

Sending Soil and Leaf Samples from the Big Island via Pete Bunn and Crop Nutrient Solutions

For coffee leaf and soil samples, continue to follow the sampling directions found here (bit.ly/47CeZr0)

Note: Soil from the island of Hawaii cannot be sent to Pete on Oahu because of the state DOA ROD quarantine. Soil can be shipped directly to the lab in Ohio but Pete must send the documents required for that.

Oahu, Maui, and Kauai County samples can be mailed to Pete Bunn at:
41-027 Hilu St.
Waimanalo, HI 96795

Prices include priority mail from Oahu to the lab in Ohio, but shipments are consolidated into several samples in order to cover the cost of freight.

Consolidation results in a reporting turnaround time of 10-20 days after Pete receives a sample, depending in how quickly samples accumulate.

Expedited shipping costs an additional \$12, resulting in an expected turnaround time of 7-10 days.

Interpretation and recommendation is \$15/sample. For multiple samples of 5 or more, this is charged by the hour. That results in a cost of \$5-7/sample.

Heavy metals pricing is on page four. Pete cannot interpret the results for Hawaii soils but can refer you to a local environmental scientist for this.

Use code S001CN/S005C for soil that has been recently had growing plants. One cup of soil is needed for the S001C and S005C, send double that for additional tests. Remove any large chunks, roots or debris before shipping soil. Follow the sampling directions here (bit.ly/3QKiLsg) for soil.

Wet soil can be spread out over a clean plastic sheet and air dried with a fan overnight. Never heat soil to dry it, this will change the test results.

Note: Leaf analysis requires the samples be oven dried by the client at 150-170 degrees F until crispy and dry like paper. A fruit dehydrator works well, set on 150-160 F and dried for several hours.

Please contact Pete if you have any questions, etc.

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Note: only 2 cups of soil are needed for most tests. See soil sampling guidelines on the website. Mix composite samples well after removing gravel, clumps and debris. Scoop out 2 cups of soil. Prices include priority mail from Oahu to the lab in Ohio. Outerisland samples need to be sent to me on Oahu. Samples are consolidated and shipped every 5-10 days. Shipments usually reach the lab within 5-7 days. Reporting turn around is 10-20 days from the time that I receive samples. For reporting turn around of 7-12 work days, there is an unconsolidated shipment fee of \$15. The following tests are commonly requested but the lab can do more; please inquire.

**Interpretation & Recommendation is \$15 per sample (less for multiple samples)
Consulting and Field Time is \$75 per hour (\$60 per hour for ag accounts)**

Analysis Code	SOIL ANALYSIS	Test Price
S001C	Standard Soil- Mehlich 3 (scoop) extractable P, Ca, Mg, K, Na, S, B, Fe, Mn, Zn, Cu, Al, Olsen P, CEC (calculated), % Base Saturation, pH (1:1)	\$30
S001CN	Standard Soil plus N- includes Standard Soil plus nitrate-N & ammonium-N (KCl extractable)	\$35
S005C	Complete Soil- includes Standard Soil plus soluble salts (2:1), nitrate-N & ammonium-N	\$40
S003	Soil-Less Media- water extraction with pH, soluble salts, nitrate-N, ammonium-N, P, Ca, Mg, K, Na, S, B, Fe, Mn, Zn, Cu, Al, Mo, Co	\$35
S006	Saturated Soil Paste- water extraction with soluble salts, chloride, nitrate-N, ammonium-N, bicarbonate, S, P, Ca, Mg, K, Na, B, Fe, Mn, Zn, Cu, Al, SAR (calculated), pH	\$45
S015A	Alkaline Soil Package- ammonium acetate (pH 8.1) extractable Ca, Mg, K, Na, S, Mehlich 3 extractable Fe, Mn, Cu, Zn, nitrate-N, ammonium-N, Calculated CEC, % Base Saturation, pH (1:1)	\$40
S014	Green Roof Media- total porosity %, aeration porosity %, water retention porosity %, bulk density at field capacity	\$125
S290	Infiltration Rate via Drop Method	\$100
S171	Percent Sand, Silt & Clay (ASTM D422)	\$45
S176	Mechanical Analysis & Sand Fractions (ASTM D422)	\$70
S184	Moisture Measurement (% saturation)	\$20

SOIL ANALYSIS (continued)

