



# AGROSUS

## Welcome to the **AGROSUS Soil and Weed Sampling Kit!**

This kit provides the necessary tools and guidelines to carry out effective sampling and achieve AGROSUS's goals and objectives.



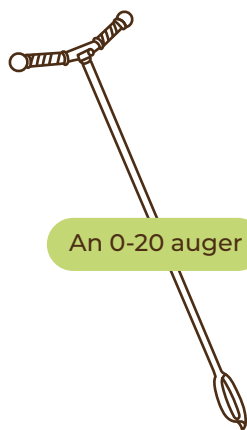
Funded by  
the European Union

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# Soil Sampling Tutorial

## Physical, chemical, and microbiological properties of soil

To sample the physical, chemical, and microbiological properties of soil, we'll need the following equipment:



An 0-20 auger



A spatula



Some bags and rigid containers\*

\*For each composite soil sample, 2 bags (one large and 1 smaller zip) and 1 rigid container are needed.



A shovel



A spoon



A pair of gloves



Pencil and paper



A permanent marker



A cooler and cooling ice plates



Before starting to collect samples, ensure that all equipment is clean and disinfected, otherwise samples may be contaminated.

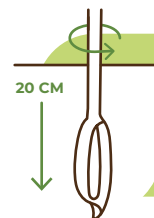
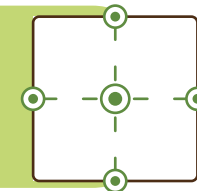


### STEP 1

Use your marker to label all the bags and rigid containers- remember to put a piece of paper with the same label inside each container. This paper must be labelled with pencil, to avoid deletion.

### STEP 2

To make a composite sample at each sampling location, you'll need five subsamples. Select the sampling location, the subsample locations should be two metres apart in each direction, crosswise if possible.



### STEP 3

Start from the central sampling point. Remove any superficial weeds from the soil if necessary and insert the auger until 20 centimetres of soil. Put the soil into the composite bag.

### STEP 4

Repeat the procedure at each subsampling point. Collect all soil subsamples in the same bag.



### STEP 5

Homogenise thoroughly by hand the soil and use the spoon to scoop the samples into the rigid container and the zip bag. Store the sample for biological analysis in the cooler for express delivery.



Store the sample for physicochemical analyses at room temperature. Soil both from the composite sample and rigid container must be dried at room temperature before shipping. Ensure that the soil is dry before sending the sample, otherwise spread it on newspaper (or similar) for a few days until it is completely dry.

Note for soil aggregates stability (rigid container sample): In sampling, if the soil (especially clay soils) is too wet then soil aggregates cannot be sampled. Aggregate sampling must be performed later when soil is almost dry.

# Soil Sampling Tutorial

## Bulk density

To take a bulk density sample, we'll need the following equipment:



A 0 - 5 cm bulk density cylinder



A permanent marker



A spatula



A hammer



Some bags



A pair of gloves



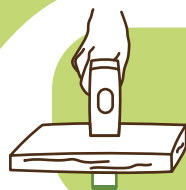
A wooden board



Pencil and paper



*Before starting to collect samples, ensure that all equipment is clean and disinfected, otherwise samples may be contaminated.*



### STEP 1

Remove the weeds at the top layer of the soil. Place the cylinder with the sharp end down. Place the wooden board over the cylinder and tap it with the hammer until the cylinder is completely sunk into the ground.



### STEP 2

Remove the soil from around the cylinder with a shovel and remove the cylinder with a spatula to prevent loss of soil.

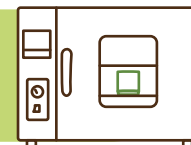


### STEP 3

Ensure that the cylinder is completely filled with soil, removing any soil from the outside and top of the cylinder. Place the sample in a labelled bag. Remember to put a piece of paper (with pencil) with the same label inside each container.

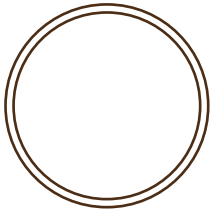
### STEP 4

Once in the laboratory, dry the sample in an oven at 105°C for 24 hours and weigh for calculations.



# Weed Sampling Tutorial

To take a weed sampling, we'll need the following equipment:



A hoop



Garden trowel



Plant labels



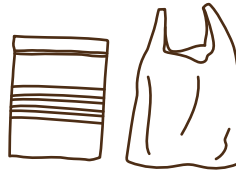
A pair of gloves



A ruler



Pruners



Some bags



The ideal time for weed sampling is at least once a month, depending on the crop. It is very important to evaluate the weeds and do the weed sampling before weed control is carried out because if weeds have been removed you could not evaluate any weeds. For example, if you are using mechanical control periodically, evaluate the weeds before it is done or before the herbicide is applied in the case of conventional weed management.

In each plot, visually evaluate the total percentage of weed coverage. Then, visually evaluate the percentage of monocot and dicot weeds separately.

Identify the main weeds in the plot. Identify the family to which the weed belongs to and the weed species.



## STEP 1

To avoid collecting all the weeds in a plot, mark a square of about 1x1 metres in each plot or use a hoop. Only take samples of the weeds present in this area. You can also place a mark in some representative part of the plot to place the hoop or the square centered always on this same point marked.

## STEP 2

Remove the weeds, taking care not to damage the roots.



## STEP 3

Measure the fresh weight of the collected weeds. Also weigh the monocotyledonous and dicotyledonous weeds separately.



## STEP 4

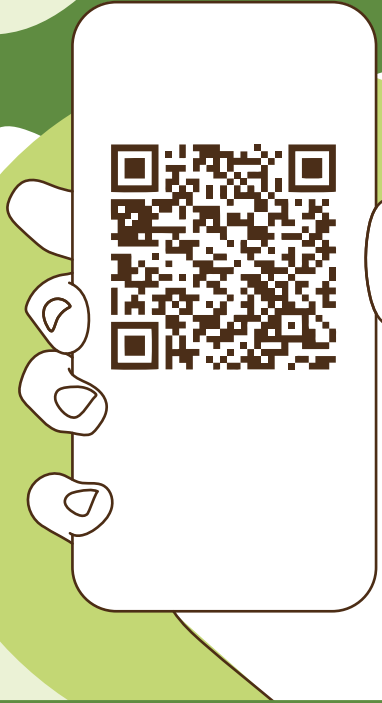
Measure aerial parts and root length separately for 5-10 weeds representative of each weed species sampled (only for the most abundant species sampled). If it is not possible to measure root length at least measure aerial part length.



## STEP 5

Spread the collected weeds for drying and, when dry, measure the dry weight of the weeds.





**Are you still in doubt?  
Check out the video tutorials.**

**STAY TUNED!**



[www.agrosus.eu](http://www.agrosus.eu)