



Agriculture and Natural Resources
Analytical Laboratory

Fee Schedule

**Applies to
University of California Clients**

EFFECTIVE JULY 1, 2009 (Revised 10/5/09)

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The **ANR ANALYTICAL LABORATORY** performs analyses on selected chemical constituents of soil, plant, feed, water and wastewater in support of statewide research and extension activities. ANR Analytical Laboratory clients are County Advisors, Extension Specialists, and University of California faculty. The Lab also accepts samples from other educational institutions and government agencies on a limited basis.

General Policies:

1. This fee schedule lists the analytical tests typically and most often requested. It is not comprehensive, therefore, if you have analytical needs not listed in this pamphlet, please contact the Lab. Fees listed in this schedule are subject to change. The most current fee schedule is posted on the Lab's web site (<http://danranlab.ucanr.org> in the section titled Fee Schedule).

A \$25.00 per work request processing fee is assessed.

A \$25.00 per analysis set-up fee is assessed. (The set-up fee for multi-result analyses and discounted groups is indicated in parentheses following the group listing.)

The costs indicated are per sample (and do not include the analysis set up fees).

There is a \$100 minimum per work request.

This fee structure includes pre-defined discounted group tests. Clients are encouraged to select group tests when appropriate as a cost-savings measure.

Following log-in, an e-mail notification is sent to the client(s). The estimate of charges included within this e-mail is based on routine testing. Should non-routine testing be required you will be contacted to discuss any additional costs.

Invoicing is conducted on a monthly basis and includes any and all work for which analyses were completed and results reported.

2. In fairness to all submitters, samples are processed in the order received by the Lab. If your analytical results require an expedited time frame, please contact the Lab prior to sample submission to ensure that your request can be accommodated. Additional charges may be assessed as per the Rush Policy. The Rush Policy is available on the Lab's web site (<http://danranlab.ucanr.org> in the section titled Using the Lab) or by contacting the office.
3. Quality Control / Quality Assurance measures include reagent blanks, duplicates, standard reference materials, and participation in various sample exchange and certification programs. The Lab's Quality Assurance Manual is available on the Lab's web site (<http://danranlab.ucanr.org> in the section titled QA / QC).
4. Samples are retained for 30 days following results reporting. Paper copies of the raw data and reports are stored for one year.

Notes:

"Code" indicates the analysis as it appears on the Work Request Form. Submitters circle requested analyses or write in a request if no "code" appears on the Work Request Form.

"N/C" indicates a no-charge calculation derived from and requiring other analyses as noted.

Contact Information:

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GENERAL GUIDELINES FOR SAMPLE AMOUNT AND PREPARATION

The following information is provided as a general guideline for sample amounts and preparation. If you have specific questions concerning your sample material (limited amount, type, preparation, etc.), please contact the lab to discuss the situation.

SOIL ANALYSES

<u>Sample Amount:</u>	Submit 300-500 g of dried and ground sample. Five (5) mL per element is required for samples submitted in extract form. Nitrogen and Carbon analysis requires one (1) gram of finely powdered soil.
<u>Soil Preparation:</u>	Air or oven-dry soil at 35-55°C. (The Lab oven dries at 40°C). Grind the material to pass through a 2 mm sieve. Nitrogen, Carbon, TKN, and “total” metals analysis requires sample material be fully powdered.
<u>Containers:</u>	Submit samples in pint-size plastic containers or in bags (plastic or paper).
NOTE:	For N-P-K on California soils, typical analyses are NO ₃ -N, Olsen-P and X-K.
NOTE:	Imported soils will be assessed an additional special handling charge of \$3.45 per sample.
NOTE:	The Lab provides grinding service for \$2.15 per sample.

PLANT ANALYSES

<u>Sample Amount:</u>	Submit 20 g of dried and ground sample. For extracts/solutions, five (5) mL per element is required.
<u>Plant Preparation:</u>	Oven-dry samples at 55-60°C. Grind material to pass through a 40 mesh screen on a Wiley Mini-Mill [60 mesh hand screen]. Nitrogen and Carbon analysis requires sample material be fully powdered.
<u>Containers:</u>	Submit samples in coin envelopes.
NOTE:	The Lab provides grinding service for \$2.15 per sample.

FEED ANALYSES

<u>Sample Amount:</u>	Submit 50 g of dried and ground sample. The maximum unground sample size is one (1) large grocery bag.
<u>Feed Preparation:</u>	Oven-dry samples at 55-60°C for 24 hours. Grind material to pass through a 40 mesh screen on a Wiley Mini-Mill [60 mesh hand screen].
NOTE:	The Lab provides grinding service for \$2.15 per sample.

