

Maize Guide (BioCroField)

Notes: Litter traps have been ineffective at capturing senesced tissue from this crop, so they are not used. Because no litter traps are used, harvest record sheets for this crop should not contain any entries in the “litter trap component” section, and the “Litter trap area” box should be left blank.

Harvesting and Partitioning Maize Tissue

- **Essential Tissue Types:** Every harvest should include above-ground biomass, leaf, stem, and root tissue. When the plants are young, this might be all of the tissue types. As the plants enter reproductive stages, additional types might appear.
- **Plant Litter:** Any senesced tissue still attached to the plants themselves is considered to be “plant litter.” Plant litter should be included when collecting above-ground biomass samples. Plant litter from partitioned plants should be placed in a bag labeled “litter” or “plant litter.”
- **Roots:** Brace roots typically appear as the plants get older. The main stem should be cut just above the lowest set of brace roots. It may be necessary to also cut through some brace roots if there is a second set above the lowest set. Anything below the cut is considered to be root tissue.
- **Leaves:** Leaves should be cut or torn at the leaf collar, or otherwise where they meet the main stem.
- **Ears:** Large fertilized ears can be simply snapped off the stem. Unfertilized ears are also harvested. They can be difficult to find if they have not emerged or produced silks, but they can nevertheless be cut out of the stems.
- **Tassels:** The stem should be cut just below the first flowers of the tassel. Tassels harvested this way include a portion of the main stem, but its mass is generally negligible and can be ignored.

Weighing the Partitioned Maize Tissue

- **Roots:** Roots are cleaned in the field before drying, but they are usually still a bit dirty. Before weighing the roots, remove any soil or other obviously foreign material. A small screwdriver or a capped pen is often useful for this purpose. Be careful, and try to avoid damaging the roots themselves, because any small pieces that fall off might be difficult to recover and weigh.
- **Plant Litter:** The plant litter should be sorted into components as necessary, discarding any soil or foreign material. Each component should be separately weighed and recorded in the “partitioned plant components” section of the harvest log sheet. The name of these components should clearly indicate they represent litter; for example, **Leaf Litter**.
- **Stems:** No special instructions. Just weigh them!
- **Leaves:** No special instructions. Just weigh them!
- **Ears:** Unfertilized ears should be recorded as **Unfertilized Ears**. Fertilized ears should be weighed intact first (including husks) and recorded as **Ears**. Next, the fertilized ears should be husked, and the husks should be weighed. Finally, if possible, the kernels should be removed from the cobs and weighed. Record these weights as **Ears - Husk**, **Ears - Kernels**, and **Ears - Cobs** to indicate that they were derived from the intact ears.
- **Tassels:** No special instructions. Just weigh them!
- **All Possible Components:** The following is a list of all possible tissue components that should be weighed, although not all of them will be present at every harvest: Roots, Stems, Leaves, Tassels, Unfertilized Ears, Ears, Ears - Husks, Ears - Kernels, Ears - Cobs, Leaf Litter (plant), Tassel Litter (plant)
- **Unclear Cases:** If you are unsure about anything while weighing, please contact the responsible person listed on the harvest record sheet.