Dinotefuran	ND	0.50		11/04/2025	Disulfoton sulfone	ND	0.50	
11/04/2025	Diuron	ND	0.50		11/04/2025	Dodine	ND	0.50	
11/04/2025	d-Phenothrin	ND	0.50		11/04/2025	Emamectin Benzoate	ND	0.50	
11/04/2025	Ethion	ND	0.50		11/04/2025	Famoxadone	ND	0.50	
11/04/2025	Famphur	ND	0.50		11/04/2025	Fenamidone	ND	0.50	
11/04/2025	Fenamiphos sulfone	ND	0.50		11/04/2025	Fenamiphos sulfoxide	ND	0.50	
11/04/2025	Fenazaquin	ND	0.50		11/04/2025	Fenbuconazole	ND	0.50	
11/04/2025	Fenbutatin oxide	ND	0.50		11/04/2025	Fenhexamid	ND	0.50	
11/04/2025	Fenobucarb	ND	0.50		11/04/2025	Fenpropathrin	ND	0.50	
11/04/2025	Fenpyroximate	ND	0.50		11/04/2025	Fenuron	ND	0.50	
11/04/2025	Flonicamid	ND	0.50		11/04/2025	Fluazinam	ND	0.50	
11/04/2025	Flubendiamide	ND	1.0		11/04/2025	Flumioxazin	ND	0.50	
11/04/2025	Fluometuron	ND	0.50		11/04/2025	Fluopicolide	ND	0.50	
11/04/2025	Fluopyram	ND	0.50		11/04/2025	Fluoxastrobin	ND	0.50	
11/04/2025	Flupyradifurone	ND	0.50		11/04/2025	Fluridone	ND	0.50	

Breonna Davidson

Breonna Davidson, Lab Tech

Matrix SCIENCES | PAL PACIFIC AGRICULTURAL LABORATORY

PACAGLAB.COM
503.626.7943
21830 S.W. Alexander Ln
Sherwood, OR 97140

American College Of Healthcare Sciences
5005 S. Macadam Ave
Portland, OR 97239

Report Number: P252241
Report Date: November 06, 2025
Client Project ID:

Client Sample ID: Ginger Zingiber officinale lot 29329R
PAL Sample ID: P252241-01

Sample Date: 10/28/2025
Received Date: 10/30/2025
Extraction Date: 10/31/2025

Certificate of Analysis
(Continued)

Modified EPA 8321B (HPLC MS-MS) (Continued)

