

นวัตกรรมอาหาร พลังงานทดแทน : ทางรอดประเทศไทย ยั่งยืนได้ด้วยไบโอเทค

**Biotechnology: Solution to Our Sustainable Economy, Food Innovation,
and Alternative Energy Source**

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Abstract

Threats to our society are food shortage and imbalance energy production/consumption. Even though we are major food and agricultural product exporter, we still import large portion of energy to maintain balance of energy exhaustion and we barely produce enough fat for internal consumption. “Fat For the Future” is a term that was introduced to promote the idea of using “fat” as food and energy source. Our immediate response in this technology is to improve our production efficiency and productivity of fat food process through the knowledge of biotechnology. In the year 2004, UC Berkeley developed bacterial (yeast) through genetic modification to produce oil from agricultural product which could be adopted in industrial scale. Amyris Biotechnologies Inc. (www.amyris.com) announced production of Biodiesel (Amyris Biodiesel) to promptly available in 2013. Similar to LS9 Inc. that developed enzymatic modified bacterial to produce oil from living cell, its product has quality similar to biodiesel and this technology has already been optimized for 135,000 liter fermenter pilot plant. Thailand’s most potential solution to this crisis is the development of oil from seawater algae. Its advantages are land use and irrigation. The key success of the development is based on the strength of biotechnology study from microorganism selection, productivity improvement, extraction, and purification.

Keywords: *sustainable economy, food innovation, alternative energy source*
