TDE-C01 | Agricultural Soil Sampling

TrustyFood – Lands of Excellence | TDE Operating Procedure | 10 November 2026

Purpose. To obtain a composite sample representative of the actually cultivated soil layer within a homogeneous agricultural unit, for the analyses specified in protocol TDE-P01. This procedure does not replace targeted investigations of local anomalies or applicable statutory requirements.

1. Sampling unit and portions

Element	TDE operating criterion
Standard unit	Pedologically and agronomically homogeneous area of up to approximately 5 hectares.
Individual increments	25 subsamples distributed representatively throughout the unit.
Collected mass	Approximately 50 kg in total (depending on the equipment and soil).
Heterogeneous areas	Divide into separate units; use soil maps and land-use history where appropriate, including for areas smaller than 5 ha.
Localized anomalies	Do not mix them into the standard composite; assess them through separate sampling if documented or observed.

2. Sampling depth

Sample from the surface down to the lower boundary of the cultivated soil layer actually mixed by tillage, as identified directly in the field. Depth depends on the soil, crop and agronomic practice: often around 0–30 cm or 0–40 cm, but these are not fixed intervals. Record the actual depth. All subsamples in a composite must represent the same horizon and depth interval.

For untilled soils, permanent grass cover or conservation tillage, define the sampling horizon according to actual land management; do not assume that a plough pan is present. Avoid incorporating soil beneath the selected layer.

3. Collection, mixing and quartering

Distribute the 25 points representatively across the unit, avoiding clustering near boundaries unless justified. Clean equipment between sampling units to prevent cross-contamination.

Combine the subsamples on a sturdy, new, clean sheet of virgin polyethylene, preferably dedicated to each unit (indicative dimensions 3 × 3 m). Gently break up clods, thoroughly mix the entire mass and reduce it through successive quartering to the quantity required for testing. Retain the fine fraction in the composite; avoid loss through wind, adhesion to the sheet or handling.

The polyethylene sheet is a practical TDE choice: before the campaign, check its compatibility with the limits of quantification and methods used for legacy pesticides, PCB and PCDD/F,

including a process blank if requested.

4. Containers, storage and transport

Determination	Container and precautions
Organic contaminants (PCDD/F, PCB, legacy pesticides)	Clear glass preserving jars, new or adequately cleaned and dry, with undamaged lids; protect from light. An aluminium-foil liner is not mandatory.
Metals and pH	Separate portion in a clean container suitable for the method, to be agreed with the laboratory.
Transport	Closed and labelled jars, kept upright in an insulated cooler with cold packs; target approximately +4 °C, avoiding freezing and direct contact with ice.
Delivery	Preferably within 24 hours. Final holding times, quantities and conditions follow the laboratory's analytical specifications.

5. Identification and traceability

For each sample record: unique ID; date and time; locality and coordinates/site plan; area; essential soil characteristics; crop and cultivation practices; actual depth; 25 sampling points or distribution diagram; sampler; containers, transport temperatures and times; field observations and anomalies excluded from the composite. Retain photographs where available.

6. Decision rule and representativeness limits

A composite sample characterizes the average material in the cultivated layer of the homogeneous unit. It cannot, by itself, rule out elevated concentrations in isolated spots; these require separate checks. Analytical thresholds, assessment rules and geogenic exceptions remain those of the dedicated TDE-P01 documents and are not modified by this procedure.

Status: project operating procedure. Before use, confirm with the laboratory the minimum quantity for each analytical group, the suitability of containers and sheeting, and the stability/storage conditions applicable to the methods actually used.