WATER & WASTE WATER ANALYSES

<u>Sample Amount:</u>	Submit 250 mL per sample (5 mL per element for extracts).
<u>Water Preparation:</u>	Typically, water samples should be stored under refrigeration.
NOTE:	More detailed water sample preservation guidelines are available on the Lab’s web site (http://danranlab.ucanr.org in the section titled Sampling and Preparation).

SOIL ANALYSES

NOTE: Grinding charge is \$2.15 per sample.

See page 3 for sample amount and preparation guidelines.

The fees below do not include the processing or set-up fees (see page 2 for information on these fees).

SOIL FERTILITY TESTS

ANALYSIS	CODE	COST
Aluminum (KCl extraction)	Al (KCl)	6.10
Ammonium-Nitrogen	NH ₄ -N	3.95
Carbon (Total)	C	6.10
Copper (DTPA extract)	Cu	6.10
Exchangeable Magnesium	X-Mg	3.95
Exchangeable Calcium	X-Ca	3.95
Exchangeable Potassium	X-K	3.95
Exchangeable Sodium	X-Na	3.95
Iron (DTPA extract)	Fe	6.10
Manganese (DTPA extract)	Mn	6.10
Nitrate-Nitrogen	NO ₃ -N	3.95
Nitrogen (Total)	N	6.10
Phosphate-Bray (acidic soil)	Bray-P	3.95
Phosphate-Olsen (neutral/alkaline soil)	Olsen-P	3.95
Sulfate-Sulfur (Calcium-Phosphate extract)	SO ₄ -S	3.95
Total Kjeldahl Nitrogen	TKN	7.10
Zinc (DTPA extract)	Zn	6.10

SOIL SALINITY TESTS

USING SATURATED PASTE EXTRACTS

ANALYSIS	CODE	COST
Bicarbonate	HCO ₃	4.40
Boron	B	4.40
Calcium	Ca	4.40
Carbonate	CO ₃	4.40
Chloride	Cl	4.40
Electrical Conductivity	EC	4.40
Magnesium	Mg	4.40
Exchangeable Sodium Percent (2) (*requires Ca, Mg, Na)	ESP	N/C*
Nitrate-Nitrogen	NO ₃ -N	4.40
pH	pH	4.40
Potassium	K	4.40
Saturation Percent	SP	4.40
Sodium	Na	4.40
Sodium Adsorption Ratio (2) (*requires Ca, Mg, Na)	SAR	N/C*
Sulfate-Sulfur	SO ₄ -S	4.40

SOIL PHYSIO-CHEMICAL TESTS

ANALYSIS	CODE	COST
Bulk Density	BD	3.95
Calcium Carbonate (Lime)	CaCO ₃	6.10
Cation Exchange Capacity	CEC	7.65

(continued in next column)

SOIL PHYSIO-CHEMICAL TESTS (continued)

ANALYSIS	CODE	COST
Moisture Retention: (0.3, 1, 5, 10, 15, or other atm)	Moisture Retention	6.10 each pt
Organic Carbon (*requires OM)	Org-C	N/C*
Organic Matter	OM	7.65

SOIL TESTS - TOTALS

ANALYSIS	CODE	COST
Arsenic	As	7.65
Copper	Cu	6.10
Iron	Fe	6.10
Manganese	Mn	6.10
Phosphorus	P	6.10
Selenium	Se	7.65
Zinc	Zn	6.10

DISCOUNTED GROUP TESTS-SOILS

ANALYSIS / CODE	COST
Soil Salinity Group 2 (6) [SP, pH, EC, Ca, Mg, Na, Cl]	23.00
Soil Salinity (7) [SP, pH, EC, Ca, Mg, Na, Cl, HCO ₃ , CO ₃]	26.45
Extractable Micronutrients (2) [DTPA: Zn, Mn, Fe, Cu]	17.00
Exchangeable Cations (3) [X-K, X-Na, X-Ca, X-Mg]	11.75
Nitrate & Ammonium (2) [NO ₃ -N, NH ₄ -N]	6.00
Particle Size Analysis (1) [Sand/Silt/Clay]	9.70
Soil Fertility (3) [NO ₃ -N, Olsen-P, X-K]	9.70
Total Micronutrients (2) [Total: Zn, Mn, Fe, Cu]	17.00
Total Nitrogen & Carbon (2) [N, C]	7.70

TESTS on (client-provided) SOIL EXTRACTS

ANALYSIS	CODE	COST
Nitrate	NO ₃ -N	3.35
Ammonium	NH ₄ -N	3.35

DISCOUNTED GROUP TESTS-SOIL EXTRACTS

Nitrate & Ammonium (2)[NO ₃ -N, NH ₄ -N]	4.95
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*No-charge calculation requiring other tests as indicated.

