FLORA RESEARCH LABORATORIES, LLC.

ANALYTICAL REPORT

Date: September 25, 2021

FRL Job#: J19-0617-H

Client: The Grow Network, Inc

Client Sample ID: Equisetum hyemale powder

Client Lot Number: 20190519DS

FRL Sample ID: 190617016

Analysis: Qualitative Confirmation of Identity of Botanical Raw Material & Screen for Adulteration with Maltodextrin, Microcrystalline Cellulose and Sand Bulking Agents by High Performance Thin Layer Chromatography (HPTLC), Qualitative Botanical Microscopy (QBM), Darkfield & Polarized Light Microscopy

Method: **For HPTLC:** HPTLC Association monograph for Horsetail.
For Microscopy: PPRC 2010 Identification of Common Scouring Rush Herb

Results:

Test/Examination	Result
Identity by HPTLC	FAIL
Identity by Microscopy	PASS
Absence of Maltodextrin Bulking Agent	PASS
Absence of Microcrystalline Cellulose Bulking Agent	PASS
Absence of Sand Bulking Agent	PASS

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Page 2: Chromatograms

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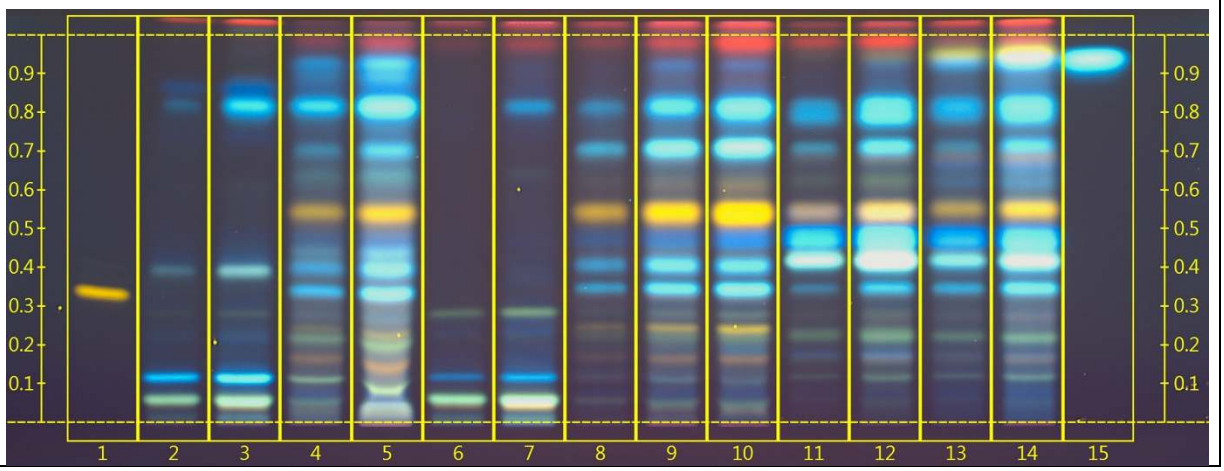
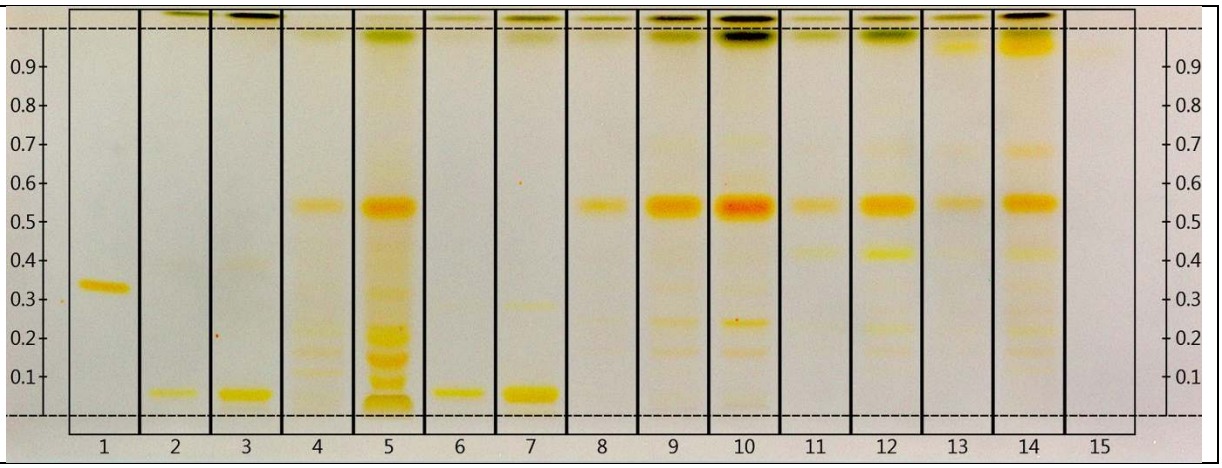
Chromatograms:

