



Certificate of Analysis

PASSED

Asterra Labs

800 Cooke Rd.
Nashville, NC, 27856, US
Telephone: (252) 702-1537
Email: ron.rogers@asterralabs.com

Sample : KN40213005-003
Harvest/Lot ID: 24A022

Batch# : 24A022
Sampled : 02/08/24
Ordered : 02/08/24

Sample Size Received : 15 gram
Completed : 02/21/24 Expires: 02/21/25

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Pesticides

PASSED

Pesticide	LOD	Units	Action Level	Pass/Fail	Result	Pesticide	LOD	Units	Action Level	Pass/Fail	Result
ABAMECTIN B1A	0.012	ppm	0.1	PASS	ND	PIPERONYL BUTOXIDE	0.006	ppm	3	PASS	ND
ACEPHATE	0.008	ppm	0.1	PASS	ND	PRALLETHRIN	0.008	ppm	0.1	PASS	ND
ACEQUINOCYL	0.038	ppm	0.1	PASS	ND	PROPICONAZOLE	0.007	ppm	0.1	PASS	ND
ACETAMIPRID	0.009	ppm	0.1	PASS	ND	PROPOXUR	0.008	ppm	0.1	PASS	ND
ALDICARB	0.009	ppm	0.1	PASS	ND	PYRETHRINS	0.002	ppm	0.5	PASS	ND
AZOXYSTROBIN	0.013	ppm	0.1	PASS	<0.05	PYRIDABEN	0.007	ppm	3	PASS	ND
BIFENAZATE	0.028	ppm	0.1	PASS	ND	SPINETORAM	0.004	ppm	0.2	PASS	ND
BIFENTHRIN	0.047	ppm	0.1	PASS	ND	SPIROMESIFEN	0.009	ppm	0.1	PASS	ND
BOSCALID	0.007	ppm	0.1	PASS	ND	SPIROTETRAMAT	0.009	ppm	0.1	PASS	ND
CARBARYL	0.015	ppm	0.5	PASS	ND	SPIROXAMINE	0.006	ppm	0.1	PASS	ND
CARBOFURAN	0.008	ppm	0.1	PASS	ND	TEBUCONAZOLE	0.009	ppm	0.1	PASS	ND
CHLORANTRANILIPROLE	0.012	ppm	3	PASS	ND	THIACLOPRID	0.008	ppm	0.1	PASS	ND
CHLORMEQUAT CHLORIDE	0.008	ppm	1	PASS	ND	THIAMETHOXAM	0.009	ppm	0.5	PASS	ND
CHLORPYRIFOS	0.014	ppm	0.1	PASS	ND	TOTAL SPINOSAD	0.009	ppm	0.1	PASS	ND
CLOFENTZINE	0.006	ppm	0.2	PASS	ND	TRIFLOXYSTROBIN	0.009	ppm	0.1	PASS	ND
COUMAPHOS	0.009	ppm	0.1	PASS	ND						
CYPERMETHRIN	0.01	ppm	1	PASS	ND						
DAMINOZIDE	0.006	ppm	0.1	PASS	ND	Analized by:	Weight:	Extraction date:	Extracted by:		
DIAZANON	0.006	ppm	0.1	PASS	ND	2803, 3050	1.0051g	02/20/24 13:44:21	2803		
DICHLORVOS	0.014	ppm	0.1	PASS	ND	Analysis Method :SOP.T.30.101.TN, SOP.T.40.101.TN					
DIMETHOATE	0.009	ppm	0.1	PASS	ND	Analytical Batch :KN004560PES			Reviewed On :02/21/24 13:01:20		
DIMETHOMORPH	0.009	ppm	0.2	PASS	ND	Instrument Used :E-SHI-125			Batch Date :02/20/24 13:40:40		
ETHOPROPHOS	0.007	ppm	0.1	PASS	ND	Running on :N/A					
ETOFENPROX	0.009	ppm	0.1	PASS	ND	Dilution : N/A					
ETOXAZOLE	0.007	ppm	0.1	PASS	ND	Reagent : 013024.R03; 021324.R01; 013024.R02; 013024.R01; 011224.R14; 010224.R01; 102323.R25; 122023.01; 012624.05					
FENHEXAMID	0.005	ppm	0.1	PASS	ND	Consumables : 302110210; 264830; 22/04/01; 3254282; B9291.100; 01422036; 251760; 260148; 230713634D; 1008702218; 947.100; 1350331; H110738-34					
FENOXYCARB	0.007	ppm	0.1	PASS	ND	Pipette : E-EPP-080; E-EPP-081; E-VWR-116; E-VWR-117; E-VWR-118; E-VWR-119					
FENPROXIMATE	0.006	ppm	0.1	PASS	ND	Testing for agricultural agents is performed utilizing Liquid Chromatography with Triple-Quadrupole Mass Spectrometry.					
FIPRONIL	0.008	ppm	0.1	PASS	ND	*Based on FL action limits and Title 40 Chapter I Subchapter E Part 180 Subpart C § 180.413					
FLONICAMID	0.014	ppm	0.1	PASS	ND						
FLUDIOXONIL	0.011	ppm	0.1	PASS	0.054						
HEXYTHIAZOX	0.009	ppm	0.1	PASS	ND						
IMAZALIL	0.01	ppm	1.2	PASS	0.4548						
IMIDACLOPRID	0.005	ppm	0.4	PASS	ND						
KRESOXIM-METHYL	0.01	ppm	0.1	PASS	ND						
MALATHION	0.009	ppm	0.2	PASS	ND						
METALAXYL	0.008	ppm	0.1	PASS	ND						
METHIOCARB	0.008	ppm	0.1	PASS	ND						
METHOMYL	0.009	ppm	0.1	PASS	ND						
MEVINPHOS	0.001	ppm	0.1	PASS	ND						
MYCLOBUTANIL	0.006	ppm	0.007	PASS	ND						
NALED	0.023	ppm	0.25	PASS	ND						
OXAMYL	0.009	ppm	0.5	PASS	ND						
PACLOBUTRAZOL	0.007	ppm	0.1	PASS	ND						
PERMETHRINS	0.008	ppm	0.1	PASS	ND						
PHOSMET	0.009	ppm	0.1	PASS	ND						



