28. POSTER FOR COMPETITION

Enhancement of seed germination of wild plant species through priming

A. Nayyef[a,c]*, D. Merritt[b,c], S. Turner[b,c], D. Pritchard[a]

[a] Department of Environment and Agriculture, Curtin University, Kent Street, Bentley, Perth Western Australia, 6102
[b] School of Biological Sciences, The University of Western Australia (M084),35 Stirling Highway, CRAWLEY WA 6009 Australia
[c] Biodiversity Conservation Centre, Kattidj Close Kings Park Western Australia 6005
* Presenting Author

Statement of the Problem: Globally there has been a significant decline in natural habits in arid regions. Desertification is common in arid zones and is a serious problem affecting the survival of many plants endemic to these regions. Revegetation of arid and semi-arid land is difficult because it is widely influenced by extreme climatic factors, disturbance patterns, limited revegetation technology and importantly a lack of understanding of the biology and ecology of native plant species. Seeds are central to the revegetation of degraded lands, but poor seedling establishment limits our capacity to restore diverse plant communities. Priming is an effective method to enhance seed germination in arid and semi-arid regions. The purpose of this study is to enhance seed germination of species endemic to arid regions using priming technology to synchronize germination and hence assist in arid land restoration.

Methodology: A seed priming experiment was conducted on two native plant species (Poaceae) from the Pilbara region (northern Western Australia) in an attempt to improve germination speed, germination percentage and the seeds resistance to water stress.

Findings: Combinations of priming treatments significantly increased germination percentage in both species (*Cymbopogon obtectus* and *Eriachne mucronata*) under water stress compared to the control treatment.

Conclusion & Significance: Priming has a positive effect on germination parameters such as total germination and speed for seeds under certain water stress; however, this positive effect decreases when water stress is high (-1.0 MPa). This study assists in better understanding how to improve germination of native species from the arid Pilbara which will improve the success of future revegetation programs.

The Royal Society of Western Australia
Symposium 2018

Landscapes, Seascapes & Biota: Unique WA – Past, Present & Future

Program & Abstracts




July 27 & 28 2018
University Club, The University of Western Australia

Photographs by Jenny Bevan