

Biofuel 3.0

by Marc Goyette

New oil discoveries peaked in 1981 but demand has been growing every year as over 2 billion Chinese and Indian citizens are rapidly expanding their economies. That suggests continued upward pressure on the price of fuels which could be an opportunity for the meat and poultry processing industry.

The history of biofuel has been full of starts and stops.

- The first generation biofuel was ethanol which is an older technology that was once used to run Model-T automobiles. Ethanol has two major drawbacks: It returns 0.75 units of energy for every unit used, so it can't survive as a market solution without subsidies. It also utilizes the valuable food portion of corn crops, which raises the price of corn around the world. Fuel which raises the price of food will never be popular in the developing world. Fuel which uses the byproduct left over after most valuable food has been isolated from a raw material, or utilizes inedible plants, will be the more popular approach to biofuel business models.
- The second generation biofuel was vegetable oil based biodiesel. This solution was much more efficient with a return of 3.25 units of energy for every unit used. However vegetable based biodiesel companies found they could not find a reliable supply of inexpensive vegetable oil, and that has resulted in recent financial losses for most of those suppliers. Supply was the fatal flaw.
- The third generation biofuel is just starting to gain traction. The business model is a partnership between a meat or poultry processor who wants to optimize the value of their plant byproducts and a biofuel operating company that can create protein meal, glycerin, and biodiesel fuel on-premise at a meat or poultry processing plant. When you combine rendering and biodiesel operations together you get an impressive 7.09 units of energy for every net unit used to produce the fuel. Such a plant can significantly increase the per-head profitability of any type of meat packing operation (beef, pork, lamb, poultry, or fish). An animal byproduct based biofuel operation can double the profitability of a typical mid-size meat packing operation.

Animal byproduct based biodiesel is also good for the environment. It eliminates the toxic odor and air pollution associated with petrodiesel and many school districts are converting to 99% biodiesel (B99) to protect the health of their students. Biodiesel breaks down in water in a few weeks, so water exposed to biodiesel is not harmed in any way. Since it comes from animal byproducts, it can even be consumed without harm. However, don't drink the biodiesel you can buy at a gas station, as biodiesel is typically mixed with petrodiesel to increase its shelf life.

In 5 years, you may find that the best run meat or poultry processing operations in the US are all leveraging biofuel technology. They will be combining good fiscal management with a product that makes the US more energy independent from oil producing nations. This practice also reduces the amount of carbon we exhaust into the air every day.

Author: Marc Goyette is the CEO of R3 Biofuels which is a Renton, Washington-based company that creates joint ventures to unlock the economic and environmental value of meat and poultry processing byproducts.