



CIFOR-ICRAF Soil Plant Spectral Diagnostics Laboratory Full Sample Analysis Packages Pricelist 2023

Sample Processing Packages					
Analysis Selection Panel	Sample processing methods	Description	Unit Cost USD	Required Minimum Sample weight (g)	Instruments
<input type="checkbox"/>	Soil Sample processing	Drying, grinding and sieving through 2mm sieve, fine grinding to < 0.05mm	\$2.00	NLT 350g	Not Applicable
<input type="checkbox"/>	Plant Sample processing	Drying, crushing and sieving through 0.5mm sieve	\$3.00	NLT 50	Not Applicable
<input type="checkbox"/>	Fertilizer/Manure Sample processing	Drying and grinding	\$3.00	NLT50g	Not Applicable
<input type="checkbox"/>	Fertilizer/Manure fine grinding	Fine grinding to NLT 0.05mm sieve for MIR and pXRF analysis	\$3.00	NLT50g	Not Applicable
Spectral Analysis Packages					
Analysis Selection Panel	Spectral analysis methods	Description	Unit Cost USD	Required Minimum Sample weight (g)	Instruments
<input type="checkbox"/>	Mid Infrared Spectroscopy (MIR) using the HTs XT for soils/plants/manure/compost/fertilizers	Samples are scanned on Bruker high throughput Invenios HTs XT for prediction of various sample functional properties based on selected wet chemistry reference analytical package indicated below or selection of spectral pXRF or LDPSA analytical package as reference method	\$6.00	10g for MIR only and additional 90g for wet chem analysis on reference samples subset	HTs XT_FTMIR



<input type="checkbox"/>	Mid Infrared Spectroscopy using the Alpha Spectrometer for soils/plants/manure/dry compost	Samples are scanned on Bruker Alpha spectrometer for prediction of various sample functional properties based on selected wet chemistry reference analytical package indicated below or selection of spectral pXRF or LDPSA analytical package as reference method	\$6.00	10g for MIR only and additional 90g for wet chem analysis on reference samples subset	Alpha ZnSe_FTMIR
<input type="checkbox"/>	Near Infrared Spectroscopy for soils/plants/manure/compost/fertilizers	Samples are scanned on Bruker Multi Purpose Analyzer for prediction of various sample functional properties based on selected wet chemistry reference analytical package indicated below or selection of spectral pXRF or LDPSA analytical package as reference method	\$6.00	20g for NIR only and additional 90g for wet chem analysis on reference samples subset	MPA_FT NIR
<input type="checkbox"/>	X-Ray Fluorescence Spectroscopy for soils	Samples are scanned on Bruker Tracer Vi pXRF for direct determination of total elements in soils such as Soil Trace and Major Elements - Na, Mg, Al, P, S, K, Ca, Ti, Cr, Mn, Fe, Co, Ni, Cu, Zn, As, Se, Mo, Cd, and Pb	\$11.50	30g	pXRF
<input type="checkbox"/>	X-Ray Fluorescence Spectroscopy for plants	Samples are scanned on Bruker Tracer Vi for direct determination of total elements in plants such as plant Trace and Major Elements - Na, Mg, Al, P, S, Cl, K, Ca, Ti, V, Cr, Mn, Fe, Co, Ni, Cu, Zn, As, Se, Br, Rb, Sr, Mo, Cd, Sb, Ba, Hg, and Pb	\$13.50	30g	pXRF
<input type="checkbox"/>	X-Ray Fluorescence Spectroscopy for manures/compost/fertilizers	Samples are scanned on Bruker Tracer Vi for direct determination of total elements in fertilizers/manures such as Fertilizer Trace and Major Elements - Na, Mg, Al, Si, P, S, K, Ca, Ti, Cr, Mn, Fe, Co, Ni, Cu, Zn, As, Se, Mo, Cd, and Pb	\$11.50	30g	pXRF
<input type="checkbox"/>	Laser Diffraction Particle Size Analysis-Soil Particle Size Distribution or Texture	Samples scanned on LDPSA for determination %sand, %Silt and %Clay	\$13.00	30g	LDPSA at CNLS
Wet Chemistry/Reference Methods Analytical Packages					

