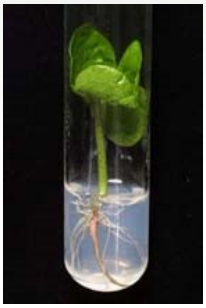
Harold L. Lyon Arboretum's Hawaiian Rare Plant Program

Doing our part to preserve Hawai'i's unique and endangered flora...

The Lyon Arboretum Hawaiian Rare Plant Program (HRPP) utilizes micropropagation, seed banking and greenhouse propagation as horticultural tools for plant germplasm conservation. The objectives for this project are to (a) prevent further extinction of native Hawaiian plant species and Polynesian introduced crop plants, (b) propagate plants for approved restoration projects and garden use, and (c) initiate and maintain an *in vitro* germplasm collection of these "critically endangered" Hawaiian plants. Lyon Arboretum's HRPP works cooperatively, in joint conservation efforts with other botanical gardens, various state and federal agencies including the Plant Extinction Prevention Program, the State of Hawai'i Division of Forestry and Wildlife, and U.S. Fish and Wildlife Service, as well as other environmental conservation organizations and land managers.



Micropropagation Laboratory

To date, the Lyon Arboretum Micropropagation Lab has successfully grown over 300 Hawaiian plant taxa using micropropagation techniques. Currently, we house more than 25,000 plants, representing ~200 native plant taxa (of which more than half are federally listed as endangered or threatened). This includes over 50 varieties of Hawaiian kalo. Last year alone, over 1,000 plants were produced via micropropagation for various conservation projects, entailing restoration & reintroduction, research and education, as well as botanical and display gardens and forestry projects.

Seed Conservation Lab

In the Seed Lab, over 13 million seeds are banked, representing more than 500 taxa of native Hawaiian plants (~40% of the Hawaiian flora). Of these collections, over half are federally listed as threatened or endangered. Prior to the establishment of the Seed Conservation Lab in 1995, little was known about the storage life of Hawaiian seeds. However, with our current knowledge, we now know that only about 6% of Hawaiian taxa have recalcitrant (non-storable) seeds, but many of our taxa do require special storage conditions.

We continue to conduct research on new and existing collections, testing viability under different conditions over time, with data for some species that have been stored for up to 20 years. In 2016 we also launched the #OhiaLove Project to collect and bank seeds of ʻōhiʻa (*Metrosideros* species) during the crisis of Rapid ʻŌhiʻa Death.

Rare Plant Greenhouse

The greenhouse receives both vegetative material and seed collected from the wild by partner organizations and individuals. This material is propagated under conventional greenhouse conditions and grown for living germplasm storage or to a size desirable for reintroduction into managed habitat. The greenhouse is also critically important for transitioning laboratory grown plants and cultures from the sterile lab environments and ideal growing conditions to the greenhouse for eventual out-planting back into the wild. .

Harold L. Lyon Arboretum-University of Hawai'i at Mānoa, 3860 Mānoa Road, Honolulu, Hawai'i 96822, Phone (808)-988-0470