The Effect of Sodium Chloride on Hybrid Taxodium Species

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Saltwater intrusion is a major cause of erosion. If a hybrid bald cypress species is superior to the regular bald cypress species at surviving in saline conditions, then planting these hybrid trees where they could use their roots to contain soil and preserve land would be invaluable in slowing or stopping erosion. The purpose of this experiment is to determine which of 4 bald cypress hybrid tree species survive when planted in an area of high salt concentration soil. After 10 trees of each species was planted, the researcher harvested each of the 40 tree's foliage one year after the initial planting of the trees. The researcher then dehydrated each tree’s foliage and tested the foliage to see which elements were most present. Every hybrid was significantly more healthy than the typical bald cypress control one month after their planting in saline conditions. After completing this area of experimentation, research was done on an additional two hybrid trees' and one control tree's roots. The amount of deterioration in the roots was measured after initial exposure to concentrations of 0ppm salt, 10,000ppm salt, and 20,000 ppm salty water. Results showed that the hybrid roots reacted significantly more slow in brackish conditions than the control bald cypress.

Awards Won:

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