



## Clean, premium bedding from manure

### THE PROBLEM

Bedding is a key component in fostering comfortable, healthy animals. Unfortunately, traditional bedding options such as sand, straw, sawdust, and woodchips are becoming harder to find, and increasingly costly. This is forcing many farms to look for alternate sources for bedding.

At the same time, farms continue to grow in size, putting mounting pressure on farms to manage increasing amounts of manure.

### THE SOLUTION

As many farms are beginning to discover, [bedding recovery from manure](#) offers a valuable opportunity to solve both the bedding and the excess manure issue.

Manure can be processed to a clean, premium bedding product, commonly referred to as Dried Manure Solids (DMS). While many farms are currently utilizing Recycled Manure Solids (RMS), dried manure solids offer reduced moisture, pathogen, and bacteria content.

FEECO can work with your recycled manure solids to engineer a custom, on-farm drying solution to produce a dry manure solids product that meets your bedding needs. Our controlled drying system can heat treat your material without drying it to the point that it becomes dusty.

### Facts

The average lactating dairy cow will produce around 150 lbs. of manure each day<sup>1</sup>. For a farm of 5,000 cows, that's 750,000 lbs. of manure per day, or 136,875 tons per year.

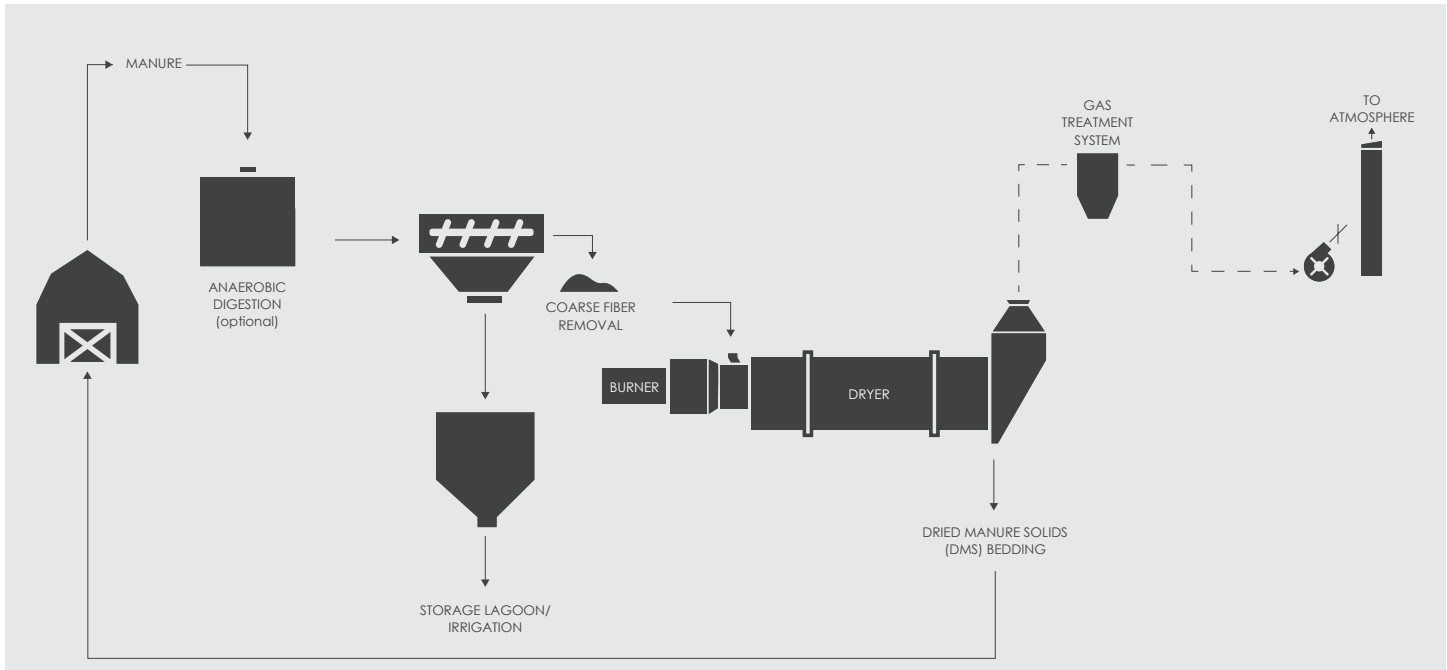
Farms using dried manure solids were studied by Cornell Waste Management Institute. The studied farms saved between 1 and 26 cents per hundred weight of milk (cwt) sold per year.<sup>2</sup>

While it has long been assumed that DMS bedding would foster increased bacterial growth over an inorganic bedding (i.e., sand), the Cornell study suggests that the bacteria content of used manure may be more related to the bacteria in the fresh manure, how well stalls are cleaned, and what gets tracked in from alleys, as opposed to the type of manure and how clean it starts out.<sup>2</sup>

**“What makes our offerings unique is that we can use our Innovation Center to run tests on a farm’s exact source of manure, providing a totally custom solution that works for them.”** - Nick Reckinger, FEECO Process & Bioresource Sales

## THE PROCESS OF BEDDING RECOVERY

While the bedding recovery process can differ, the diagram below illustrates a common setup, where manure first goes through anaerobic digestion, and then coarse fibers are separated out (solid/liquid separation via a screw press, sloped screen, or centrifuge). The coarse fibers (RMS) can then be dried into dried manure solids bedding.



## BENEFITS TO DRIED MANURE SOLIDS BEDDING

### Reduced Costs

Hauling and land-applying manure is extremely costly. This also limits the distance that the material can be hauled. Using the manure on-farm would reduce these costs, as well as the need to purchase additional bedding, allowing farms to be self-sufficient in supplying their own bedding and handling their wastes more efficiently.

### Additional Source of Revenue

In some cases, farms may produce more bedding than what they can use themselves, opening the door to an additional source of revenue through the sale of their excess supply.

### A Waste is Being Recycled

Bedding recovered from manure allows a “waste” that would otherwise have potential environmental impacts, to be reused in a beneficial way. From a



long-term perspective, the practice of reusing manure solids for bedding offers a closed-loop, sustainable solution to livestock bedding.

#### SOURCES:

1. United States Department of Agriculture. Economic Research Service. By James M. MacDonald, Marc O. Ribaldo, Michael J. Livingston, Jayson Beckman, and Wen Huang. *Manure Use for Fertilizer and for Energy*. Web. June 2016.
2. Harrison, Ellen, Jean Bonhotal, and Mary Schwarz. *Using Manure Solids as Bedding*. Rep. Cornell Waste Management Institute. N.p., 2008. Web. June 2016.

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