GENERAL INFORMATION

1. **Title of Dataset:** Aboveground herbivory causes belowground changes in twelve oak *Quercus* species: a phylogenetic analysis of root biomass and non-structural carbohydrate storage.

2. **Author Information**

A. Principal Investigator Contact Information

Name: Dr. Cynthia Perkovich

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B. Associate or Co-investigator Contact Information

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3. **Date of data collection (single date, range, approximate date):** 2017-05-01 thru 2018-05-01

4. **Geographic location of data collection:** Herrick Research Greenhouse, Kent State University, Kent OH, United States

5. **Information about funding sources that supported the collection of the data:** Funded by the Herrick Foundation, Kent State University

SHARING/ACCESS INFORMATION

1. **Licenses/restrictions placed on the data:** N/A

2. **Links to publications that cite or use the data:** https://onlinelibrary.wiley.com/doi/pdf/10.1111/oik.08308

3. **Links to other publicly accessible locations of the data:** N/A

4. **Links/relationships to ancillary data sets:** https://doi.org/10.5061/dryad.fttdz08s1

5. **Was data derived from another source**? yes/**no**

A. If yes, list source(s):

6. **Recommended citation for this dataset**: https://doi.org/10.5061/dryad.7d7wm37vq

DATA & FILE OVERVIEW

1. **File List:**

**<list all files (or folders, as appropriate for dataset organization) contained in the dataset, with a brief description>**

Root analysis.csv- this is a dataset with measured root traits of 12 oak species with 5 treatments representing various placement and intensities of herbivory.

2. **Relationship between files, if important:** N/A

3. **Additional related data collected that was not included in the current data package:** N/A

4. **Are there multiple versions of the dataset?** yes/**no**

A. If yes, name of file(s) that was updated:

i. Why was the file updated?

ii. When was the file updated?

METHODOLOGICAL INFORMATION

1. **Description of methods used for collection/generation of data:** see Perkovich C, Ward D. 2021. Aboveground herbivory causes belowground changes in twelve *Quercus* species: a phylogenetic analysis of root biomass and non-structural carbohydrate storage. Oikos, 130, 1797-1812.

2. **Methods for processing the data:** This is a raw data set.

3. **Instrument- or software-specific information needed to interpret the data:** Microsoft excel

4. **Standards and calibration information, if appropriate:** N/A

5. **Environmental/experimental conditions:** Collected in a greenhouse. See Perkovich C, Ward D. 2021. Aboveground herbivory causes belowground changes in twelve *Quercus* species: a phylogenetic analysis of root biomass and non-structural carbohydrate storage. Oikos, 130, 1797-1812 for details

6. **Describe any quality-assurance procedures performed on the data:** N/A

7. People involved with sample collection, processing, analysis and/or submission: Technical help in data collection from John Christakis, Christian Combs, and Jalin Gillepsie.

DATA-SPECIFIC INFORMATION FOR:

1. **Number of variables:** 14

2. **Number of cases/rows:** 270

3. **Variable List:**

Species- species of oak

Location- location of simulated herbivory

Intensity- % damage of simulated herbivory

Agroundmass- dry mass of aboveground tissues (g)

Rootmass- total belowground dry mass (g)

Taprootwght- dry mass of tap root (g)

Coarserootmass- dry mass of all coarse roots (g)

Finerootmass- dry ass of all fine roots (g)

Fcratio- ratio of fine root dry mass to coarse root dry mass

Tapotherratio- ratio of tap root dry mass to fine and coarse root dry mass

Rootsugar- concentration of sugars in root tissues (mg/mL GE)

Rootstarch- concentration of root starches (mg/mL GE)

TNCrootmassratio- ratio of total non-structural carbohydrate concentration (sugar+starch) to total root mass

Ab mass ratio- ratio of aboveground to belowground dry mass

4. **Missing data codes:** NA = no sample

5. **Specialized formats or other abbreviations used:** In intensity column, control indicates no tissues removed, 25 indicates 25% of tissues removed, and 75 indicates 75% of tissues removed. In location column, control indicates no simulated herbivory, apical indicates tissues removed at apical meristem, and lateral indicates tissues removed from lateral branch growth.