



PRODUCT REFERENCE

Herbarium specimens

What are herbarium specimens?

Herbarium specimens consist of preserved plant, algae or fungi specimens and relevant associated data. Herbarium specimens are formally incorporated into a scientific reference collection within a herbarium, and may be borrowed or loaned out by an institution listed in the Index Herbariorum for scientific research purposes.

Why are herbarium specimens so special?

Herbarium specimens are an important resource used in the research of plants. They provide a permanent record of the occurrence of a species at a particular place and time.

Herbarium specimens are an important tool for researchers in herbaria who are involved in:

- discovering new species
- measuring and describing plant parts to help distinguish differences between species and identify them
- using DNA to examine evolutionary relationships
- studying plant classification and naming, where plants are found, and their conservation and ecology.

Herbarium-based research can be very useful; for example, it has improved understandings of particular weed and pest problems and contributed to their management.



Herbarium specimens may be very old and can be the result of years or even centuries of research. As herbarium specimens may represent a new species and discovery, they are very unique and not able to be replaced. They are an invaluable resource for scientists, conservationists, land managers and historians.

Creation of herbarium specimens

During field expeditions specimens and their associated data are collected and recorded. This may involve:

- taking cuttings or whole plants with leaves, spores, flowers and/or fruit



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 Water and the Environment**

- putting the leaves in silica gel for DNA extraction
- pickling flowers/fruits in ethanol.



Herbarium specimens are collected and then databased, labelled, mounted and packed (using archival materials), and finally stored in boxes, packets or on shelves.

Herbaria

Herbaria are like a museum or library for plants. They are a collection of preserved plants, algae and fungi stored, catalogued and arranged systematically for study.



Herbarium specimens sent to Australia

Once incorporated into a herbarium, specimens do not leave the institution, with the exception of officially sanctioned loans and exchanges to kindred institutions. The loan programs enable researchers in other institutions and countries to study specimens without having to travel and conduct field trips. Additionally, the lending/exchanging of specimens allows visiting scientists to access the collections.

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Index Herbariorum

Almost every country has one or more herbaria. These can be located in government departments, universities and other institutions. There are approximately 3000 herbaria in the world, managing approximately 350 million specimens.

The [Index Herbariorum](#) is a global listing of herbaria. It contains details on a herbarium's physical location, contents, founding date and contact information etc. Institutions listed in the index impose tight controls on access and handling to ensure minimum physical damage to their specimens.





Risk mitigation

Institutions employ a number of methods designed to protect the specimens and ensure they are available for future study, including:

- ensuring the building is secure with access restricted to staff, students and approved visitors
- controlling the entry and exit of people and materials, such as paper, in order to prevent pests entering the building
- the use of climate control to assist in controlling mould and preventing the survival of insects
- the implementation of Integrated Pest Management procedures, for example:
- chemical treatment of buildings
- managing the handling and movement of materials
- freezing specimens at -18°C every time they enter the herbarium
- no contact with fresh or unprocessed material.

Due to the often fragile and irreplaceable nature of herbarium specimens please ALWAYS contact the department for advice if you are unsure if import requirements can be met.

The above information has been authored in collaboration with the Managers of Australasian Herbarium Collections. All images above have been provided by the Managers of Australasian Herbarium.