ALPHA RESOURCES LLC

Value Beyond Measure

Certificate of Analysis

AR-2018

ALFALFA CRM

LOT # 421H

DRIED BASIS VALUES

Feed Analysis		n=	k=	AOAC
% Ash	10.95 ± 1.4	10	2.3	942.05
% Crude fat	2.48 ± 0.27	8	2.4	920.39
% Crude Fiber	21.3 ± 3.4	10	2.3	978.10
% ADF Fiber	27.8 ± 1.9	8	2.4	973.18
% Crude Protein	19.3 ± 2.4	12	2.2	990.03
% Starch	1.22 ± 0.5	8	2.4	2014.10
% Sugar	8.6 ± 0.8	4	3.2	985.29

Ultimate Analysis		n=	k=	AOAC
% Carbon	43.6 ± 0.3	11	2.2	972.43
% Hydrogen	5.97 ± 0.08	10	2.3	CHNOS
% Nitrogen	3.11 ± 0.34	16	2.1	990.03
% Sulfur	0.20 ± 0.04	19	2.1	985.01

Mineral Analysis		n=	k=	AOAC
mg/kg Copper	(22)	12	--	2011.14
mg/kg Aluminum	(190)	10	--	975.03b
µg/kg Mercury	(104)	2	--	EPA7470A
mg/kg Iron	(214)	9	--	2011.14
% Calcium	2.17 ± 0.46	12	2.2	2011.14
% Magnesium	0.36 ± 0.07	12	2.2	2011.14
% Potassium	2.55 ± 0.4	12	2.2	2011.14

Mineral Analysis		n=	k=	AOAC
mg/kg Sodium	(233)	10	--	2011.14
mg/kg Boron	62 ± 9	12	2.2	975.03b
% Phosphorus	0.26 ± 0.04	12	2.2	2011.14
mg/kg Zinc	26 ± 6	12	2.2	2011.14
mg/kg Chlorine	0.2 ± 0.03	10	2.3	975.03b
mg/kg Manganese	44 ± 11	12	2.2	2011.14
mg/kg Arsenic	(0.6)	2	--	EPA7061A

Items shown in () are given for informational or reference purposes. Dried per AOAC methods.

The intended use of this reference standard is for the verification of food or feed analysis by various test methods. When necessary, professional judgment is applied toward consideration of data and statistical information. The statistical analysis and the overall direction and coordination of the analytical measurements leading to certification were performed by K.E. Dyer, Chief Chemist, at Alpha Resources. The uncertainty values represent the k=2, 95% confidence limits using ISO Guide 35 and ISO Guide to Uncertainty Measurement. Refer to your test methods and or manufacturer manual for expanded uncertainties, repeatability/reproducibility factors, and typical or minimum sample size needed.

Samples for round robin testing were selected in accordance with ARI-LAB-625. The values only relate to the material certified. Material processing includes a freezing, drying, pulverizing, and mixing to ensure homogeneity and eradicate any bio-organisms. This bottle contains 30g of fine Alfalfa powder to be used per the test method you follow. This reference is valid for two years after opening and should be reviewed 20 years after certification date. Keep sealed tightly and store under normal laboratory conditions.

This is a certified reference material and shows metrological traceability in the form of SI units. For good laboratory practice, we recommend that all reference materials be verified as fit for purpose prior to use. Remedies for any claimed defect in this product will be limited to product replacement or refund of the purchase price. In no event shall Alpha Resources be liable for incidental or consequential damages.

This CRM was produced in accordance with ISO17034 (RMP) accreditation issued by ANSI-ASQ/ANAB. Refer to certificate and scope of accreditation AR1920.

THIS CRM IS VALID FOR TWO YEARS FROM THE DATE OF OPENING

CERTIFIED March 4, 2022

Kent Dyer

Chief Chemist

3090 Johnson Rd. • Stevensville, MI 49127-0199 • Phone (269) 465-5559 • Fax (269) 465-3629 • alpharesources.com