Analysis Selection Panel	Wet chemistry/reference analysis methods	Description	Unit Cost USD	Required Minimum Sample weight (g)	
<input type="checkbox"/>	CIFOR-ICRAF Wet Chemistry Soil Analysis Soil Option 1	Results obtained for pH, EC (Salts), Exchangeable Acidity, pH, EC (Salts), Exchangeable Acidity, Mehlich3{Phosphorus, Potassium, Calcium, Magnesium, Manganese, Sulphur, Copper, Boron, Zinc, Aluminium, Sodium, Iron}, C.E.C, Phosphorus Sorption Index (PSI). will be used for calibration and prediction using either MIR or NIR spectral data	\$50.00	100g	Wet Chem Reference Analysis
<input type="checkbox"/>	CIFOR-ICRAF Wet Chemistry Soil Analysis Option 2	Results obtained for pH, EC (Salts), Mehlich 3{Phosphorus, Potassium, Calcium, Magnesium, Sodium}, C.E.C will be used for calibration and prediction using either MIR or NIR spectral data	\$30.00	100g	Wet Chem Reference Analysis
<input type="checkbox"/>	CIFOR-ICRAF Wet Chemistry Soil Analysis Option 3	Results obtained for pH, EC (Salts), Mehlich3 {Phosphorus, Potassium, Calcium, Magnesium, Manganese, Sulphur, Copper, Boron, Zinc, Sodium, Iron}, C.E.C will be used for calibration and prediction using either MIR or NIR spectral data	\$20.00	100g	Wet Chem Reference Analysis
<input type="checkbox"/>	CIFOR-ICRAF Wet Chemistry Plant Analysis Option 4	Results obtained for Complete Leaf Analysis - Total Nitrogen, Phosphorus, Potassium, Calcium, Magnesium, Sulphur, Sodium, Iron, Manganese, Boron, Copper, Molybdenum, Zinc will be used for calibration and prediction using either MIR or NIR spectral data	\$65.00	30g	Wet Chem Reference Analysis

<input type="checkbox"/>	CIFOR-ICRAF Wet Chemistry Manure/Compost Analysis Option 5	Results obtained for manure or compost analysis - pH, EC (Salts), Dry matter, Carbon, Total Nitrogen, Phosphorus, Potassium, Calcium, Magnesium, Sulphur, Manganese, Iron, Zinc, Copper, Boron, Sodium, C/N ratio will be used for calibration and prediction using either MIR or NIR spectral data	\$20.00	30g	Wet Chem Reference Analysis
Import - Export Permits Costs and CN Reference Analysis at Iso-Analytical Laboratory in UK					
<input type="checkbox"/>	Import permit per package	Permit per package	\$6.00		Samples being imported to Kenya
<input type="checkbox"/>	Export permit per package	Permit per package	\$9.00		Samples exported to other countries including- CN Reference Analysis at Iso-Analytical Lab in UK
<input type="checkbox"/>	CN analysis at Iso-Analytical Laboratory in UK	CN analysis per sample	\$30.00	5g fine ground powder	CN Reference Analysis at Iso-Analytical Lab in UK
<input type="checkbox"/>	Administrative cost for non - CIFOR_ICRAF projects: courier, sample submission for analysis at CROPNutrition Laboratories	Cost per batch of samples submitted to CNLS for wet chemistry analysis	2% of the total wet chemistry total costs	1 Batch of client samples submitted	Wet Chem Reference Analysis at CropNutrition Lab



<input type="checkbox"/>	Courier charges to Iso-Analytical Laboratory UK per package	Courier services per package	\$120.00	Cost covers a set/package of 32 reference samples only and varies depending on total sample weight weight+package weight	CN Reference Analysis at Iso-Analytical Lab in UK
<input type="checkbox"/>	Exported sample packaging container costs	External sample package cost/shipment	\$20.00	1 Metal box container and padlock	CN Reference Analysis at Iso-Analytical Lab in UK
Spectral Prediction from ICRAF Spectral Library					
	Spectral prediction methods	Description	Unit Cost USD	Required Minimum Sample weight (g)	Instruments
<input type="checkbox"/>	Mid Infared Soil/Plant/Manure/Compost and fertilizer Prediction per sample functional property predicted	ICRAF spectral library will be used to predict each client selected sample functional property, cost will be per sample predicted	\$2.5/sample predicted	Not Applicable	Not Applicable
<input type="checkbox"/>	Near Infared Soil/Plant/Manure/Compost and fertilizer Prediction per sample functional property predicted	ICRAF spectral library will be used to predict each client selected sample functional property, cost will be per sample predicted	\$2.5/sample predicted	Not Applicable	Not Applicable
*Notes					



1. Models with reported prediction accuracy ($r^2 > 0.6$ and RPD= or > 2) of independent hold-out set will be used.
2. New spectra will be predicted using ICRAF spectral library if they are spectrally similar.
3. Where new spectra is not well represented by ICRAF spectral library a subset will be subjected for wet chemistry for parameters of intrest.
4. Results will be shared via email which includes a pdf document explaining the methodology and excel file(s) with all acquired data.
- 5.No administrative fees will be charged for ALL CIFOR-ICRAF internal projects