Freund's Farm Inc.

Installation and use of an Aerobic Digester
Reasons We Made a Digester

In 1973 we had an interest in green energy, due to the economic situation with oil of the times. In 1976 we made our first digester.

Installed a digester to more efficiently fertilize our crops.

Irrigation system – Solids from liquids.
Digesters on the Freund Farm

First small scale digester in 1976
First Commercially built digester in 1997
Digester Problems

First commercially built digester
Well over 250 digesters built at the time, 23 in the USA on dairy farms

• Most failed due to maintenance and poor design.

• Difficulty heating the manure the 1st year of operation, causing poor gas production disastrous results.
Current Digester on Freund’s Farm

- More insulation within the vessel
- Cleaned out the digester to remove grit and sand, more biomass for digestion.
- Brand new digester – Heated with 804’ 4½” black iron pipe. Insulated blanket, 2”
- Covered with Liquid sealed XR5 poly propylene.
Current Digester Cont’d

- Success – Aluminum stainless support system. Greenhouse cover dry seal.
- Tremendous amount of energy put into the digester from the farm, well beyond the energy it produces.
Energy Use

Heat energy displaces imported oils.

Heat energy cannot be stored, and not always enough to heat more than the digester itself.
Energy Efficiency

- Efficiency of size: 5,000 animal units, to pencil out the expense of a digester to put the energy back in the grid.

- Manure is not potent enough to make energy efficiently or effectively.

- Import other waste streams needed for energy, anything from fats, oils grease, switch grass, milk way, dap – manure would become the buffering material to deal with the waste stream.

- Use to biodegrade in an aerobic situation instead of a landfill, problem being as you bring the additional material into the farms, they become a dumping ground.
**Pro’s**

+ Irrigation system
+ CowPots
+ Fiber for bedding the Cow’s
+ Displacing oil to heat personal house.
+ Odor Control

**Con’s**

+ Without the invention of CowPots, the investment would be net negative
+ Without government funding for the initial building and repair, there is a negative payback if you consider the energy it takes to run and maintain the digester.
+ No matter what I buy, there is no warranty, from the day I buy it.