

IN VITRO EXPLANT CULTURES USING TEMPORARY MECHANICAL IMMERSION

<i>Offering Organization:</i>	Centro de Investigación y Asistencia en Tecnología y Diseño del Estado de Jalisco, A.C.
<i>Type of Organization:</i>	Public Research Center
<i>Development Stage:</i>	Commercial Prototype
<i>Desired Relationship:</i>	<ul style="list-style-type: none"> - Creation of a new company (Joint Venture) for the commercialization of the products outlined herein - Licensing of patents
<i>Sector:</i>	Agriculture
<i>Area of knowledge:</i>	Plant Biotechnology
<i>Key words:</i>	Explants in vitro, temporary immersion, plant biotechnology, plant tissue, <i>in vitro culture</i>

DETAILED DESCRIPTION:

Problem to be solved :

The in vitro cultivation of explants using temporary mechanical immersion as a liquid culture medium has increased in recent years due to the advantages it has demonstrated over cultivation in semi-solid or other liquid culture mediums. This technology has required laboratory equipment and materials that allow for the optimized handling of this technique, ensuring efficiency, asepsis, cost-effectiveness and practicality.

Solution:

This temporary mechanical immersion system was developed in order to make the *in vitro* temporary immersion technique more accessible in laboratories, i.e. to lower laboratory costs, simplify assembly and allow for the cultivation of plants in all stages of development.

New and Innovative Aspects:

A temporary mechanical immersion system contains components which function efficiently without consuming energy unlike other equipment and apparatus available in the market.

TECHNICAL CHARACTERISTICS:

This invention refers to the manufacture of a temporary mechanical immersion system suitable for the *in vitro* cultivation of plant tissue. The system is characterized by two glass compartments, the upper of which contains holes covered with Micropore tape; a stainless steel piston in a silicone tube suspended in the upper compartment, which also contains a rack to hold the explants during immersion in the nutrient solution deposited in the lower compartment; one silicone and two aluminum rings to attach the hermetic coupling to both compartments by means of stainless steel screws; a support for immersion for long periods of time; and a lower auxiliary compartment with its own lid for changing the nutrient solution. All the material which comprises this temporary immersion system is autoclavable which allows for its reutilization in the *in vitro* cultivation of plant species while conserving its aseptic conditions, an indispensable feature of this system.

Main advantages derived from its utilization:

- This system makes the temporary immersion technique more accessible for *in vitro* culture laboratories, i.e. lowers laboratory costs, simplifies assembly, and allows for the cultivation of plants in all stages of development.
- This invention describes a portable temporary mechanical immersion system contains components which function efficiently without consuming energy.
-

Applications:

- Agriculture

INTELLECTUAL PROPERTY

- Patent granted in 2007, valid until 2023.

ABOUT THE OFFERING ORGANIZATION

Presentation:

El Centro de Investigación y Asistencia en Tecnología y Diseño del Estado de Jalisco, A.C. (CIATEJ) is a public research center that belongs to the national technology development and innovation network, the National Council for Science and Technology (CONACyT). CIATEJ is focused on the agricultural, food, health, and environmental sectors with an emphasis on the application of innovative biotechnology.

Contact Information:

Mtro. Evaristo Urzúa Esteva -
eurzua@ciatej.net.mx