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Residual Solvents

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Solvents	LOD	Units	Action Level	Pass/Fail	Result
PROPANE	100	ppm	5000	PASS	ND
BUTANES (N-BUTANE)	100	ppm	5000	PASS	ND
METHANOL	20	ppm	250	PASS	ND
ETHYLENE OXIDE	0.2	ppm	5	PASS	ND
PENTANES (N-PENTANE)	32	ppm	750	PASS	ND
ETHANOL	100	ppm	5000	PASS	ND
ETHYL ETHER	10	ppm	500	PASS	ND
1,1-DICHLOROETHENE	0.6	ppm	8	PASS	ND
ACETONE	40	ppm	750	PASS	ND
2-PROPANOL	25	ppm	500	PASS	ND
ACETONITRILE	20	ppm	60	PASS	ND
DICHLOROMETHANE	2	ppm	125	PASS	ND
N-HEXANE	10	ppm	250	PASS	ND
ETHYL ACETATE	11	ppm	400	PASS	ND
CHLOROFORM	0.04	ppm	2	PASS	ND
BENZENE	0.03	ppm	1	PASS	ND
1,2-DICHLOROETHANE	0.05	ppm	2	PASS	ND
HEPTANE	53	ppm	5000	PASS	ND
TRICHLOROETHYLENE	0.5	ppm	25	PASS	ND
TOLUENE	5	ppm	150	PASS	ND
TOTAL XYLENES - M, P & O - DIMETHYLBENZENE	15	ppm	150	PASS	ND

 Analyzed by:
 3050

 Weight:
 0.0202g

 Extraction date:
 02/16/24 14:00:30

 Extracted by:
 3050

 Analysis Method : SOP.T.40.041.TN
 Analytical Batch : KN00453450L
 Instrument Used : E-SHI-106
 Running on : N/A

 Reviewed On : 02/16/24 14:09:37
 Batch Date : 02/12/24 14:01:56

 Dilution : N/A
 Reagent : N/A
 Consumables : G201.100; G201.167
 Pipette : N/A

Residual solvents analysis is performed using Gas Chromatography / Mass Spectrometry. *Based on FL action limits.



