

GUIDELINES - FOR PRESERVATION OF FIELD-COLLECTED FALL ARMY WORM (FAW) SPECIMENS FOR LATER DNA WORK



The most frequently use method for preserving biological specimens for molecular work is immersion of live specimens in 95-99% ethanol (EtOH). Ethanol is practical for use in the field. It serves as both a killing agent and preservative.



Figure 1: Ethanol-tissue ratio



Figure 2: Specimen ready for dispatching

SAMPLING

The following measure should be taken when sampling/collecting FAW specimens:

- Always use laboratory quality non-methylated ethanol (95-99%); also referred to as absolute or analytical grade ethanol.
- Field-collected specimens (larvae and/or adults) can be placed directly into ethanol. Sample vials can be prepared in advance before going to the field.
- Collection of samples should ideally never be done with bare hands, as it could be a source of contamination. Use latex gloves and/or forceps when collecting/handling specimens in the field. Always sterilise collecting equipment between sampling sites.
- Sample vials or tubes should be made of good quality plastic with caps that are leak-proof. Avoid using glass vials or tubes.
- The volume of ethanol should be considerably greater than that of the specimen/s. The recommended ethanol-tissue ratio should exceed 5:1 (see figure 1).
- Replace the ethanol during the first 24-48 hours of preservation. For best results repeat two to three times.
- Specimens, once collected into ethanol, should be stored at low temperatures (i.e. in a freezer or fridge) until they are ready to be dispatched.
- It is vital to label material adequately in the field. Specimens without label data are of no scientific value. Essential label information should include: GPS coordinates of the locality or site, collection date, name of collector/s, and host plant information (preferably the scientific name)
- Use good quality paper for labels. Locality labels should always go on the inside of the sample vial or tube. Inscriptions on labels should be hand written in pencil. Avoid placing labels on the outside of the vial or tube.

DISPATCHING

The following measure should be taken when dispatching specimens:

- Reduce the volume of ethanol. Specimens can be transferred to smaller vials with the minimum of liquid, or specimens can be secured with a plug of cotton wool with damps of ethanol (see figure 2).
- Vials should be sealed in non-perforated plastic bags (e.g. zip lock bags) to prevent leakage or evaporation. Double-bag specimens as an extra precaution. Wrap bagged samples in shock-resistant material (e.g. bubble wrap) before packing them into a sturdy posting box. Avoid padded envelopes as they provide little protection.

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