

Common Garden Trait Measurements

1 Specific leaf area & Leaf dry matter content

1. From each individual, sample two twig sections from each individual, placing each in a labeled ziploc bag on ice. Twigs should be taken from branches with full sunlight, with healthy, fully expanded leaves.
2. Store samples in a cooler on ice or in a fridge until ready to process
3. From each two, haphazardly select one leaf, avoiding any with damage or disease. Remove the leaf petiole from each.
4. Pat the leaves dry and label each leaf with a sharpie in small, but legible font
5. Scan each leaf using the flatbed scanner, each scan should include the 1-2 leaves depending on their size, a ruler for scale, and ensure that leaves do not touch each other or the edges of the scanner
6. Weigh each leaf to the nearest hundredth of a mg
7. Dry the leaves for 24h at 65C to preserve them temporarily for shipping
8. Upon returning to UBC: re-dry the leaves for 48h at 65C and immediately weigh the dried leaves to the nearest hundredth of a mg

2 Height

1. Measured as the distance from the upper limit of photosynthetic tissue to ground level
2. Trees and shrubs can be measured using the 16ft extendable ruler

3 Stem specific density

1. From each individual, cut a branch approximately 50cm from the terminal end (this is approximately the length of a ladies forearm to fingertips)
2. Cut from the proximal end 10cm of branch wood, placing the sample in the labeled bag with the leaf samples. Aim to take as uniform a branch sample as possible, ie avoid the insertion points of branches if possible.
3. Remove loose bark or moss/lichen from the sample
4. Determine fresh volume using the water displacement method: fill the appropriately sized graduated cylinder with water. Place cylinder on the balance and tare. Completely submerge the wood sample under the water using fine nosed tweezers. Ensure the sample is not touching the sides of the cylinder. Record the increase in mass caused by the water displacement. This is equivalent to the sample volume in cm³

5. Dry the stems with the leaves for 24h at 65C to preserve them temporarily for shipping
6. Dry the stems at 101C for 48 hours prior to weighing
7. Weight dried stems
8. Tare the balance in between samples and replace water as needed

4 Things to purchase/find:

- Envelopes - Amazon basics box 500 \$16 USD
- Extendable measuring rod \$46 USD
- Ziploc bags - 50?
- Cooler + ice packs
- Pruners
- Scissors

5 Things to bring with us:

- Flatbed scanners - 2x
- Computers with scanner software - Deirdre's + one other?
- Graduated cylinder
- Portable scale?