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## **Effect of stratification, gibberellic acid, and ethephon on *Echinacea purpurea* (L.) Moench and *E. angustifolia* D.C. seeds**

Echinacea, commonly referred to as purple coneflower, is an economically important herbaceous perennial native to North America. The demand for Echinacea has dramatically increased within recent years due to the renewed interest in native plantings and its medicinal properties. The roots and above ground parts of *E. angustifolia* D.C., *E. pallida* (Nutt.), and *E. purpurea* (L.) Moench have been proven to stimulate the immune system to prevent and treat colds, flus, and upper respiratory infections. However, Echinacea seeds have a dormancy requirement that ensures that they do not germinate until environmental conditions are favorable for survival, which makes them particularly difficult for plant propagators to germinate. The enlarged demand coupled with the low germination percentage of Echinacea has led researchers to determine what techniques will best help seeds break dormancy in order to improve the seedling germination percentage. The objective of this study was to find the treatment that most enhanced the germination percentage of *E. purpurea* and *E. angustifolia* by using a combination of stratification or moist chilling, gibberellic acid, and ethephon. The results of the study indicated that the treatment for both species that had the greatest improved germination percentage was stratification for 7 weeks with ethephon at 5 degrees Celsius.

This project was completed as part of a Capstone requirement.