S019	Soil Health Tool- H3A Extractable Soil Nutrients plus water extractable organic carbon & nitrogen, C:N ratio, total inorganic N, Respiration (IRGA), Soil Health Score	\$80
S113	Soil Respiration IRGA (24 hour)	\$40
S242	Autoclaved Citrate Extractable Protein (ACE Protein)	\$45
S241	Permanganate-Oxidizable Carbon (POXC)	\$40
S273	Water-Stable Aggregate Test (gravimetric)	\$50
S138	Total Carbon (for soil pH <7)	\$15
S139	Total Organic Carbon (acid treated)	\$20
S112	Total Nitrogen	\$15
S202	Total Carbon/Nitrogen Ratio	\$25
S106	Aluminum (KCl extractable)	\$15
S107	Ammonium Acetate Extractable- Ca, Mg, K, Na, S	\$20
S110	Nitrate & Ammonium Nitrogen (5:1 1N KCl)	\$20
S131	Bulk Density (estimated)	\$10
S136	Calcium Carbonate Equivalent (CCE)	\$35
S204	CEC (ammonium acetate displacement)	\$35
S140	Chloride (2:1 calcium nitrate extract)	\$10
S225	Olsen Phosphorus (ICP)	\$10
S256	Sodium Adsorption Ratio (as paste)	\$25
S205	Soil pH (1:1 water:soil)	\$10
S206	Soil pH (CaCl ₂)	\$10
S210	SMP/Sikora Buffer pH	\$10
S216	Soil pH (as a paste)	\$10
S260	Soluble Salts as EC (2:1 water:soil)	\$10
S262	Soluble Salts as a paste (EC _e)	\$25
S320	Sieving for 7 different screen sizes	\$50

TISSUE ANALYSIS

T002	Complete Tissue (wet chemistry)- N, P, K, Ca, Mg, S, B, Fe, Mn, Cu, Zn, Al, Na (<i>samples must be oven dried</i>)	\$45
T122	Total Carbon	\$15
T125	Chloride	\$15
T200	Corn Stalk Nitrate Test	\$20
T225	Dry Weight	\$10
T155	Molybdenum	\$15
T165	Nitrate & Ammonium-N (acetic acid extract)	\$20
T170	Nitrogen (total)	\$15
F002	Forage Evaluation- (wet chemistry)- moisture, crude and digestible protein, estimated crude fiber, TDN, ENE, ADF, NDF, Ca, Mg, K, P, Na, Fe, Mn, Zn, Cu (S & B can be added for \$10 each)	\$45
F006	Nitrate & Ammonium (water soluble)	\$15

WATER ANALYSIS

W002	Standard Irrigation Water- pH, hardness, EC, SAR, RSC, Ca, Mg, K, Na, Fe, B, Cl, OH, SO ₄ -S, carbonate, bicarbonate, cation:anion ratio	\$55
W004	Complete Irrigation Water- includes Standard Irrigation Water plus Mn, Cu, Zn, Al	\$65
W125	Chloride (titration)	\$15
W007	Effluent Water Analysis- includes Complete Irrigation Water plus total P & Nitrate-N	\$75
W005	Nitrate-N & Nitrite-N	\$25
IA642	Phosphorus (dissolved)	\$20
W190	Phosphorus (total)	\$15
W201	Salt Concentration (TDS)	\$15
IB215	Silica (as soluble silicate)	\$30
W225	Total Suspended Solids	\$20
W250	Total Volatile Solids	\$20

AMENDMENT ANALYSIS

Z001	Standard Manure- includes N, P, K, moisture, organic matter, mineral matter	\$55
Z002	Complete Manure- includes Standard Manure Manure plus Ca, Mg, Na, S, Fe, Mn, Cu, Zn, B	\$70
Z004	Compost Analysis- includes Complete Manure plus pH, C:N ratio	\$80
Z003	Nitrate & Ammonium Nitrogen	\$20
Z155	Moisture %	\$10
Z210	Soluble Salts	\$10
L001	Standard Lime Analysis- Ca, Mg, fineness	\$55
L002	Complete Lime- includes Standard Lime plus Na, K, S, Fe, Mn, Cu, Zn, B	\$65
L166	Limestone pH	\$10
L179	Water Solubility (%)	\$20

FERTILIZER ANALYSIS

X001	Standard Fertilizer- includes N, P, K	\$80
X002	Complete Fertilizer- includes Standard Fertilizer plus Ca, Mg, Na, Fe, Mn, Cu, Zn, B	\$100
X003	Liquid Greenhouse Fertilizer- EC, pH, Cl, nitrate-N, ammonia-N, P, K, S, Ca, Mg, Na, B, Fe, Mn, Zn, Cu, Mo, Co, Al	\$40
X183	Salt Index	\$15
X190	Sulfur	\$20
X200	Conductivity	\$15
X205	Specific Gravity	\$10
IB007	CFR 503 Metals*- As, Cd, Cr, Cu, Hg, Mo, Ni, Pb, Se, Zn	\$150

Individual Metals for \$20 each (unless noted), reported in 2 weeks

IB030 Arsenic*	IB110 Cobalt	IB190 Nickel*
IB040 Barium	IB120 Copper*	IB210 Selenium*
IB050 Beryllium	IB140 Lead*	IB230 Silver
IB060 Cadmium*	IB236 Lithium (\$25)	IB280 Titanium (\$25)
IB080 Chromium (Hexavalent)	IB170 Mercury* (\$35)	IB290 Vanadium
IB090 Chromium*	IB180 Molybdenum*	IB300 Zinc*