ENZYMATIC DIGESTION PROCESS

General Overview:

Organic Recovery, LLC. utilizes unique enzymatic digestion to produce high-grade organic fertilizers and bio-stimulants. The basis of our technology is simply taking what nature does on its own and accelerating it.

We believe that this is the dawning of the Green Century. It is our mission to seek out other areas and applications to expand the use and expectations of our 'green chemistry'. Through the application of our sustainable practices, Organic Recovery is saving partner companies substantial monies in waste removal, decreasing air pollutants, keeping organic materials out of landfills, re-building soils, and decreasing pesticide and chemical fertilizer use.

Both consumers and industry leaders tend to view organics as more expensive and less effective than petrochemical-based alternatives. Organic Recovery is proving this conventional wisdom wrong by producing organic fertilizer and bio-stimulants that are superior both in performance and price to traditional sources.

Background:

The initial mission of Organic Recovery is to reduce the massive amount of organic waste being dumped into landfills in Florida. This material was being sent to various landfills around the State at a direct cost of millions of dollars a year.

Over the years, the enzymatic digestion process developed by Organic Recovery's sister company, Advanced Marine Technologies, proved to have multiple and widely varied applications. We are still discovering applications today.

Organic Recovery currently operates a facility in Pompano Beach, FL. The technology's creator, Lewis Spencer, has deployed additional large-scale, zero-waste projects around the world, including facilities in Iceland (on behalf of Dupont and ConAgra) and Nicaragua (for BioPolymer Group).

Enzymes:

Enzymes are globular proteins and are nature's own biocatalysts. Enzymes are produced by living systems to accelerate and sustain the myriad of chemical reactions necessary for life. Enzymes can be specific and possess high catalytic properties. They may also be immobilized, or 'put to sleep', and then activated at a later time. This is particularly useful in industry.

From the start of life through to death, enzymes initiate, control, and regulate all sustaining reactions in our own bodies as well as in all living things, both plant and animal.

Enzymes carry out all of the chemical reactions of life, but are very specific, and thus controllable. One enzyme will carry out only one type of reaction. As biocatalysts, enzymes speed reactions without being effected by them. Thus, when a catalyzed reaction is completed, the enzyme is unchanged and can continue working. Therefore, the same molecule of enzyme can carry out the same task many times over, as long it is not damaged by the reaction.

The continued use of enzymes in products produced by Organic Recovery has proved to be a powerful tool. In agriculture, it has allowed our soil amendments and bio-stimulants to have a composting effect on soil. This makes nutrients and trace minerals available to the plant which were previously locked up and inaccessible in the soil. In animal feeds, it allows the animal to economize metabolic energy by aiding in digestion. This of course allows the animal to expend less energy (calories) in the digestion of food, allowing for more growth of the animal.

Some traditional applications of enzyme technology include:

- Detergents
- Brewing – beer mashing and fermenting
- Chillproofing of beer
- Leather baiting and tendering
- Clotting and manufacture of cheese
- Flavour control and production
- Manufacture of high-fructose syrups
- Juice/wine clarification
- Digestive aids
- Vegetable oil extraction
- Cotton desizing and depiling
- Bioremediation

Organic Recovery's Enzymatic Digestion Engine (EDE):

Organic Recovery has developed a proprietary Enzymatic Digestion Engine (EDE) that utilizes proprietary enzyme blends in a method that mimics and accelerates optimal digestive conditions. The EDE strictly controls the factors that could potentially denature or damage enzymes or the proteins and organic matter that we work with. These factors include temperature, time, pH, pressure and mechanical force.

Organic Recovery has built and installed proprietary EDE's for as little as $100,000 and up to $1,200,000. Cost and size of the EDE varies greatly depending on the feedstock, finished product, and desired thru-put.

A typical small- to mid-size EDE, can be operated by as little as two employees with a thru-put of 4.5 tons of material every two hours. The actual digestion can take as little as 45 minutes. Utility use is low as it is a fast and 'cold' process.

Products that Organic Recovery has processed through its EDE: