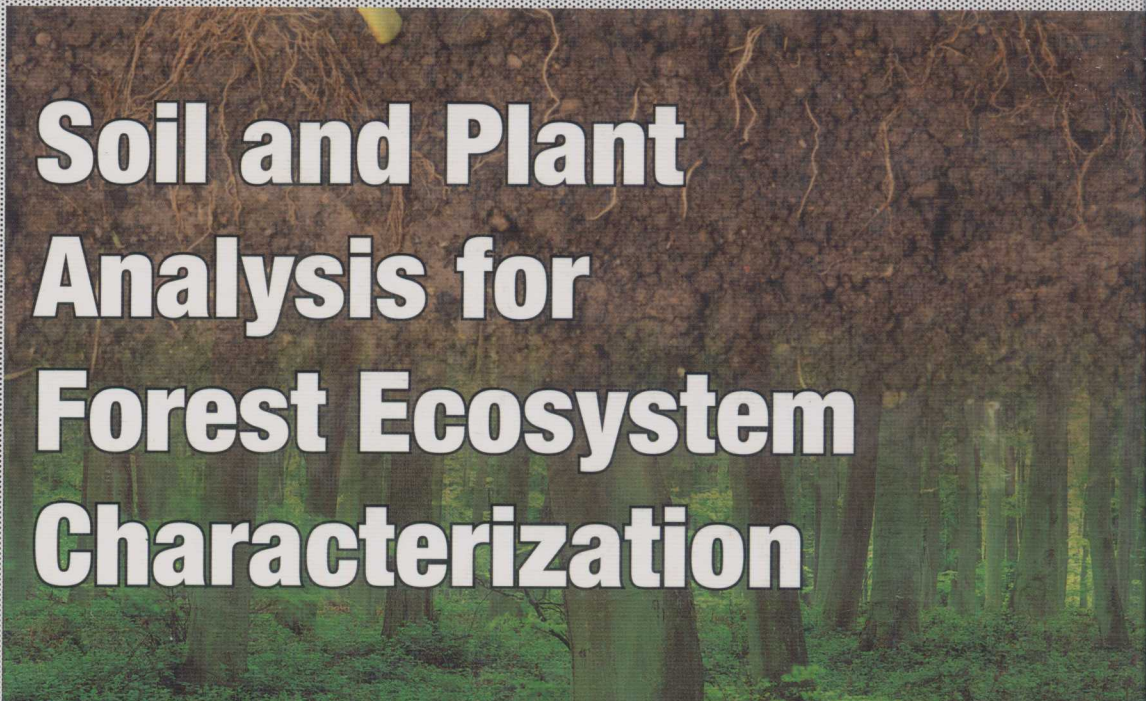


Ecosystem Science and Applications



Soil and Plant Analysis for Forest Ecosystem Characterization

Daniel J. Vogt

Joel P. Tilley

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Acronyms

ADP	Adenosine Diphosphate
AFDM	Ash-free Dry Mass
AM fungi	Arbuscular Mycorrhizal Fungi
ATGC	nucleotide bases: Adenine, Thymine, Guanine, Cytosine
ATP	Adenosine Triphosphate
BLAST	Basic Local Alignment Search Tool program for finding regions of local similarity between sequences
CB	Citrate-Bicarbonate
CDB	Citrate-Dithionite-Bicarbonate
cDNA	complementary DNA (cDNA) is DNA synthesized from a messenger RNA (mRNA) template in a reaction catalyzed by the enzymes reverse transcriptase and DNA polymerase, and is often used to clone eukaryotic genes in prokaryotes
CEC	Cation exchange capacity
CFV	Coarse Fraction Volume (as in the > 2 mm particles in the bulk soil)
CTAB	Cetyltrimethylammonium Bromide—a positively charged detergent
CV	Coefficient of Variation—statistical parameter that is the ratio of the standard deviation to the mean
dATP	Deoxyadenosine triphosphate (dATP)—a nucleoside triphosphate used in cells for DNA synthesis (or replication)
DBH	Diameter at breast height (1.3 m) of a tree
dCTP	Deoxycytidine triphosphate (dCTP)—a nucleoside triphosphate that contains the pyrimidine base cytosine
dsDNR	double stranded Deoxyribonucleic Acid (DNA)
DDI	Distilled De-Ionized (water)
DDW	Double Distilled Water
DEA	Dentrification Enzyme Activity
dGTP	Deoxyguanosine triphosphate (dGTP)—a nucleoside triphosphate, and a nucleotide precursor used in cells for DNA synthesis
DNA	Deoxyribonucleic Acid
dNTP	deoxy-nucleotide-tri phosphate—used by the DNA polymerase to add nucleotides to the elongating DNA strand (during replication). dNTP is a generic term referring to the four deoxyribonucleotide triphosphates: dATP, dCTP, dGTP and dTTP

