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New growing technology set to increase algae yields

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A technology developed to increase commercially viable and scaleable algae yields was lauched yesterday (24th February) by Bionavitas, Inc. The process, Light Immersion Technology™, involves immersing the light source, natural or artifical, in the algae culture which, says the company, produces an order of magnitude more algae biomass than existing growth methods.

Prior to the development of the LIT process, explains the company, nearly every large scale approach to algae growth has been challenged by a simple fact of nature: as algae grow, they become so dense they block the light needed for continued growth. This "self-shading" phenomenon results in a layer that limits the amount of algae per acre that can be grown and harvested. The Light Immersion Technology developed by Bionavitas fundamentally changes this equation by enabling the algae growth layer in open ponds to be up to a meter deep. This, it says, represents a 10 to 12 time increase in yield over previous methods that produced only 3-5 centimeters of growth.

With the recent successful test flights by Continental Airlines and Japan Airlines using biofuels made partially with algae, we're seeing a broader recognition and acceptance of the huge commercial potential for algae," said Michael Weaver, co-founder and CEO of Bionavitas. "Our Light Immersion Technology gives algae a legitimate shot at becoming a cost-effective and sustainable biofuel feedstock because we have cracked the code of the previous problem related to self-shading in algae growth. This new technology is a game-changer because it results in quantities of algae production necessary for commercial use."

At the core of Light Immersion Technology is an innovative approach at bringing light to the algae culture in both open ponds and closed bioreactors through a system of light rods which extend deep into the algae culture. By distributing light below the surface "shade" layer and releasing the light in controlled locations, algae cultures can grow denser. In external canal systems, the rods distribute light from the sun into the culture. as biofuels.

In closed bioreactors, the rods evenly distribute more readily absorbed red and blue spectrum light from high efficiency LEDs. While the LEDs increase the cost of production, algae grown in these systems are used for higher value markets such as nutraceuticals.

"In order to grow algae in the large-scale, cost-efficient manner needed for biofuels, we have specifically designed our technology to require as little energy as possible," said Weaver. "Light Immersion Technology has all of the attributes needed to allow algae to compete with petroleum. It is designed as a passive, low input, net energy positive system which is inexpensive to mass produce."