

GREAT-LIFE Protocol for Collection of Pit Latrine Samples for Metagenomics Analysis

Materials

- Personal protective equipment (PPE): gloves, face mask, goggles, lab coat
- Sterile sampling containers (50 ml tubes)
- Standard soil auger or extendable sampling pole for deeper latrines
- Ethanol (70%) for sterilization
- Cooler with ice packs
- Labels and permanent marker
- Sealable plastic bags
- Waste disposal bags
- Hand sanitizer
- Sampling record sheet

Equipment

- Standard soil auger or sampling pole if deep sampling is required.
- Sterile forceps or tweezers
- Clean plastic tarp or mat (to place equipment on)

Site Preparation and Safety

1. Wear PPE: Before beginning sampling and ensure all PPE is worn correctly to protect against potential pathogens.
2. Site Assessment: Inspect the latrine structure and surrounding area for safety hazards.
3. Lay out the plastic tarp or mat to place the equipment and samples.

Sampling Procedure

1. Label Containers: Clearly label each sterile sampling container with the date, time, and sample ID.
2. Sterilize Tools: Wipe down the auger with 70% ethanol before starting.
3. Sample Collection:
Use the auger for material with a solid consistency or a sterile 150 ml plastic container attached to the soil auger for samples with a liquid consistency. Randomly collect samples at the surface to an approximate depth of 15-20 cm from multiple areas of the latrine pit surface in an approximately W-shaped path.



For deeper pit latrines, use an extendable sampling pole to collect samples.



4. **Transfer Sample:** Place the collected material into the sterile containers. Avoid overfilling to ensure the container can be sealed properly.
5. **Seal and Store:** Immediately seal the containers and place them in the cooler with ice packs to maintain sample integrity.
6. **Document Samples:** Complete the sampling record sheet and document the time, location, and conditions of sampling.

Post-sampling Procedure

1. **Sanitize Equipment:** Clean all reusable equipment with 70% ethanol.
2. **Dispose of Waste:** Place used gloves, wipes, and other disposables in the waste disposal bags. Seal and dispose of them according to biohazard protocols.
3. **Sanitize Hands:** Use hand sanitizer after removing gloves and before handling any personal items or equipment.
4. **Transport:** Ensure the samples remain cold during transport to the laboratory by using a cooler with ice packs.