

# UC Davis Analytical Laboratory (AN Lab) Test and Methods

<https://anlab.ucdavis.edu/>

Test Name	Analyte(s)	Method
<b>Crude Protein in Feed Materials - Combustion Method</b>	Crude protein is calculated from the nitrogen content of the feed material. The protein factor applied to the nitrogen result is 6.25	AOAC Official Method 990.03, 18th edition Revision 1, 2006. Chapter 4, pp. 30-31, AOAC International, Gaithersburg, MD.
<b>Crude Fat</b>	Fats, oils, pigments, and other fat-soluble substances	AOAC Official Method 2003.05, 18th edition (2006), Chapter 4, pp. 40-42, AOAC International, Arlington, VA.
<b>Crude Fat – Acid Hydrolysis Method</b>	Crude fat in cereals, cereal-based products, and animal feed stuffs using acid hydrolysis	ISO 11085:2015 Cereals, cereals-based products and animal feeding stuffs – Determination of crude fat and total fat content by the Randall extraction method
<b>Crude Fiber</b>	Crude fiber (CF) in animal feed and pet food	AOAC Official Method 978.10, 18th edition (2005), Chapter 4, pp. 46-47, AOAC International, Gaithersburg, MD.
<b>Ash Content in Botanical Materials - Gravimetric Method</b>	Ash in feed materials based on the gravimetric loss	AOAC Official Method 942.05, 18th edition (2005), Chapter 4, p. 8, AOAC International, Gaithersburg, MD.
<b>Dry Matter Determination for Botanical Materials (plant and feed)</b>	The method quantitatively determines the dry matter content based on the gravimetric loss of free water associated with heating to 105°C for a period of three hours	NFTA, Moisture Task Force Report, 2.2.2.5 Laboratory Dry Matter by Oven Drying for 3 hours at 105°C, 2001. pp. 1-3. NFTA Forage Analyses Procedures, Method 2.2.3 Determination of Sample Total Dry Matter using the Two-step Procedure, July 1993, pp. 43-44.
<b>Total Moisture</b>	Total Moisture (TM) calculated by using the Partial Moisture and Dry Matter data	Dry Matter Determination for Botanical Materials and Partial Dry Matter test

UC Davis California Animal Health and Food Safety Laboratory (CAHFS Lab) Test and Methods

<https://cahfs.vetmed.ucdavis.edu/>

Test Name	Analyte(s)	Method
<b>Aflatoxin Screen - 48 hr TAT</b>	Aflatoxin B1, B2, G1, G2	FDA Compendial Method C-003
<b>Mycotoxin Screen Quantitative</b>	Aflatoxin B1, B2, G1, G2; deoxynivalenol; Fumonisin B1, B2, B3; HT-2 toxin, ochratoxin A, zearalenone	FDA Compendial Method C-003
<b>Monensin - Medicated Levels</b>	Monensin	AOAC Official Method 997.04
<b>Lasalocid - Medicated Levels</b>	Lasalocid	AOAC Official Method 2008.01
<b>Ionophore Screen-Residue Levels</b>	Salinomycin, Narasin, Monensin, and Lasalocid	Extraction: AOAC Official Method 997.04; Detection by LC-MS/MS
<b>Vitamin A Feed</b>	Total retinol (retinol and retinyl acetate) is measured and reported as parts per million (ppm) retinyl acetate and as IU/lb based on using the conversion factor for retinyl acetate.	Journal of AOAC International, Vol 105. No. 1, 2022 with FLD detector
<b>Vitamin D Feed</b>	Vitamin D3	AOAC Official Method 2016.05
<b>Vitamin E Feed</b>	Total alpha-tocopherol (alpha-tocopherol and alpha-tocopherol acetate) is measured and reported as parts per million (ppm) alpha-tocopherol acetate and as IU/lb based on using the conversion factor for alpha-tocopherol acetate.	In-house using HPLC-FLD detection
<b>pH</b>	pH	AOAC Method 973.04
<b>Minerals - (Ca, Na, P, K, Mg, S)</b>	Calcium (Ca), Sodium (Na), Phosphorus (P), Potassium (K), Magnesium (Mg), Sulfur (S)	US EPA Method 200.11
<b>Metals - (Co, Mn, Hg, Fe, Cu, Zn, Mo, Cr)</b>	Cobalt (Co), Manganese (Mn), Mercury (Hg), Iron (Fe), Copper (Cu), Zinc (Zn), Molybdenum (Mo), Chromium (Cr)	US EPA Method 200.11
<b>Metals - (As, Cd, Hg, Pb, Se)</b>	Arsenic (As), Cadmium (Cd), Mercury (Hg), Lead (Pb), Selenium (Se)	In-house method by Inductively Coupled Plasma - Mass Spectroscopy
<b>Nitrate Confirmation N02/N03</b>	Nitrate and Nitrite	In-house using Ion Chromatography
<b>Chloride</b>	Chloride	In-house using Ion Chromatography