

Anthropogenic impacts result in global species loss. For example, Missouri has lost 99% of its prairie habitat due to farming and urbanization. Fortunately, the Missouri Botanical Garden (MoBOT) is actively preparing for the predicted loss of plant species diversity by creating a seed bank for every native plant species in Missouri to preserve the state's diversity. However, the researchers at MoBOT have not tested which seed storage method (refrigerator or freezer) will result in the highest germination and growth rates of their stored seed. Therefore, it is highly possible that efforts toward longterm seed storage are amassing seeds that are unable to germinate, or have low growth rates. If these seeds are rendered useless due to an improper storage method, then our extensive preservation efforts are no longer applicable. Therefore, we ask the question: how do seed storage methods affect the germination and growth rates of 3 Missouri prairie species (*Helianthus mollis*, *Rudbeckia subtomentosa*, and *Helenium autumnale*)? We collaborated with MoBOT and tested the germination rates of 50 seeds per species per storage method. We transplanted the germinated seedlings and tracked their growth over several weeks. Our results show few differences in the number of seeds germinated between species and seed storage treatments. However, we saw significantly different trends in seedling height through time once the seeds were transplanted. *R. subtomentosa* seedlings that were stored in the fridge were taller compared to the other two treatments and this trend continued through time. In contrast, *H. mollis* and *H. autumnale* seedlings that were stored in the freezer were taller through time. This indicates that while species may not show strong differences in germination ability based on storage treatment, their growth and potential long-term viability do. This provides strong evidence that the most effective storage method for these prairie plants is species-specific.