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Version 2

USDA ARS Long-Term Agroecosystem Research (LTAR) Common Experiment V.2



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Lori Abendroth¹, Mark A. Liebig², G Philip Robertson³

¹USDA Agricultural Research Service, Cropping Systems and Water Quality Research Unit, Columbia, MO;

²USDA Agricultural Research Service, Northern Great Plains Research Laboratory, Mandan, ND;

³Michigan State University KBS LTAR



Lori J. Abendroth

USDA ARS Cropping Systems and Water Quality Research Unit

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We use this collection and it's working

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Abstract

A component of the USDA ARS Long-Term Agroecosystem Research (LTAR) network is a Common Experiment standardized across all sites. This collection contains all standardized protocols for the biophysical metrics collected in the Common Experiment.

This collection is version 2 and includes 38 protocols. It includes all protocols from version 1 with three additional protocols published since. These new protocols are:

- Aboveground net herbaceous plant production in grazinglands
- USDA LTAR Common Experiment measurement: Concentration of nutrients and in vitro organic matter digestibility in plant tissue
- USDA LTAR Common Experiment measurement: Surface fluxes of carbon dioxide, water vapor, and energy with the Eddy Covariance method

Troubleshooting

Before start

We recommend starting with this protocol for overview and context:

Lori J. Abendroth, Mark A. Liebig, G Philip Robertson 2024. USDA LTAR Cropland Common Experiment: Standardized primary metric protocols. protocols.io

<https://dx.doi.org/10.17504/protocols.io.261ge59pyg47/v1>

Files

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Protocol



NAME

USDA LTAR Cropland Common Experiment: Standardized primary metric protocols

VERSION 1

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Protocol



NAME

USDA LTAR Common Experiment measurement: Aboveground biomass

VERSION 1

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Protocol

NAME

Aboveground net herbaceous plant production in grazinglands

VERSION 1

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David Augustine

USDA-ARS

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Protocol



NAME

USDA LTAR Common Experiment measurement: Concentration of carbon and nitrogen in aboveground biomass

VERSION 1

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Protocol



NAME

USDA LTAR Common Experiment measurement: Concentration of phosphorus, potassium, and sulfur in aboveground biomass

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Protocol



NAME

USDA LTAR Common Experiment measurement: Obtaining quality metrics in forage aboveground biomass

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USDA LTAR Common Experiment measurement: Concentration of nutrients and in vitro organic matter digestibility in plant tissue

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Archbold-UF Data Manager
Archbold Biological Station

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Protocol



NAME

USDA LTAR Common Experiment measurement: Collection of grain yield data using a yield monitor

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Protocol



NAME

USDA LTAR Common Experiment measurement: Post-processing of spatial grain yield data

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Protocol



NAME

USDA LTAR Common Experiment measurement: PhenoCam for Green Chromatic Coordinate

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Protocol



NAME

USDA LTAR Common Experiment measurement: Soil organic carbon stocks and change

VERSION 1

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SCarolina Córdova
University of Nebraska-Lincoln

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NAME

USDA LTAR Common Experiment measurement: Sediment flux

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Protocol



NAME

USDA LTAR Common Experiment Measurement: Chamber-based fluxes of nitrous oxide (N₂O) and methane (CH₄) from soil

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Protocol



NAME

USDA LTAR Common Experiment measurement: Surface fluxes of carbon dioxide, water vapor, and energy with the Eddy Covariance method

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NAME

USDA LTAR Common Experiment measurement: Rainfall

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NAME

USDA LTAR Common Experiment measurement: Irrigation water applied

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NAME

USDA LTAR Common Experiment measurement: Snow

VERSION 1

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Protocol



NAME

USDA LTAR Common Experiment measurement: Infiltration and percolation

VERSION 1

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NAME

USDA LTAR Common Experiment measurement: Channelized surface flow discharge

VERSION 1

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Protocol



NAME

USDA LTAR Common Experiment measurement: Overland flow

VERSION 1

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Protocol



NAME

USDA LTAR Common Experiment measurement: Discharge from artificial subsurface drains

VERSION 1

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NAME

USDA LTAR Common Experiment measurement: Depth to water table

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NAME

USDA LTAR Common Experiment measurement: Soil water content

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Protocol



NAME

USDA LTAR Common Experiment measurement: Saturated hydraulic conductivity

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Protocol



NAME

USDA LTAR Common Experiment measurement: Soil water potential and matric potential

VERSION 1

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Protocol



NAME

USDA LTAR Common Experiment measurement: Best practices for collection, handling, and analyses of water quantity measurements

VERSION 1

CREATED BY



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Protocol



NAME

USDA LTAR Common Experiment measurement: Dissolved nitrate (NO₃⁻) concentration

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USDA ARS Cropping Systems and Water Quality Research Unit

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Protocol



NAME

USDA LTAR Common Experiment measurement: Dissolved ammonia (NH₃) concentration

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Protocol



NAME

USDA LTAR Common Experiment measurement: Total nitrogen (TN) and total dissolved nitrogen (TDN) concentration

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Protocol



NAME

USDA LTAR Common Experiment measurement: Total phosphorus (TP) and total dissolved phosphorus (TDP) concentration

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USDA ARS Cropping Systems and Water Quality Research Unit

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Protocol



NAME

USDA LTAR Common Experiment measurement: Total suspended solids (TSS)

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Protocol



NAME

USDA LTAR Common Experiment measurement: Best practices for collection, handling, and analyses of water quality samples

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NAME

USDA LTAR Common Experiment measurement: Cropland plant diversity

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Protocol



NAME

USDA LTAR Common Experiment measurement: Non-crop plant biodiversity

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NAME

USDA LTAR Common Experiment measurement: Crop scouting for pests and diseases

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NAME

USDA LTAR Common Experiment measurement: Cereal crop mycotoxin concentration

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NAME

USDA LTAR Common Experiment measurement: Natural pest suppression

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NAME

USDA LTAR Common Experiment measurement: Butterfly diversity and abundance

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