Building Healthy Forests with Early-Stage Propagation: University of Saskatchewan

Forestry is among the world's largest industries; it has a significant impact on people's lives around the world. One of the industry's greatest challenges is increasing the efficiency of land areas designated for commercial forestry by improving their productivity. Another challenge is complying with environmental standards, which provide guidelines for reforestation, production in environmentally sensitive areas, and long-term sustainable forest management.

A crucial step toward increased efficiency is growing stronger trees. With many plant species, horticulturalists can create new varieties by taking cuttings from plants with desirable characteristics and encouraging the cuttings to root. This propagation method has yielded scores of different kinds of plants including orchids, roses, grapevines, and fruit trees. But the method doesn't work well with most forest trees because the cuttings are less likely to take root.

Researchers at the University of Saskatchewan developed a technology called somatic embryogenesis (SE), a complex propagation process that relies on the splitting of one embryo into two or more identical embryos. The method allows scientists to grow two or more plants that have the same genetic makeup. With SE, propagation occurs earlier in the plant's lifecycle and rooting is more likely to be successful.

SE offers several economic benefits to the forestry industry including greater success in propagating desirable trees and the ability to grow seedlings year-round. The University of Saskatchewan licensed the patent-protected technology to CellFor based in Vancouver, British Columbia, Canada. In 2003, the company began working with timberland managers to plant loblolly pine seedlings propagated from fast growing, disease-resistant varieties in the southeastern U.S. states including Georgia and Mississippi.

Today the company maintains more than 3,000 unique genetic lines and has an extensive network of field trials aimed at testing and further refinements. The technology allows CellFor to produce seedlings that grow faster, generate a higher yield, and produce superior wood, while reducing production costs and enhancing resistance to disease and pests.

Read more about SE at www.cellfor.com. ■

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