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## Variability in seed dormancy of three Pacific Northwestern grasses

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### Summary

Seed dormancy can deter successful restoration of many native grasses. Variability of seed dormancy and germination was investigated among four populations each of three grass species native to the Pacific Northwest of the United States (*Danthonia californica*, *Festuca viridula*, and *Stipa lemmonii*). Germination enhancements included physical seed scarification, stratification at 5 °C for up to 4 wks, 0.03 and 0.06% GA<sub>3</sub>, 0.2% KNO<sub>3</sub>, 15–25 °C and 10–20 °C alternating germination temperatures, and dark vs. light. Initial dormancy among the populations of each species ranged from 0 to 91% in *D. californica*, 80 to 100% in *S. lemmonii*, and 100% in *F. viridula*. Scarification and GA<sub>3</sub> enhanced germination in *D. californica*, resulting in over 80% cumulative germination and breaking over 90% of dormancy in most populations. For *F. viridula*, four-week stratification and GA<sub>3</sub> enhanced germination, resulting in over 60% germination and breaking over 70% of dormancy. For *S. lemmonii*, scarification and two-week stratification slightly increased cumulative germination, with maximum germination at 17%. None of the treatments were effective at breaking *S. lemmonii* dormancy. Effects of treatments were substantially different among populations for each species. This study emphasizes the importance of characterizing both germination and dormancy for multiple populations of each species.