A



B



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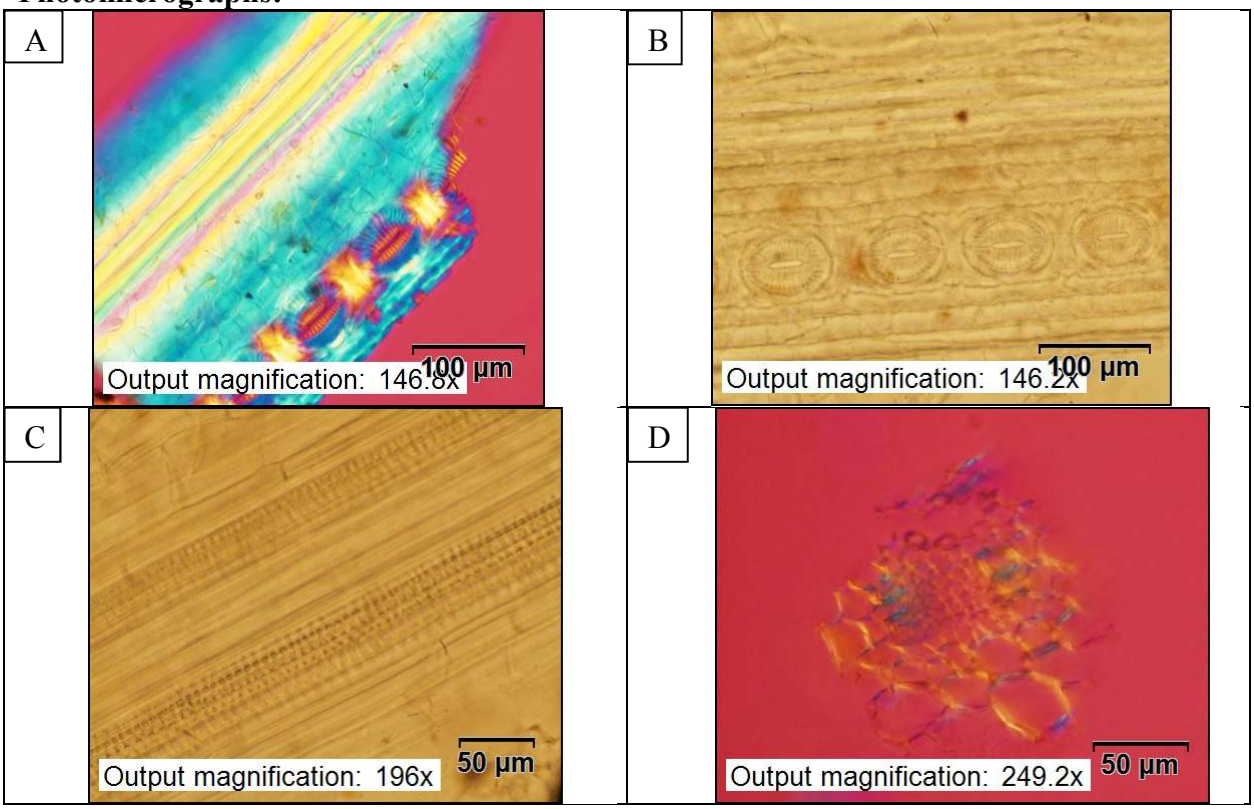
Photomicrographs:



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Chromatographic Legend:

Lane Number	FRL ID#
1	Standard Material 23-53-011 Rutin (2uL)
2	Sample Material 190617016 *Equisetum hyemale* herb powder (1uL)
3	Sample Material 190617016 *Equisetum hyemale* herb powder (3uL)
4	Reference Material 19-156-043 *Equisetum arvense* herb powder (2uL)
5	Reference Material 19-156-043 *Equisetum arvense* herb powder (6uL)
6	Reference Material 28-323-107 *Equisetum hyemale* herb powder (2uL)
7	Reference Material 28-323-107 *Equisetum hyemale* herb powder (6uL)
8	Reference Material 130521005 *Equisetum arvense* herb powder (2uL)
9	Reference Material 130521005 *Equisetum arvense* herb powder (6uL)
10	Reference Material 161018002 *Equisetum spp.* herb powder (6uL)
11	Reference Material 19-156-097 *Equisetum spp.* herb powder (1uL)
12	Reference Material 19-156-097 *Equisetum spp.* herb powder (3uL)
13	Reference Material 19-157-026 *Equisetum spp.* herb powder (2uL)
14	Reference Material 19-157-026 *Equisetum spp.* herb powder (6uL)
15	Standard Material 22-98-011 (2uL)

Chromatogram A Derivatized, UV 366 nm
Chromatogram B Derivatized, White Light

Photomicrograph Legend:

Photomicrograph	Description
A	Sample Material ID in Polarized Light w/ 530nm filter showing Stem Epidermis with Sunken Stomata; Mounted in 50% Chloral Hydrate
B	Sample Material ID in Brightfield showing Stem Epidermis with Sunken Stomata; Mounted in 50% Chloral Hydrate
C	Sample Material ID in Brightfield showing Vascular bundles; Mounted in 50% Chloral Hydrate
D	Sample Material ID in Polarized Light w/ 530nm filter showing Parenchymatous Cells; Mounted in 50% Chloral Hydrate

Conclusion: HPTLC analysis showed that the sample does not conform to profile of reference material for Rough Horsetail (*Equisetum hyemale*) herb. The strong phytochemical band at Rf ~0.4 in Chromatogram A is not characteristic of *Equisetum hyemale* herb. Microscopic observations showed that the sample conforms to the histology of *Equisetum hyemale* herb. Adulteration with bulking agents named above not detected.

Assayed/Reported By:

Chanze Jennings
Scientist I

Date: 09/25/2021

QC Approval By:

James Neal-Kababick
Laboratory Director

Date: 09/25/2021

NOTE: Chromatographic variance due to age, storage conditions, processing, regional and growing conditions, crop variance, extraction process (for extracts), etc. impact phytochemical profiles and are expected in some cases. Examination by experienced analysts can confirm only that the profile is or is not consistent with that expected for the botanical within the limit of chromatographic variance and based on the written information provided by the client (if any) which may indicate specific variables to consider in data interpretation. This report product is provided for the benefit of the client only, relates solely to the physical sample(s) under test in our laboratory and therefore cannot be applied to any other material or sample without our expressed, written permission. This document may only be reproduced in whole and any modification or deviation without the expressed, written permission of Flora Research Laboratories, LLC is prohibited.

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