

## Measuring In-Field Loss

This section outlines a recommended step-by-step process of how to sample and collect the appropriate input data on food loss to report in the Blonk questionnaire.

The scope of this method starts from the point at which crops are "mature and ready for harvest." It enables growers and others to collect data on the amount of crop that is left in the field after harvest, is never harvested (i.e., "walked-by"), or is discarded in post-harvest undertakings on farms (for example: in storage or packhouses).

Food loss includes any product left in the field once it is ready for harvest. Please note that losses that arise before a crop is ready to harvest are out of scope. For example, if a plant is lost during planting or maturation, these are considered outside of scope.

For the in-field stage, data can be collected through either sampling or direct weighing.

*This document is based on the Global Farm Loss Tool information provided by World Wide Fund for Nature (WWF). For more information, please visit <https://www.globalfarmlosstool.org/>.*

## In-Field Sampling Method

**Step 1:** Identify three rows (or other areas) representative of the field.

**Step 2:** Go into the field, mark the rows to be sampled (or selected number of trees to measure around), and harvest all crop not picked (or dug up). For each row (or other area being sampled):

- Measure the length of row or area from which to remove (e.g., pull off, dig up) all the remaining product. For many crops, a length of 50 feet/15 meters is robust enough. Select a relevant length for your sampling to be representative. For tree crops, a recommendation is to measure a 10-foot by 10-foot plot under at least 3 representative trees.
- Mark the beginning and end of the row or area with a flag/cane or any marker that helps the measurer determine the sample area.
- Keep track of the width of the area sampled (e.g., row spacing) as this data will be important for extrapolating the sampled area to the entire field.
- Harvest each row or tree, harvesting all the product left on the plant (or rejected and in the furrow, or still underground), no matter the reason or condition. Even diseased, decayed, overly mature, sun-scalded, or damaged vegetables, fruits, or nuts that remain attached to the plant should be harvested for this measurement; that information will be important for calculations. Put samples from each row in a separate container.

The following photos show two examples of these steps:



Measuring and marking



Collecting unharvested



Product left after harvest



Measuring and marking rows



Collecting unharvested product



Product left after harvest

**Step 3:** Determine what qualifies as either “not harvested” or “harvested” (definition of categories below for more information)

### Definition of categories

**Not harvested:** Crops left in the field because it is not considered fit for human consumption.

- This may be due to damage (e.g., by pests, weather), disease, or decay.
- This may also be due to the crops not meeting the buyer’s current quality specifications, even though they are still considered edible for human consumption. This refers to ‘quality’ issues, rather than edibility (e.g. too large or too small, cosmetic blemishes, wrong colour)

**Harvested:** All mature crops that are harvested.

- All crops harvested because they are marketable for direct human consumption, used for an ingredient for processed products for human consumption (e.g. frozen, canned, puree, cut), used for donation (e.g. food banks), used for animal feed, used for bio-based materials (e.g. to produce packaging material, soaps, cosmetics), used for biogas (anaerobic digestion), used for composting, used for application to land, used for incineration, used for landfill.
- This includes crops that are harvested, yet are discarded in post-harvest undertakings on farms (e.g. processing, in storage or package houses).

**Step 4:** For each row (or other area), sort samples collected into separate containers according to each of these 2 categories: harvested or unharvested.

**Step 5:** Weigh the sampled product as sorted by the 2 categories, keeping data from each row separate. When recording the weight, remember to subtract container weight.

**Step 6:** Try and utilize your samples.

**Step 7:** Calculate your harvest percentage by using the following formula:

$$\text{Harvested percentage} = \frac{\text{Harvested amount (kg)}}{\text{Harvested amount (kg)} + \text{Not harvested amount (kg)}} * 100\%$$

## In-Field Direct Weighing Method

If all the crops eventually left in the field or lost have been harvested and weighed, the harvest percentage and the total amounts can be entered into the questionnaire.

With this method, you will similarly need to categorize the loss into the two categories: harvested or not harvested (see definition of categories above).