

## Cellulose extraction from wood for analysis of carbon isotopes

**Reference:** Macfarlane et al. 1999. A rapid and simple method for processing wood to crude cellulose for analysis of stable carbon isotopes in tree rings. *Tree Physiology* 19: 831-835

### Approximate yield of method

Yield of cellulose from wood of *Eucalyptus globulus*, *Pinus pinaster*, *Pinus radiata* and *Pseudotsuga menziesii* is approx. 30-40%. If yield is significantly greater than this (e.g. >45%) you more than likely have incomplete extraction, i.e. starting mass was too large for the volume of diglyme and HCl. To remedy this situation, either reduce the mass of sample or increase the volume of reagents.

### Method:

1. Weigh no more than 100 mg of dry, finely ground plant tissue into a 2-mL eppendorf tube with locking cap
2. Add 1.00 mL of diethylene glycol dimethyl ether (diglyme) and 0.25 mL 10 M HCl.
3. Incubate in a water bath at 90°C for 60 min (longer OK). Samples should be shaken during incubation.
4. Cool, centrifuge and discard the supernatant.
5. Wash the pellet three times each with 1 mL methanol and 1mL hot DI water.
6. Dry the residue (80°C) and weigh into tin capsules