

# Soybean Guide (BioCroField)

**Notes:** This crop produces large quantities of litter, so litter traps are always used.

## Harvesting and Partitioning Soybean 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.”
- **Litter Trap:** Any senesced tissue in the trap should be placed in a bag labeled “trap litter” to distinguish it from the “plant litter” described above. The trap might not contain any litter when the plants are young.
- **Petioles:** For BioCro purposes, petioles are considered to be part of the stem, even though they are anatomically part of the leaf. We do this because the “leaf” tissue component of a BioCro simulation only refers to photosynthesizing tissue, and petioles are not expected to contribute much to total canopy photosynthesis.
- **Flowers:** Flowers are treated as a distinct tissue type when pods have not appeared yet. Once pods have appeared, any flowers should be grouped together with the pods.

## Weighing the Partitioned Soybean 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**.
- **Litter Trap:** The litter trap contents should be sorted into components as necessary, discarding any soil or foreign material. Each component should be separately weighed and recorded in the “litter trap components” section of the harvest log sheet.
- **Stems:** No special instructions. Just weigh them!
- **Leaves:** No special instructions. Just weigh them!
- **Pods:** Pods should be weighed intact first and recorded as **Pods**. Then, if possible, they should be shelled so the seeds and shells can be weighed (and recorded) separately. This may not be possible if the pods are too small. Record the seeds and shells as **Pods - Seeds** and **Pods - Shells** on the harvest record sheet to indicate that the seeds and shells were derived from the pods.
- **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, Flowers, Pods, Pods - Seeds, Pods - Shells, Leaf Litter (plant), Stem Litter (plant), Pod Litter (plant), Leaf Litter (trap), Stem Litter (trap), Pod Litter (trap)
- **Unclear Cases:** If you are unsure about anything while weighing, please contact the responsible person listed on the harvest record sheet.