DON	Dissolved Organic Nitrogen
DTPA	Diethylene Triamine Pentaacetic Acid
dTTP	Deoxythymidine triphosphate (dTTP)—one of the four nucleoside triphosphates that are used in the <i>in vivo</i> synthesis of DNA
DW	Distilled Water
EC	Electrical Conductivity
ECEC	Effective Cation Exchange Capacity
EDTA	Ethylene Diamine Tetraacetic Acid
EF-1 α	Eukaryotic Elongation Factor (also known as EF1A) catalyzes aminoacyl-tRNA binding by the ribosome during translation
EM	Ectomycorrhizas or ectomycorrhizal (fungi or root)
EMF	Electromotive Force (or Voltage)
EPA	The United States Environmental Protection Agency
EtBr	Ethidium Bromide
FAA	Formalin Acetic Acid
FAO	Food and Agriculture Organization of the United Nations
FF	Forest Floor, or sometimes litter or surface organic horizon in forests
FID	Flame Ionization Detector
GC	Gas Chromatograph
GC-rich	Guanine-Cytosine rich means that the GC as a percentage of nitrogenous bases on a DNA molecule is high (from a possibility of four different ones also including adenine and thymine)
GELCOMPAR II	Software Package—a program that makes it possible to link multiple electrophoresis fingerprints to the strains or samples studied and generate multiphasic groupings and identifications with databases of unlimited size
I.D.	Inner Diameter
IC	Ion Chromatography
ICP	Inductively Coupled Plasma Spectroscopy
ID	Identification Number
IRGA	InfraRed Gas Analyzer system
ITS	Internal Transcribed Spacer refers to a piece of non-functional RNA situated between structural ribosomal RNAs (rRNA) on a common precursor transcript
LCI	Ligno-cellulose Index
L-DOPA	L-3, 4-dihydroxyphenylalanine, a chemical that is made and used as part of the normal biology of humans, some animals and plants
LECO CHN	LECO corporation equipment that analyzes Carbon, Hydrogen, Nitrogen (CHN)
LOI	Loss on Ignition
LR0R/LR16	Small conserved subregion for the large subunit (LSU) rDNA gene
LSU rRNA	Large Sub Unit of the ribosomal ribonucleic acid (rRNA)
ML5/ML6	Conserved primer sequence for PCR amplification
MPN	Most Probable Number
NIST	National Institute of Standards and Technology

Oa Horizon	Organic horizon composed of highly decomposed organic material-humus or muck (can see very few signs of the original organic tissues) (USDA Soil Taxonomy [31])
OD	oven dried
Oe layer	Organic horizon composed of intermediate decomposed organic material-peat (can see some signs of the original organic tissues) (USDA Soil Taxonomy [31])
Oi Horizon	Organic horizon composed of slightly decomposed organic material (can still see evidence of the original organic tissues) (USDA Soil Taxonomy [31])
OM	Organic Matter
OSHA	United States Occupational Safety and Health Administration
PCB	Polychlorinated Biphenyl
PCR	Polymerase Chain Reaction
PDAB	p-dimethylaminobenzaldehyde
pH	The decimal logarithm of the reciprocal of the hydrogen ion activity in a solution
PHYLP	PHYLogeny Inference Package—a free computational phylogenetics package of programs for inferring evolutionary trees
PLFA	PhosphoLipid ester-linked Fatty Acids
PVA	Polyvinyl Alcohol
PVC	Polyvinyl Chloride—rigid forms of PVC are frequently used in the construction of pipes or tubes
QA/QC	Quality Assurance/Quality Control
QC	Quality Control
QF-PCR	Quantitative Fluorescent Polymerase Chain Reaction
qPCR or QPCR	real-time quantitative Polymerase Chain Reaction
QRT-PCR	Quantitative Reverse-Transcriptase Polymerase Chain Reaction
rDNA	Ribosomal Deoxyribonucleic Acid
RFLP	Restriction Fragment Length Polymorphism
RNA	Ribonucleic Acid
RPB2	A gene that encodes for RNA polymerase
RQ-PCR	See RT-PCR
rRNA	ribosomal ribonucleic acid is the RNA component of the ribosome and is essential for protein synthesis in all living organisms
%RSD	Relative Standard Deviation, or also referred to as the absolute value of the Coefficient of Variation (CV)
RT-PCR	Reverse Transcription Polymerase Chain Reaction (not to be confused with Real Time PCR or qPCR)
SI unit	The International System of Units (abbreviated SI from French: Le Système international d'unités) is the modern form of the metric system
SOM	Soil Organic Matter
T	Temperature Correction Factor
TCA	Trichloroacetic Acid

TCD	Thermal Conductivity Detector
TDR	Time-Domain Reflectometry
TDS	Total Dissolved Solids
TE	commonly used buffer solution in molecular biology consisting of Tris (pH buffer) and EDTA (cation chelate); used to solubilize DNA or RNA while protecting it from degradation
TKN	Total Kjeldahl Nitrogen (Total Nitrogen using the Kjeldahl method)
TNPP	Total Net Primary Production
UPGMA	Unweighted Pair Group Method with Arithmetic mean
USDA	United States Department of Agriculture
UV	Ultra-violet radiation
W-B	Walkley-Black carbon
wt.	Weight

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