Odor control is one of the most important advantages of anaerobic digestion.

"Anaerobic digestion is the one odor control method that has the potential to generate profits for the farm."

- Curt Gooch
PRO-DAIRY

ANAEROBIC DIGESTION
Fundamentals of Anaerobic Digestion of Dairy Manure

ADVANTAGES

- Reduction of manure gas odor; Less odor allows a farmer to be more flexible regarding how manure is stored and land applied.
- Reduction of greenhouse gas emissions; This is good for our environment and further justifies farmers are good environmental stewards.
- Improvement in utilization of manure nutrients; Effluent from digesters can be stored long-term without significant odor problems, allowing farmers to apply nutrients to field crops with less environmental impact.
- Improvement of water quality; Agronomically preferred application time also coincides when predicted runoff and leaching is minimal, thus minimizing contamination to receiving water bodies.
- Generation of energy; Produced biogas can be used to generate electricity, heat water or any number of other alternative uses that can be used on or off the farm.
- Revenue potential; Besides reducing the on-farm energy costs for electricity or heat, the digester can facilitate other enterprises such as digested manure solids sale as compost or bedding, excess electricity sales, or co-digestion of food waste for a tipping fee.
- Pathogen reduction; Research has shown a 99.9% reduction of indicator organisms (those that are commonly used to evaluate the success of a system’s performance relative to killing other pathogens). Johnes disease, a common disease found in today’s dairy cows, is reduced 99% by digestion.

DISADVANTAGES

- High initial capital cost; However, multiple economic analysis have shown that substantial payback is possible on some farms resulting in a net positive investment.
- Daily attention required by trained personnel; A designated farm employee must be trained in the principles and management of the system to ensure its success.
- Lack of experienced designers; A limited pool of designers with qualified credentials currently exists. However, with the recent surge in farmer’s interest, more technical support is becoming available to do design and management work.

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