

Orientation Tips For Plant Tissue Resin Embedding

Mayo, G.¹ and O'Donovan, L.¹

¹ Adelaide Microscopy, Australia

Gelatine capsules, which are commonly used in resin embedding, can restrict the orientation of plant samples in the final block. We use a simple shape modification of gelatine capsules for quick, easy transverse orientation of plant leaf, stem and high pressure freezing planchettes. This modification results in a significant reduction in the amount of trimming required.

For more difficult to orient samples such as floral structures, or delicate tissues such as root hairs, we use 1% agarose pre-embedding for protection during processing and/or to allow accurate transverse orientation in both horizontal and flat molds. Agarose did not prevent penetration of reagents in any of the resins tested (Procure Araldite, Spurr's resin, TAAB, LR White and Technovit 7100). In the final section, agarose is invisible under light microscopy, and for electron microscopy it may be seen as a fine external network around tissue depending on contrasting stain.

The method reduces the need for time consuming re-orientation of polymerised blocks by cutting and gluing, and the use of flat molds where a resin requires exclusion of oxygen via Aclar, Parafilm or nitrogen atmosphere (e.g. LR white, Technovit 7100).