PLANT / FEED / MISCELLANEOUS ANALYSES

NOTE: Grinding charge is \$2.15 per sample.

See page 3 for sample amount and preparation guidelines.

The fees below do not include the processing or set-up fees (see page 2 for information on these fees).

PLANT ANALYSIS

ANALYSIS-TOTALS	CODE	COST
Aluminum	Al	7.60
Arsenic	As	7.60
Barium	Ba	4.60
Boron	B	4.60
Cadmium	Cd	4.60
Calcium	Ca	4.60
Carbon	C	6.10
Chromium	Cr	4.60
Chromium (oxide)	Cr (oxide)	6.65
Cobalt	Co	4.60
Copper	Cu	4.60
Iron	Fe	4.60
Lead	Pb	4.60
Magnesium	Mg	4.60
Manganese	Mn	4.60
Molybdenum	Mo	4.60
Nickel	Ni	4.60
Nitrogen	N	6.10
Phosphorus	P	4.60
Potassium	K	4.60
Selenium	Se	7.60
Silica (as Total Si)	Si	7.60
Sodium	Na	4.60
Sulfur	S	4.60
Total Kjeldahl Nitrogen	TKN	7.00
Vanadium	V	4.60
Zinc	Zn	4.60

ANALYSIS-EXTRACTABLES	CODE	COST
Ammonium-Nitrogen	NH ₄ -N	4.15
Chloride	Cl	4.15
Nitrate-Nitrogen	NO ₃ -N	4.15
Phosphate-Phosphorus	PO ₄ -P	4.15
Potassium	K	4.60
Sulfate-Sulfur	SO ₄ -S	6.10

DISCOUNTED GROUP TESTS-PLANT

ANALYSIS / CODE	COST
Extractable N-P-K (3) [NO ₃ -N, PO ₄ -P, K]	9.70
Extractable N-P-K (4) [NO ₃ -N, NH ₄ -N, PO ₄ -P, K]	12.05
Nitrate and Ammonium (2) [NO ₃ -N, NH ₄ -N]	6.00
Nutrient Panel A (2) [N, P, K]	9.70
Nutrient Panel B (2) [S, B, Ca, Mg]	12.05
Nutrient Panel C (2) [Zn, Mn, Fe, Cu]	12.05
Nutrient Panel D (5) [Panels A, B & C tests]	23.15
Total Nitrogen & Carbon (2) [N, C]	7.70

FEED ANALYSIS	CODE	COST
Acid Detergent Insoluble N (includes ADF)	ADIN	13.30
Acid Detergent Fiber	ADF	6.65
ADF Ash Free (includes ADF) (ash free)	ADF	9.70
Ash Content	Ash	4.15
Cellulose (includes ADF)	Cellulose	13.30
Crude Protein	Protein	6.10
Dry Matter	DM	4.15
Fat	Fat	9.85
Fat with Rinse	Fat with Rinse	13.30
Hemicellulose	Hemicellulose	13.30
Lignin (ash free)	Lignin (ash free)	7.60
Neutral Detergent Fiber	NDF	6.65
NDF Ash Free (includes NDF) (ash free)	NDF	9.70
Partial DM (dried at 55°C) (dried at 55°C)	Partial DM	2.15
Total Digestible Nutrients (*requires ADF)	TDN	N/C*

ANALYSIS-CARBOHYDRATES	CODE	COST
Fructose	Fructose	22.15
Glucose	Glucose	22.15
Sorbitol	Sorbitol	22.15
Total Glucose	Total Glucose	22.15
Starch (2) (includes Glucose and Total Glucose)	Starch	28.00
Sucrose	Sucrose	22.15
Total Non-Structural Carbohydrates (3) (includes Fructose, Sucrose and Total Glucose)	TNC	28.00

DISCOUNTED GROUP TESTS-CARBOHYDRATES

ANALYSIS / CODE	COST
Soluble Carbohydrates (1) [Fructose, Glucose, Sucrose]	22.15
Carbohydrate Panel (3) [TNC, Starch, Fructose, Glucose, Sucrose, Total Glucose]	28.00

MANURE and COMPOST TESTS

ANALYSIS	CODE	COST
Electrical Conductivity	EC (water 1:5)	4.60
Partial DM (dried at 55°C)	Partial DM (dried at 55°C)	2.15
pH	pH (water 1:5)	4.60

MISCELLANEOUS SAMPLES & ANALYSES

Please contact the Laboratory to have non-standard samples tested or to request tests not listed in this fee schedule. Your analytical needs will be met to the best of the Laboratory's ability.

