ABS-00223

From metacollections to maternal lines: recording data on living collections to support research and conservation

R.A. Sucher[*], A. Wyatt, and I. Jimenez

Missouri Botanical Garden, St. Louis, MO, United States of America

[*]Corresponding author email: rebecca.sucher@mobot.org

Keywords: conservation, data, horticulture, maternal line, meta collection, plant records

Botanical garden living collections serve as the basis for meeting key horticultural, educational, research, and/or conservation objectives in support of their varied missions. For living collections to serve these purposes, they must be well-documented and effectively curated. Accurate and available plant records can support living collection management, including evaluation and planning of *ex situ* conservation projects and programs. Accurate record-keeping starts in the field, where detailed provenance data is initially recorded. Linking collections of wild source material to mother plants or maternal lines, and recording maternal lines at the accession level, allows for detailed tracking of phenotypes, genotypes, controlled crosses, and their progeny. Next, individuals within an accession are inventoried regularly and when individuals die, the cause of death is recorded, allowing for analyses on plant survival as it relates to provenance. When plant material is propagated and cultivated, detailed protocols are recorded, allowing us to share and build our collective horticultural knowledge to conserve species *ex situ* and provide material for reintroduction projects and inform their care. When comprehensive collections are grown and maintained, common garden experiments allow for a better understanding of the phenotypic variation captured in a collection. Lastly, when plants are shared with other institutions for the purpose of meta collection development, these shares are documented and flagged for follow-up to further inform survival analyses. Here, we provide examples of how living collections data extracted from MBG's Living Collections Management System (LCMS) has been used for these purposes and illustrate how to improve plant records quality to allow for future innovative data applications to support research and conservation.