This protocol is designed for corn, soybeans, or cotton yield in the CROWN on-farm trial network, this is to be done at crop maturity. For questions contact: saseehav@ncsu.edu

# At Crop Maturity:

1. Harvest crop for yield
2. Remove soil water sensors
3. Retrieve last decomposition bags
4. Communicate with grower about remaining field management questions and access to yield monitor data (if you have taken GPS points)

# Materials

For Field Harvest

* 10 ft (CORN) or 5 ft (SOYBEAN, COTTON) sections of pvc poles, for measuring harvest length
* Tags
* Pre-printed Barcodes for Yield (8 per site)
* 5 gallon buckets (for corn ears)
* Heavy cotton pillowcases or large paper bags
* Clippers or shears (for soybeans)
* Shovels and post pullers for sensor removal

For Back in the Lab

* Drying oven for corn ears or grain if needed
* Moisture tester
* Scale
* Sheller, thresher, or cotton gin

Example Label:

# For Corn Yield

1. In Subplot 1, find TWO **10 ft rows** (ie: near water sensors) that represent corn stands in Subplot 1.
2. Remove shucked ears from all plants inside each 10 ft section and place into bag (5 gal bucket lined with bag for easy corn ear tossing). Tag each harvested row, separately.
3. Count the **corn populations in each 10 ft section and record** on data sheet. (I like to write on the tag and type into data sheet when scanning the barcode for weights later)
4. Repeat for all treatments and subplots at the site.

At harvest in Field Reminders: Measure your crop row spacing, and check to be sure your row spacing is recorded in the “Field Management” Tab under “Crop Row Spacing” and/ or record it in the yield. Remove soil moisture sensors, any flags or remaining research materials. Don’t forget the gateway at the edge of the field.

1. Transfer bags of cobs to dry in oven if necessary, or to store. (See Notes about drying corn)
2. Shell corn and record weight per each row, and moisture at least twice and test weight.
   1. See Datasheet Tab: “Yield”
3. Record stand counts per row in Datasheet Tab: “Stand Count”

Notes about Drying Corn:

* 1. For Those Using Grain Moisture Meters (id: Dickey John) Do not dry the corn in a dryer if % moisture is 16% or lower. If you do dry, use minimal heat (95-100 F) or just fans on drier. Excessively drying the corn will cause the sheller to leave the nibs on the cob and underestimate yield.
  2. If you do not have a Grain Moisture Meter: If you dry at high heat, dry to 0% moisture and record moisture as 0%. Do not back calculate to corn moisture levels.

# For Soybean Yield

1. In Subplot 1, find TWO **5 ft rows** (ie: near water sensors) that represent soybean stands in Subplot 1.
2. With hand shears, cut all plants inside each 5 ft section and place into bag. Tag each harvested row, separately.
3. Repeat for all treatments and subplots at the site.

At harvest in Field Reminders: Measure your crop row spacing, and check to be sure your row spacing is recorded in the “Field Management” Tab under “Crop Row Spacing” and/ or record it in the yield. Remove soil moisture sensors, any flags or remaining research materials. Don’t forget the gateway at the edge of the field.

1. Transfer bags to dry in an oven only if necessary or to store.
2. Thresh 5 ft soybean rows, record bean weight per each row, and moisture at least twice and test weight.
   1. See Datasheet Tab: “Yield”

# For Cotton Yield

1. In Subplot 1, find TWO **5 ft rows** (ie: near water sensors) that represent cotton stands in Subplot 1.
2. Pick the bolls of all plants inside each 5 ft section and place into bag. Tag each harvested row, separately.
3. Repeat for all treatments and subplots at the site.

At harvest in Field Reminders: Measure your crop row spacing, and check to be sure your row spacing is recorded in the “Field Management” Tab under “Crop Row Spacing” and/ or record it in the yield. Remove soil moisture sensors, any flags or remaining research materials. Don’t forget the gateway at the edge of the field.

1. Weigh Bolls per 5 ft. Gin 5 ft cotton rows, and weigh lint per each row.
2. See Datasheet Tab: “Yield”

Notes about Cotton:

1. The database collects yield as percent lint currently. To get this number you will have to weigh bolls with seed and then lint after ginning.
2. THIS WILL NEED FURTHER DISCUSSION