

Microcompetition: Can You Beat the Weeds?

Note: This experiment has not been fully developed--it is in an early trial stage. If you want to play around with it, please do so--let us know about your experience by sending a note to epp@mhub.facstaff.wisc.edu.

Background

Perhaps one of the biggest challenges in developing a prairie restoration is controlling the weeds. By "weeds" we mean non-native species of plants that are often aggressive, adapted to areas of high disturbance (freshly tilled soil), and have the ability to outcompete prairie plant seedlings. Once established, a prairie has the ability to "hold its own" against invasion of exotic species; but when first planted, it can become overrun by these exotic species.

There are many strategies restorationists employ to give their prairie seedlings a competitive edge, but we have a lot to learn about these dynamics. This experiment will, in a small way, further our understanding of the interactions between prairie and weed seedlings.

Equipment

- Foxtail seed
- Yellow coneflower seed
- Topsoil
- Sawdust
- Sand
- Sugar
- Fertilizer
- Film canisters

For this experiment, use 10 seeds of a common weed species such as foxtail and 10 seeds of *Ratibida pinnata* (Yellow coneflower), a common prairie species. These twenty seeds will be planted in one film canister filled with soil. Your job is to create the soil conditions that will favor your prairie plants over the weed plants. Mix the soil from the provided components (topsoil, sawdust, sand, sugar, and fertilizer). You are to create a soil mix which you feel will get the most prairie plants to germinate and survive against the weeds. Creating your soil mix is up to you, but please write down the recipe.

Did you beat the weeds and create the best conditions for the prairie seed? Record your germination percentage and survival percentage for each species that survived.