

Acadian Seaplants' *Ascophyllum nodosum* Extract: Helps Plants Tolerate and Survive Freezing

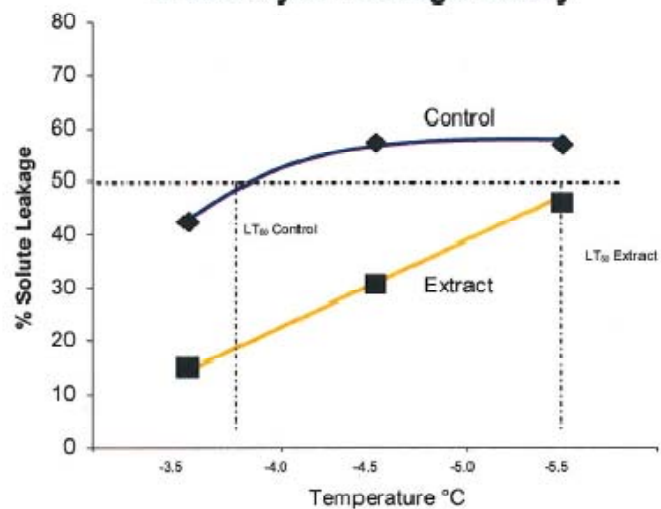
Frost is a major environmental stress that causes considerable economic damage costing growers millions in lost revenue.

Controlled, replicated studies conducted by the Nova Scotia Agriculture College show that Acadian Seaplants' *Ascophyllum nodosum* extract can significantly improve freezing tolerance in *Arabidopsis thaliana* plants. *A. thaliana* plants were exposed to freezing stress of -4.5°C for 24 hours followed by a period of thawing and recovery at 22°C for 48 hours. A 2°C improvement in LT_{50} Values (lethal temperature at which 50% damage occurs) was observed between the seaweed extract treated plants and the control plants. An Electrolyte Leakage Assay also showed improved membrane stability and integrity of seaweed-treated *A. thaliana* plants during freezing as compared to the control plants.



Arabidopsis plants after freezing stress at -4.5°C for 24 hours and thawing and recovery at 22°C for 48 hours.

Electrolyte Leakage Assay



Effect of *Ascophyllum nodosum* extract on electrolyte leakage in *Arabidopsis* leaves after exposure to sub-zero temperatures.

The findings presented here are part of Acadian Seaplants' extensive fundamental and applied research program. To learn more about the *Acadian Science Story* and our other findings, contact Acadian Seaplants Limited today.



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