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Supplementary Material 1

ADAPTATION OF THE ASSEMBLY PROTOCOL FOR CT/SCAN

The assembly protocol used by Leme *et al.* (2020) and Pedersoli *et al.* (2022), which involves fixing the material on a metal stub using UHU Epoxy glue, is not applicable in the industrial tomograph model Phoenix v|tome|x S240 available at "Centro para Documentação da Biodiversidade/FFCLRP". This is because, to guarantee high resolution for small samples, it is necessary to get the sample as close as possible to the X-ray source tube. To this end, the material must be taller than the support, as the support has a wide base that collides with the X-ray tube, preventing any sample from being positioned too close to the support base. The VG Studio 3.0 (Volume Graphics) was used to visualize the scan data.

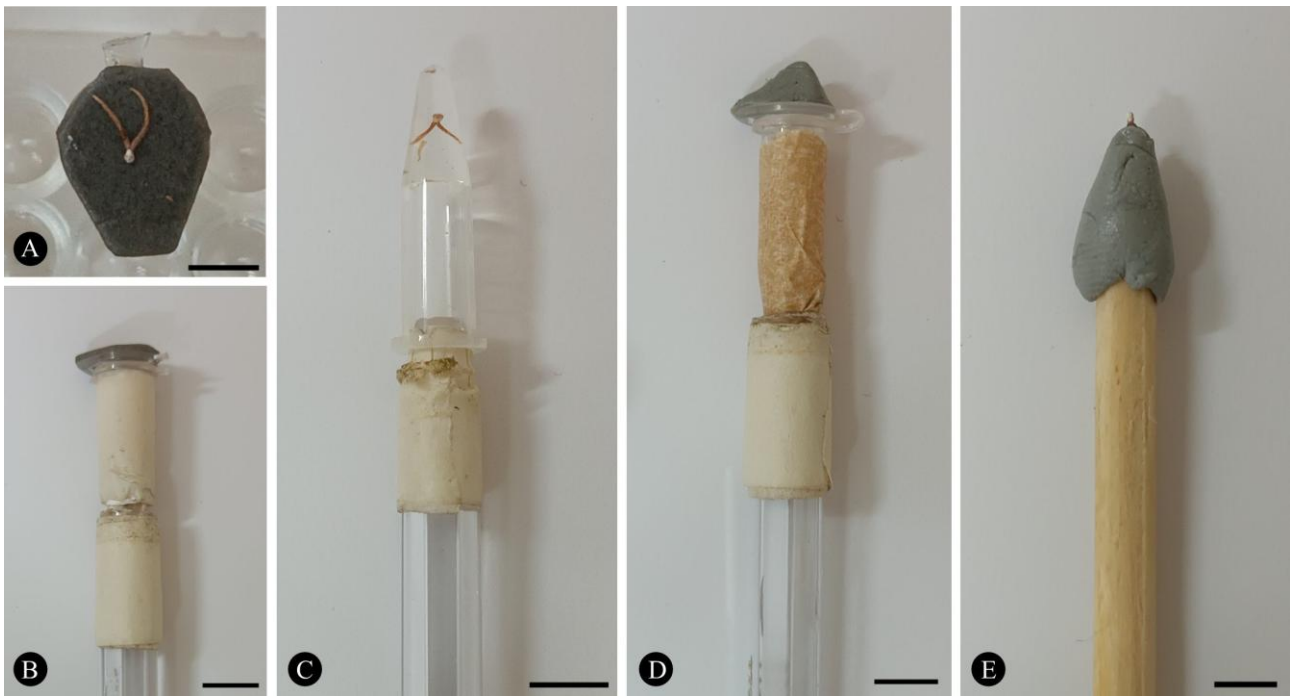
Therefore, it was necessary to develop another assembly protocol for the analyses. During this process, various assembly methods were tested using materials available in the laboratory, and their results were analysed using the AmiraMesh program for image visualisation. The first method involved placing the flower on a 0.6 ml Eppendorf tube, secured with double-sided wall tape (Suppl. Mat. 1A), and then placing the Eppendorf tube on top of a pen tube for greater elevation in the machine (Suppl. Mat. 1B). This assembly resulted in a low-quality image with structure overlap because the material vibrated during tomography, impairing the quality of 3D reconstruction and section visualization.

Since the main issue with the first assembly was the material vibration in the machine, a second attempt was made. The contrasted material was dehydrated in an ethanol series with 1% phosphotungstic acid to 100% alcohol and then embedded in pure Leica historesin inside a 0.6 ml Eppendorf tube, without going through the resin infiltration process. This material was then placed

on a pen tube (Suppl. Mat. 1C) and analyzed in the tomograph. In this test, the material did not vibrate or move during analysis. However, the resulting images showed little contrast between the internal structures of the flower, making it impossible to visualize the vascular bundles.

A next attempt was made using epoxy resin (Durepoxi) to fix the dry material at a critical point on a 0.6 ml Eppendorf tube, supported by a pen tube (Suppl. Mat. 1D). The resulting images showed good quality with no movement or vibration. To bring the sample even closer to the X-ray source, the Eppendorf support and pen tube were replaced with wooden barbecue skewers (Suppl. Mat. 1E), which could be positioned even closer to the source due to their smaller radius. Due to the closer proximity to the X-ray source, this method generated the best image resolutions and was established for the experiments of this study.

This method has a particularity that should be highlighted. Epoxy resin is an extremely radiodense material due to the presence of elements with large atomic nuclei. Therefore, the part of the material surrounded by the resin cannot be observed in the tomography. It is recommended that during the dissection of the material, a non-relevant part of the tissue be preserved to be enveloped by the resin and serve as a support for the material. In this case, the stigmas were enveloped by the resin and used as support for the sample, allowing visualization of the ovary only.



Supplementary figure 1. Assembly protocols for tomography. **A-B.** Material mounted on wall tape in an Eppendorf tube supported by a pen tube. **C.** Material embedded in historesin, in an Eppendorf tube, supported by a pen tube. **D.** Material fixed with epoxy resin in an Eppendorf tube supported by a pen tube. E: Material fixed with epoxy resin on a wooden skewer. Scales: A = 0.5 cm; B-D = 1 cm; E = 0.5 cm.