

SEED BANKING, TISSUE CULTURE AND CRYOSTORAGE

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Ex-situ conservation involving seed banking, tissue culture and cryostorage are important components of plant conservation, with particular focus on the South West and mining-intensive regions such as the Pilbara and Midwest. This program provides an insurance policy for Western Australian plants, by securing collections of seeds in safe and secure facilities. By keeping the seeds at purpose-built facilities in a suspended state at low temperature and humidity, they can be maintained for hundreds of years. Living collections of tissue culture material of critically endangered species are also maintained for species whose seed cannot be stored or does not readily germinate. Cryostorage of material at low temperature is also undertaken, particularly for orchids and their fungal symbionts as this has proven to be the most effective means of maintaining these species out of the wild.

Research on seed storage behaviour and longevity provides a framework for managing and curating large and diverse seed collections. Research into seed germination methods has resolved optimal conditions for seed germination of hundreds of Western Australian species. Seed collections, living collections and tissue obtained from cryostorage are working collections as they are used to generate germplasm for establishing plants through translocation and for research programs.

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