

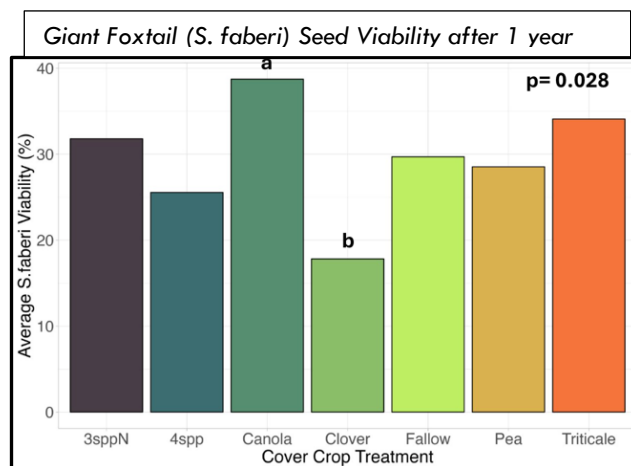
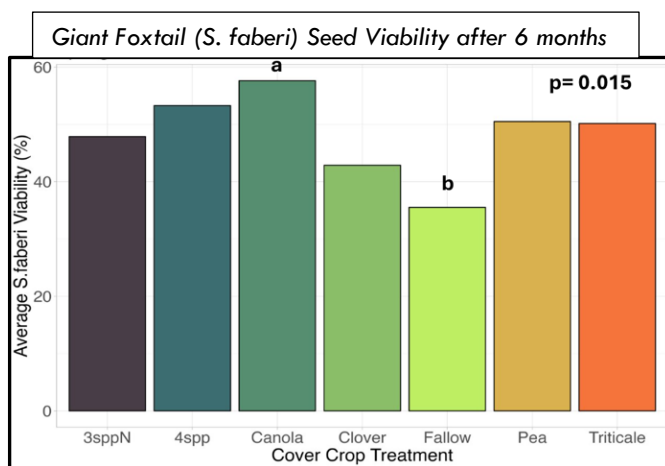
Weeds

Background: Targeting the weed seed bank for weed control is promising because seeds are relatively vulnerable to mortality. Natural aging, predation (insects, mammals, etc.), and soil microbial infection can all contribute to seed mortality in the soil. But **can we manage cover crops to maximize weed seed mortality?**

Experiment: We buried mesh bags filled with weed seeds (Giant Foxtail [*Setaria faberi*] and Powell Amaranth [*Amaranthus powellii*]) in different cover crop mixtures and monocultures to see if certain treatments accelerated weed seed mortality in the soil seed bank.

- Monocultures of Canola, Clover, Pea and Triticale
- 3sppN includes Clover, Pea, Triticale
- 4spp includes Canola, Clover, Pea, and Triticale

Mesh seed bags →



Preliminary Results

- Treatment had a significant effect on Giant Foxtail but not on Powell Amaranth seed mortality in the soil
- Foxtail seeds in **Canola treatments maintained the highest viability**
- Foxtail seed viability in Canola was significantly higher than Fallow (6 months burial) and Clover (1 year burial)

Why it matters: *Economical and ecological weed management is increasingly important for organic and conventional farmers to protect the environment as herbicide-resistant weeds spread.*

Acknowledgements: Funding provided by NE SARE Graduate Student Grant



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