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25. © Effect of fungicide on Wyoming big sagebrush seed germination. Cox, R. D., Kosberg, L. H., Shaw, N. L., and Hardegree, S. P. *Native Plants Journal* 12(3):263-267. 2011.



Effect of fungicide on Wyoming big sagebrush seed germination

Robert D Cox, Lance H Kosberg, Nancy L Shaw, and Stuart P Hardegee

ABSTRACT

Germination tests of Wyoming big sagebrush (*Artemisia tridentata* Nutt. ssp. *wyomingensis* Beetle & Young [Asteraceae]) seeds often exhibit fungal contamination, but the use of fungicides should be avoided because fungicides may artificially inhibit germination. We tested the effect of seed-applied fungicides on germination of Wyoming big sagebrush at 2 different water potentials (-0.033 and -0.7 MPa) and found that treating test seedlots with fungicide reduced the germination percentage by up to half in some treatments. This effect was greatest at the lower water potential. We found that the fungicides were successful at delaying infection of the seeds or test media with fungi, but that the costs of reduced germination related to fungicide application make this practice undesirable. Because Wyoming big sagebrush is becoming a common species for revegetation and restoration activities, germination tests of this species are needed to increase understanding of proper seed storage and seeding methods. We recommend that those conducting germination trials with Wyoming big sagebrush either test untreated seed and accept some level of fungal contamination, or explore other methods of seedcoat sterilization that may have less impact on total germination. Any treatment for reducing fungal infection, however, should first be evaluated for potential effects on germination percentage.

Cox RD, Kosberg LH, Shaw NL, Hardegee SP. 2011. Effect of fungicide on Wyoming big sagebrush seed germination. *Native Plants Journal* 12(3):263–267.

KEY WORDS

Artemisia tridentata, Asteraceae, Captan, fungus, germination, Thiram

NOMENCLATURE

USDA NRCS (2011)

Figure 1. Wyoming big sagebrush (*Artemisia tridentata* Nutt. ssp. *wyomingensis* Beetle & Young [Asteraceae]) seeds, magnified approximately 20X. Photo by Robert D Cox