Drought-Tolerant Trees (Yissum)

code: 22-2006-988

Arie Altman, HUJI, Faculty of Agricultural, Food and Environmental Quality Sciences, Robert H. Smith Institute of Plant Sciences and Genetics in Agriculture

Methods for selecting and propagating trees and other plants for stress tolerance

Categories	Agriculture, Forestry
Development Stage	Undergoing tests in greenhouses and small plots
Patent Status	Know-how based technology (no patents)
Market Size	Millions of hectares of trees are grown in semi-marginal areas worldwide

Highlights

- Molecular breeding, routine in agriculture, has not been widely applied to forest-trees, leaving a need for biotechnology solutions to create superior genotypes and direct introduction of specific traits via genetic engineering.
- Methods for efficient identification of molecular and metabolic markers, culture and large-scale propagation of forest trees and other species that are resistant to drought, harmful chemicals and other environmental factors.
- Advanced results in pine, citrus, and poplar species

Our Innovation

Techniques for large-scale propagation of trees and other plants involving identification of molecular and metabolic markers for tolerance to abiotic stress such as drought or aluminium, micropropagation of specimens bearing these markers, and efficient methods for large-scale culture of the propagules and methods for conserving the stress- tolerant varieties through cryogenic storage in vitro and germplasm storage.

Key Features

- Rapid selection of trees and other plants possessing genotypes conferring tolerance to abiotic stress such as drought, cold, heat, and salinity
- Enables rapid, large-scale micropropagation of the selected genotypes for breeding programs use for nurseries and forestation
- Establishment of germplasm collection and conservation
- Development Milestones
- Development of additional markers for abiotic sress tolerance in other trees and crop plants such as tomatoes

The Opportunity

- Reforestation can reduce the increase in atmospheric carbon dioxide and predicted climate change. Drought-resistant trees have a definite advantage in many dry areas of the world.

Contact for more information:

Michal Levy ✉, VP Head of Bus. Dev. Agri-Tech, Vet. & Environment, +972-2-6586635

Yissum Research Development Company of the Hebrew University of Jerusalem
Hi-Tech Park, Edmond J. Safra Campus, Givat-Ram, Jerusalem P.O. Box 39135, Jerusalem 91390
Israel Telephone: 972-2-658-6688, Fax: 972-2-658-6689