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	Microbial	PASSED		Mycotoxins	PASSED
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Analyte	LOD	Units	Result	Pass / Fail	Action Level	Analyte	LOD	Units	Result	Pass / Fail	Action Level
ESCHERICHIA COLI SHIGELLA SPP			Not Present	PASS		AFLATOXIN G2	0.0016	ppm	ND	PASS	0.02
SALMONELLA SPECIFIC GENE			Not Present	PASS		AFLATOXIN G1	0.0012	ppm	ND	PASS	0.02
ASPERGILLUS FLAVUS			Not Present	PASS		AFLATOXIN B2	0.0012	ppm	ND	PASS	0.02
ASPERGILLUS FUMIGATUS			Not Present	PASS		AFLATOXIN B1	0.0012	ppm	ND	PASS	0.02
ASPERGILLUS NIGER			Not Present	PASS		OCHRATOXIN A+	0.002	ppm	ND	PASS	0.02
ASPERGILLUS TERREUS			Not Present	PASS		TOTAL MYCOTOXINS	0.002	ppm	ND	PASS	0.02
TOTAL YEAST AND MOLD	10	CFU	ND	PASS	100000	Analysis Method : SOP.T.30.101.TN, SOP.T.40.101.TN					
Analysis Method : SOP.T.40.056C, SOP.T.40.041 LOD is 1 CFU						Analytical Batch : KN004561MYC					
Analytical Batch : KN004543MJC						Instrument Used : E-SHI-125					
Instrument Used : E-HEW-069						Running on : N/A					
Running on : N/A						Dilution : N/A					
Dilution : N/A						Reagent : 013024.R03; 021324.R01; 013024.R02; 013024.R01; 011224.R14; 010224.R01; 102323.R25; 122023.01; 012624.05					
Reagent : 010924.02; 111523.04; 042723.04						Consumables : 302110210; 264830; 22/04/01; 3254282; B9291.100; 01422036; 251760; 260148; 230713634D; 1008702218; 947.100; 1350331; H110738-34					
Consumables : 264830; 6850215; GD220016; 1350331; 22/04/01; 20221223; 10RWL0415W15; 264041; 251760; 242429; 230612634D; P7528255; 41218-146C4-146C; 93825; n/a; 247040						Pipette : E-EPP-080; E-EPP-081; E-EPP-082; E-VWR-116; E-VWR-117; E-VWR-118; E-VWR-119					
Pipette : E-THE-045; E-THE-046; E-THE-047; E-THE-048; E-THE-049; E-THE-050; E-THE-051; E-THE-052; E-THE-053; E-THE-054						Aflatoxins B1, B2, G1, G2, and Ochratoxins Mycotoxins testing utilizing Liquid Chromatography with Triple-Quadrupole Mass Spectrometry. *Based on FL action limits.					

Microbiological testing for Fungal and Bacterial Identification via Polymerase Chain Reaction (PCR) method consisting of sample DNA amplified via tandem Polymerase Chain Reaction (PCR) as a crude lysate which avoids purification. With an LOD of 1cfu, if a pathogenic E Coli, Salmonella, A fumigatus, A flavus, A niger, or A terreus is detected in 1g of a sample, the sample fails the microbiological-purity testing.

Analysis Method : SOP.T.40.209.TN	Weight: 1.0535g	Extraction date: 02/20/24 12:09:39	Extracted by: 2837
Analytical Batch : KN004558TYM		Reviewed On : 02/20/24 12:13:30	Batch Date : 02/20/24 11:16:08
Instrument Used : N/A			
Running on : N/A			
Dilution : N/A			
Reagent : N/A			
Consumables : N/A			
Pipette : N/A			

Total yeast and mold testing is performed utilizing MPN and traditional culture based techniques. *Based on FL action limits.

	Heavy Metals	PASSED
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Metal	LOD	Units	Result	Pass / Fail	Action Level
ARSENIC-AS	0.02	ppm	ND	PASS	0.2
CADMIUM-CD	0.02	ppm	ND	PASS	0.2
MERCURY-HG	0.02	ppm	ND	PASS	0.2
LEAD-PB	0.02	ppm	<0.04	PASS	0.5
Analysis Method : SOP.T.30.082, SOP.T.40.082.TN					
Analytical Batch : KN004538HEA					
Instrument Used : E-AGI-084					
Running on : N/A					
Dilution : N/A					
Reagent : N/A					
Consumables : N/A					
Pipette : N/A					

Heavy Metals analysis is performed using ICP-MS (Inductively Coupled Plasma - Mass Spectrometer) which can screen down to single digit ppb concentrations. LOQ is 0.04 ppm for all metals. *Based on FL action limits.



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Filth/Foreign Material

PASSED


Moisture

PASSED

Analyte	LOD	Units	Result	P/F	Action Level	Analyte	LOD	Units	Result	P/F	Action Level
Filth and Foreign Material	1	%	ND	PASS	5	Moisture Content	1	%	11.03	TESTED	
Analyzed by: 2837 Weight: 0.514g Extraction date: 02/15/24 11:43:22 Extracted by: 2837 Analysis Method : SOP.T.40.090 Analytical Batch : KN004544FIL Instrument Used : E-AMS-138 Running on : N/A Dilution : N/A Reagent : N/A Consumables : N/A Pipette : N/A			Reviewed On : 02/15/24 11:44:31 Batch Date : 02/14/24 16:27:14			Analyzed by: 2990, 2837 Weight: 0.534g Extraction date: 02/13/24 15:26:04 Extracted by: 2990, 2837 Analysis Method : SOP.T.40.021 Analytical Batch : KN004536MOI Instrument Used : E-SHI-039 Running on : N/A Dilution : N/A Reagent : 121823.01; 100422.01 Consumables : 1008702218; 6850215 Pipette : E-VWR-120			Reviewed On : 02/14/24 09:53:17 Batch Date : 02/13/24 11:50:25		

This includes but is not limited to hair, insects, feces, packaging contaminants, and manufacturing waste and by-products. A SW-2T13 Stereo Microscope is used for inspection.

Moisture Content analysis utilizing loss-on-drying technology in accordance with F.S. Rule 64ER20.39.