

Growing Demand and Advancements Propel the Plant Tissue Culture Market to New Heights | CAGR of 8.5% from 2021 to 2030

PORTLAND, OREGON, UNITED STATES, May 29, 2023 /EINPresswire.com/ -- According to the report published by Allied Market Research, the [global plant tissue culture market](#) generated \$382.30 million in 2020, and is expected to reach \$895.00 million by 2030, exhibiting a CAGR of 8.5% from 2021 to 2030. The study analyzes the important strategies, drivers, competition, market dynamics, size, and important investment regions.

Key Takeaways:

Growing demand for plant-based products: The increasing consumer preference for plant-derived products, including food, pharmaceuticals, cosmetics, and biofuels, has driven the demand for plant tissue culture. Plant tissue culture allows for the mass production of uniform, disease-free, and genetically stable plantlets, ensuring a consistent supply of high-quality plant materials.

Agricultural productivity and crop improvement: Plant tissue culture techniques have revolutionized crop improvement programs. Through tissue culture, plant breeders can rapidly multiply desirable traits, such as disease resistance, improved yield, and tolerance to environmental stressors. This enables the development of superior varieties and hybrid plants, leading to enhanced agricultural productivity.

Conservation of endangered species and biodiversity: Plant tissue culture plays a crucial role in the conservation of endangered plant species and the preservation of biodiversity. By using tissue culture techniques, it is possible to propagate and preserve rare and threatened plant species that are difficult to propagate through traditional methods.

Industrial applications: Plant tissue culture has found numerous applications in industries such as horticulture, forestry, and ornamental plant production. It allows for the mass production of ornamental plants, tree saplings, and exotic plant varieties, meeting the demand of the landscaping and gardening sectors.

Technological advancements: Advances in plant tissue culture techniques, such as micropropagation, somatic embryogenesis, and genetic engineering, have significantly improved the efficiency and success rate of plant propagation. These advancements have also led to the

development of new plant varieties with desired traits, contributing to agricultural sustainability and innovation.

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Market Drivers:

Increasing demand for plant-based products: There is a growing consumer demand for plant-derived products across various industries, including food, pharmaceuticals, cosmetics, and biofuels. Plant tissue culture enables the mass production of uniform and high-quality plant materials, ensuring a consistent supply of raw materials for these industries.

Crop improvement and genetic engineering: Plant tissue culture techniques play a vital role in crop improvement programs. By using tissue culture, plant breeders can rapidly multiply desirable traits, such as disease resistance, improved yield, and tolerance to environmental stressors. Genetic engineering techniques, such as tissue culture-mediated transformation, further enhance the development of plants with desired traits.

Market Segmentation:

Type of Plant Material:

- a. **Seeds:** Tissue culture techniques can be used for seed germination, enhancing germination rates, and obtaining disease-free seedlings.
- b. **Shoots/Explants:** Tissue culture can involve the propagation of shoots or explants from various plant parts, such as stems, leaves, or meristems.

Application:

- a. **Commercial Production:** Tissue culture is used for large-scale production of plantlets, including agricultural crops, ornamental plants, and tree saplings, to meet commercial demand.
- b. **Research and Development:** Tissue culture is utilized for experimental purposes, genetic engineering, development of new plant varieties, and conservation of rare or endangered species.

End-User Industry:

- a. **Agriculture:** Tissue culture is applied in agricultural practices to enhance crop productivity, develop disease-resistant varieties, and improve the quality of agricultural products.
- b. **Horticulture and Floriculture:** Tissue culture is used to propagate ornamental plants, flowers, and horticultural crops, ensuring uniformity, disease-free stock, and mass production.
- c. **Pharmaceuticals:** Tissue culture is utilized for the production of plant-derived compounds used in the pharmaceutical industry, such as secondary metabolites and medicinal plants.
- d. **Others:** Tissue culture finds applications in industries like cosmetics, biofuels, forestry, and environmental conservation.

Geography:

The plant tissue culture market can be segmented based on regional or global factors, taking into account factors such as market demand, infrastructure, regulatory environment, and technological advancements.

Scale of Operations:

- a. Large-Scale Commercial Laboratories: These are well-established laboratories with high-capacity production, catering to the demand for plantlets and crops on a large scale.
- b. Small-Scale or Research Laboratories: These laboratories focus on research and development, experimentation, and niche market segments, producing limited quantities of plant material.

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Regional Growth Dynamics:

Based on region, Asia-Pacific, followed by Europe and North America, contributed to the highest share in 2020, holding more than one-third of the total share, and is projected to lead throughout the forecast period. The North America region is anticipated to portray the fastest CAGR of 10.9% during the forecast period.

Competitive Landscape:

Thermo Fisher Scientific Inc.
Merck KGaA
Sigma-Aldrich Corporation (a subsidiary of Merck KGaA)
HiMedia Laboratories
Lonza Group Ltd.
Vitroflora Group
Biocision LLC
Agilent Technologies, Inc.
F. Hoffmann-La Roche Ltd.
Corning Incorporated

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Allied Market Research

Allied Market Research

+1 800-792-5285

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