BIOPLASTIC MATERIAL MADE FROM AVOCADO SEEDS BY THE BIOFASE GREEN COMPANY IN MEXICO

The <u>BIOFASE company</u>, based in Monterrey (State of Michoacan) in Mexico, has developed a technology for manufacturing a highly biodegradable bioplastic made from avocado seeds. This new material degrades much faster than hydrocarbon-based plastics, on average in 240 days depending on the environment in which it is disposed of.

With this new material, BIOFASE designs and manufactures biobased products such as plates, cutlery, straws and containers for hot and cold food, reducing the pollution caused by conventional plastics.



The creator of this innovation and founder of the BIOFASE company is Scott Munguía, who in 2012 as a student at the Monterrey Institute of Technology and Higher Education (ITESM), in his research work was looking for new solutions to face the high pollution generated by the use of plastics throughout the world. The research also aimed to identify materials generated by plant sources, without taking advantage of products that represent potential food sources, such as other bioplastics that are produced from corn and potatoes.

BIOFASE's currently patented products are the result of ten years of research and development in the area of bioplastics to offer solutions that bring benefits to consumers and the environment. The composition of their material is 60% avocado seed biopolymers and 40% synthetic organic compounds that help give the products excellent mechanical and physical properties.

The biobased and biodegradable resin created by BIOFASE can be used by all companies, taking advantage of common plastic molding techniques and replacing polypropylene, polystyrene and polyethylene.

The company currently manufactures and sells a range of <u>products</u> such as spoons, forks, knives, straws, plates and food containers of different sizes. These products can be used for daily use in homes, as well as in restaurants, hotels, cafes, schools and any other place that wants to join the biodegradable revolution.

BIOFASE products are high-quality and resistant ones, they have the same functional behavior as ordinary plastic, do not alter the taste or smell of food and can be used in hot or cold foods. In addition, they are competitively priced with other green technologies



These products have great manufacturing potential. The BIOFASE plant in Mexico uses around 15 tons of avocado seeds a day to manufacture its products. According to the company, 300,000 tons of avocado seeds are discarded annually by industries in Mexico, which could satisfy a very high demand for bioplastics. The biobased resin produced by BIOFASE does not come from potential food resources because it uses only a raw material that consists of agro-industrial waste. In addition, the growing avocado tree absorbs CO2 from the atmosphere and uses it for its own development, helping to reduce global warming.

From the point of view of their specific contribution to the environment, the production and use of BIOFASE products provide the following benefits:

- They contribute to reducing global warming as these products, due to the nature of the biopolymer, have a minimal carbon footprint compared to conventional plastics.
- They contribute to reducing at least 60% the consumption of plastic refined from oil, due to its high content of vegetable matter, reducing the high level of environmental plastic pollution.
- Unlike other products that have to be transferred to an industrial composter and exposed to high temperatures for biodegradation, the plant-based content of the BIOPHASE products can be degraded on land or in any sanitary landfill.

A striking promotional campaign for potential consumers carried out by the company on its Facebook page and other communication media highlights the contribution of its products to reduce the current high levels of plastic pollution and the more sustainable world they can help to improve.

In addition to progressively expanding its sales in the Mexican market, the company currently exports its products to more than 25 countries: Canada, United States, Guatemala, Honduras, Nicaragua, Dominican Republic, Colombia, Suriname, El Salvador, Costa Rica, Panama, Ecuador, Peru, Chile, Uruguay, England, France, Spain, Sweden, Belgium, Holland, Poland, Germany, Luxembourg, Switzerland, United Arab Emirates. BIOFASE invites other enterprises and actors to establish collaboration.

BIOFASE has received important <u>national and international recognitions</u> In 2013 Scott Munguía won the Prize for Technological Innovation during the Cleantech Challenge Mexico. In 2014 Munguía was <u>recognized by</u> <u>the MIT as one of the Innovators Under 35 for Latin America</u>. The United Nations Agency for Environment mentions BIOFASE in an article on its website as <u>one of the four innovative solutions made in Latin America</u> <u>that could change the world</u>

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Biofase company website

Biofase technology

Biofase products

Biofase - productos.pdf

Biofase in 2000Agro Revista Industrial del Campo

Article UNEP - four innovations for sustainable living that could change the world



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