Analysis Date	Analyte	Amount Detected	LOQ (mg/kg)	Notes
11/04/2025	Flutriafol	ND	0.50	
11/04/2025	Fluxapyroxad	ND	0.50	
11/04/2025	Formetanate HCl	ND	0.50	
11/04/2025	Hexazinone	ND	0.50	
11/04/2025	Imazalil	ND	0.50	
11/04/2025	Indaziflam	ND	0.50	
11/04/2025	Iprodione	ND	2.5	
11/04/2025	Linuron	ND	0.50	
11/04/2025	Mandipropamid	ND	0.50	
11/04/2025	Methamidophos	ND	1.0	
11/04/2025	Methiocarb	ND	0.50	
11/04/2025	Methoxyfenozide	ND	0.50	
11/04/2025	Metribuzin	ND	0.50	
11/04/2025	Norflurazon	ND	0.50	
11/04/2025	Omethoate	ND	0.50	
11/04/2025	Oxadixyl	ND	0.50	
11/04/2025	Oxathiapiprolin	ND	0.010	
11/04/2025	Penthiopyrad	ND	0.50	
11/04/2025	Phorate Sulfoxide	ND	0.50	
11/04/2025	Phosmet	ND	0.50	
11/04/2025	Piperonyl Butoxide	ND	0.50	
11/04/2025	Pirimiphos-methyl	ND	0.50	
11/04/2025	Prometryn	ND	0.50	
11/04/2025	Propazine	ND	0.50	
11/05/2025	Prothioconazole	ND	1.0	
11/04/2025	Pyraclostrobin	ND	0.50	
11/04/2025	Pyrethrin	ND	2.5	
11/04/2025	Pyrimethanil	ND	0.50	
11/04/2025	Saflufenacil	ND	0.50	
11/04/2025	Siduron	ND	0.50	
11/04/2025	Simetryn	ND	0.50	
11/04/2025	Spinosad	ND	0.50	
11/04/2025	Spirotetramat	ND	0.50	
11/04/2025	Sulfentrazone	ND	0.50	
11/04/2025	Tebuconazole	ND	0.50	
11/04/2025	Tebuthiuron	ND	0.50	
11/04/2025	Fluvalinate	ND	0.50	
11/04/2025	Fonofos	ND	1.0	
11/04/2025	Hexaconazole	ND	0.50	
11/04/2025	Hexythiazox	ND	0.50	
11/04/2025	Imidacloprid	ND	0.50	
11/04/2025	Indoxacarb	ND	0.50	
11/04/2025	Isoxaben	ND	0.50	
11/04/2025	Malaoxon	ND	0.50	
11/04/2025	Metconazole	ND	0.50	
11/04/2025	Methidathion	ND	0.50	
11/04/2025	Methomyl	ND	0.50	
11/04/2025	Metrafenone	ND	0.50	
11/04/2025	Mevinphos	ND	0.50	
11/04/2025	Novaluron	ND	0.50	
11/05/2025	Oryzalin	ND	0.50	
11/04/2025	Oxamyl	ND	0.50	
11/04/2025	Oxydemeton-Methyl	ND	0.50	
11/04/2025	Phorate Sulfone	ND	0.50	
11/04/2025	Phosalone	ND	0.50	
11/04/2025	Phosphamidon	ND	0.50	
11/04/2025	Pirimicarb	ND	0.50	
11/04/2025	Prometon	ND	0.50	
11/04/2025	Propargite	ND	0.50	
11/04/2025	Propiconazole	ND	1.0	
11/04/2025	Pymetrozine	ND	0.50	
11/04/2025	Pyraflufen-ethyl	ND	0.50	
11/04/2025	Pyridaben	ND	0.50	
11/04/2025	Rotenone	ND	0.50	
11/04/2025	Sethoxydim	ND	1.0	
11/04/2025	Simazine	ND	0.50	
11/04/2025	Spinetoram	ND	0.50	
11/04/2025	Spiromesifen	ND	1.0	
11/04/2025	Spiroxamine	ND	0.50	
11/04/2025	Sulfoxaflor	ND	0.50	
11/04/2025	Tebufenozide	ND	0.50	
11/04/2025	Terbacil	ND	0.50	

Breonna Davidson

Breonna Davidson, Lab Tech

Matrix SCIENCES | PAL PACIFIC AGRICULTURAL LABORATORY

PACAGLAB.COM
503.626.7943
21830 S.W. Alexander Ln
Sherwood, OR 97140

American College Of Healthcare Sciences
5005 S. Macadam Ave
Portland, OR 97239

Report Number: P252241
Report Date: November 06, 2025
Client Project ID:

Client Sample ID: Ginger Zingiber officinale lot 29329R
PAL Sample ID: P252241-01

Sample Date: 10/28/2025
Received Date: 10/30/2025
Extraction Date: 10/31/2025

Certificate of Analysis
(Continued)

Analysis Date	Analyte	Amount Detected	LOQ (mg/kg)	Notes	Analysis Date	Analyte	Amount Detected	LOQ (mg/kg)	Notes
Modified EPA 8321B (HPLC MS-MS) (Continued)									
11/04/2025	Terbuthylazine	ND	0.50		11/04/2025	Terbutryn	ND	0.50	
11/04/2025	Thiabendazole	ND	0.50		11/04/2025	Thiacloprid	ND	0.50	
11/04/2025	Thiamethoxam	ND	0.50		11/04/2025	Thiobencarb	ND	0.50	
11/04/2025	Thiodicarb	ND	0.50		11/04/2025	Thiophanate methyl	ND	0.50	
11/04/2025	Tolfenpyrad	ND	0.50		11/04/2025	Triadimefon	ND	0.50	
11/04/2025	Triadimenol	ND	1.0		11/04/2025	Trifloxystrobin	ND	0.50	
11/04/2025	Triflumizole	ND	0.50						

Notes and Definitions

Notes	Definition
LOQ	Limit of Quantitation
ND	Not Detected
*	Not included under current scope of accreditation

The results contained in this report relate only to the items tested.
The results reflect the condition of the samples as received by PAL.
Samples will be stored for a minimum of 60 days after the final report is issued, as described in our Quality Manual.
Reports should not be reproduced, except in full, without written approval from PAL.
PAL is accredited to ISO/IEC 17025:2017 Standard, by ANAB, Accreditation #AT-2875, Testing.

Breonna Davidson

Breonna Davidson, Lab Tech