*No-charge calculation requiring other tests as indicated

WATER & WASTE WATER ANALYSES

NOTE: Filtration charge is \$3.35.

See page 3 for sample amount and preparation guidelines.

The fees below do not include the processing or set-up fees (see page 2 for information on these fees).

Detailed sample preservation guidelines are available on the Lab's web site (<http://danranlab.ucanr.org>) in the section titled Sampling and Preparation).

<u>ANALYSIS</u>	<u>CODE</u>	<u>COST</u>
Alkalinity	Alkalinity	3.35
Ammonium-Nitrogen	NH ₄ -N	3.35
Bicarbonate	HCO ₃	3.35
Carbonate	CO ₃	3.35
Chloride	Cl	3.35
Dissolved Organic Carbon (requires filtration)	DOC	5.95
Electrical Conductivity	EC	3.35
Exchangeable Sodium Percent (2) (*requires Ca, Mg, Na)	ESP	N/C*
Hardness (1) (*requires Ca, Mg)	Hardness	N/C*
Nitrate-Nitrogen	NO ₃ -N	3.35
pH	pH	3.35
Phosphorus	PO ₄ -P(soluble P)	3.35
Sodium Adsorption Ratio (2) (*requires Ca, Mg, Na)	SAR	N/C*
Total Carbon	Total C	5.95
Total Dissolved Solids	TDS	4.15
Total Kjeldahl Nitrogen	TKN	7.15
Total Nitrogen	Total N	5.95
Total Organic Carbon	TOC	5.95
Total Solids	TS	4.15
Total Suspended Solids	TSS	4.15
Turbidity	Turbidity	3.35
Volatile Suspended Solids (requires TSS)	VSS	4.15

WATER TESTS – SOLUBLE MINERALS

<u>ANALYSIS</u>	<u>CODE</u>	<u>COST</u>
Aluminum	Al	3.35
Boron	B	3.35
Calcium	Ca	3.35
Copper	Cu	3.35
Iron	Fe	3.35
Magnesium	Mg	3.35
Manganese	Mn	3.35
Potassium	K	3.35
Silica (as Soluble Si)	Si	3.35
Sodium	Na	3.35
Sulfate (Sulfur)	SO ₄ -S (soluble S)	3.35
Vanadium	V	4.60
Zinc	Zn	3.35

*No-charge calculation requiring other tests as indicated

<u>ALTERNATE METHODS</u>	<u>CODE</u>	<u>COST</u>
Cu (soluble, low level)	Cu (soluble, low level)	9.95
Cu (total, low level)	Cu (total, low level)	9.95
Phosphorus	P (Soluble by ICP)	3.35
Chloride	Cl (Ion Chromatography)	9.95
Sulfate	SO ₄ (Ion Chromatography)	9.95

WATER TESTS – TOTALS

<u>ANALYSIS</u>	<u>CODE</u>	<u>COST</u>
Aluminum	Al	4.15
Arsenic	As	7.60
Boron	B	4.15
Cadmium	Cd	4.15
Calcium	Ca	4.15
Chromium	Cr	4.15
Copper	Cu	4.15
Iron	Fe	4.15
Lead	Pb	4.15
Magnesium	Mg	4.15
Manganese	Mn	4.15
Mercury	Hg	9.95
Molybdenum	Mo	4.15
Nickel	Ni	4.15
Phosphorus	P	4.15
Potassium	K	4.15
Selenium	Se	7.60
Sodium	Na	4.15
Sulfur	S	4.15
Zinc	Zn	4.15

DISCOUNTED GROUP TESTS-WATER

<u>ANALYSIS / CODE</u>	<u>COST</u>
Water Suitability Group 2 (5) [pH, EC, SAR, Ca, Mg, Na, Cl, B]	20.00
Water Suitability (6) [pH, EC, SAR, Ca, Mg, Na, Cl, B, HCO ₃ , CO ₃]	23.00
Bicarbonate & Carbonate (1) [HCO ₃ , CO ₃]	4.95
Soluble Micronutrients (2) [Zn, Mn, Fe, Cu]	6.65
Soluble Salts (3) [K, Ca, Mg, Na]	6.65
Nitrate & Ammonium (2) [NO ₃ -N, NH ₄ -N]	4.95
Anion Panel (4) [Cl, SO ₄ -S (soluble S), NO ₃ -N, HCO ₃]	6.65
Ion Chromatography Panel (2) [Cl, SO ₄]	11.55