

METHOD FOR INCREASING THE CAROTENOIDS CONTENT IN LYCOPERSICON SCULENTUM L. THROUGH RED LASER IRRADIATION

<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 Concept Tests
<i>Desired Relationship:</i>	<ul style="list-style-type: none"> – Technological research and development financing (technological partner) – Specialized application tests – Creation of a new company (Joint Venture) for the commercialization of the products outlined herein – Licensing of patents
<i>Sector:</i>	Plant Biotechnology
<i>Area of knowledge:</i>	Food Tecnology
<i>Key words:</i>	Lycopersicon esculentum L. , tomatoes, lycopene , carotenoids, red laser irradiation

DETAILED DESCRIPTION:

Problem to be solved:

Consumption of tomatos (*Lycopersicon esculentum* L.) and derived products containing lycopene have been associated with decreased risk of chronic diseases such as cancer and cardiovascular diseases. This is true primarily because of the antioxidant activity of carotenoids containing B-carotene, lycopene, and lutein, among which the majority is from lycopene.

Solution:

This invention is related to the post-harvest of fruits and vegetables, and refers to a method for increasing the carotenoid content in *Lycopersicon esculentum* L. using red laser irradiation.

New and Innovative Aspects:

The method of increasing the content of carotenoids in fruits and vegetables by red laser irradiation in order to enhance the beneficial health effects that carotenoids pass on.

TECHNICAL CHARACTERISTICS:

This unique invention which refers to a method for increasing the carotenoid content in *L. esculentum* using red laser irradiation is made up of the following steps:

1. Selection of raw material
2. Laser irradiation
3. Incubation of the fruit

After applying the method according to the three previous steps, the resulting fruit of *L.esculentum* will have more lycopene content than the fruit that has not received laser treatment.

Main advantages derived from its utilization:

- The invention refers to the method of increasing the content of carotenoids in fruits and vegetables by red laser irradiation in order to enhance the beneficial health effects that carotenoids pass on.
- Using the method of red laser irradiation as described in this invention in order to increase the carotenoid content in *Lyconpersicon esculentum* L. results in a 96% increase of lycopene in the external part of the fruit, 67% in the middle part, and 43% in the internal part .

Applications:

- Fruits and vegetables

INTELLECTUAL PROPERTY

- Patent granted in 2014, valid until 2034
- MX/a/2007/005728

ABOUT THE OFFERING ORGANIZATION

<i>Presentation:</i>	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.
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