

Grain Sorghum 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 Grain Sorghum 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.
- **Panicles:** The stem should be cut just below the first flowers of the panicle. Panicles harvested this way therefore include a portion of the main stem; this can be separated during weighing. When the plants are in the boot stage, it may be possible to cut out the panicle even though it has not yet emerged.

Weighing the Partitioned Grain Sorghum 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!
- **Panicles:** Panicles should be weighed intact first and recorded as **Panicles**. Next, if possible, the grain should be threshed (removed from the rest of the panicle) and weighed separately. Threshing can be done manually by repeatedly squeezing the panicle. Then, the small panicle branches and the attached spikelets should be removed and weighed separately. Finally, the remaining stem section should be weighed. Record these weights as **Panicle - Grain**, **Panicle - Flowers**, and **Panicle - Stem** to indicate that they were derived from the intact panicles.
- **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, Panicles, Panicles - Grain, Panicles - Flowers, Panicles - Stem, Leaf Litter (plant)
- **Unclear Cases:** If you are unsure about anything while weighing, please contact the responsible person listed on the harvest record sheet.