Abstract

Background

Over a billion tons of animal waste from livestock producers is un-utilized (wasted) each year by merely dumping on the ground. Repeated discharge on the spray fields leads to runoff and ultimately water contamination with high levels of nutrients.

Technology Description

The Reactor System regulates ultra-high temperature and pressure formulas required to sterilize pathogens, remove odors, capture GHG, break down the long carbon chains contained in the waste to create commercially viable products and farm water reuse. A a portion of the effluent is to be fed back into the abandoned lagoons to harvest heterotrophic algae in the primary effluent and autotrophic algae grown in aerobically treated effluent which will yield additional biomass suitable for fertilizers, livestock feed, and biofuel through hydrothermal liquefaction within the reactor. We harvest animal waste into various bio-organic products, organic/all natural biobased fertilizers, biobased hydrocarbons, bio-fuels/additives, and biobased chemicals offsetting fossil fuels (petroleum) by replacing everyday products, gallon for gallon with sustainable biobased products instead of discharging the untreated animal waste as it is done currently.

Objectives

With my bio-reactor system up to 99% of all the available nutrients are recovered, concentrated and collected from this system. The proposed business model ensures the economic feasibility for the farmers by not requiring them to invest any of the capital costs. We install and operate the system generating our revenue from sales of the byproducts and limited partnership license sales to third parties to operate their own “for profit” systems with ROI in less than three years.

A network of remotely operated Reactor Systems will be built on dairies, poultry operations and hog farms introducing new bio-based products into the market place while dramatically reducing one of the largest wasted natural resources (animal waste) in the USA and worldwide. Recently, the USDA certified one of my new fertilizers as *organic biobased fertilizer listed on the USDA bio-preferred web site* carrying the Federal Mandate designation.

Still the most difficult hurdles are USDA regulations/classifications of the finished products and market acceptance, the development of the science is proving to be the easiest component. We have been trying for over a year to get the National Organics Products board and OMRI to approve hog waste derived fertilizer on the approved for use in ORGANIC farming to no avail as we do not fit into any current classifications according to the reviewers. That simple designation has been our most difficult challenge and road block to implementation.