



Innovative Manure Management

# TREATING MANURE FOR BETTER FERTILIZER VALUE: A SMARTER WAY TO FARM

With fertilizer prices climbing and margins tightening, farmers are looking for ways to stretch every dollar. One of the most overlooked opportunities is the manure pit.

Manure isn't just waste—it's a nutrient-rich resource waiting to be unlocked. Left untreated or treated with the wrong products, much of that value can be lost to volatilization, odor, and a disrupted microbial community. The right pit treatment stabilizes nutrients, reduces losses, and improves the manure's performance as a fertilizer.

## **Why Pit Treatment Matters More Than Ever**

Synthetic fertilizer is expensive and supply is unpredictable. Many farms already have a powerful fertilizer source onsite: manure. The challenge is keeping those nutrients where they belong until they can be applied to fields. Untreated pits release nitrogen as ammonia and nitrous oxide and release sulfur as hydrogen sulfide—both costly losses and public nuisance issues.

A biologically healthy pit keeps nitrogen and sulfur in forms that are more stable and plant-available, reduces odor, lowers handling problems like crusting, and increases the material's fertilizer value when spread.

## **Chemical polymers and nitrogen stabilizers**

Products designed to slow nitrogen loss through chemical pathways can reduce volatilization in the short term when applied to fields, but when introduced into manure pits they can have unintended consequences. Many nitrogen stabilizers interfere with microbial nitrification and

denitrification pathways. In a pit environment that relies on a balanced microbial ecosystem to convert and retain nitrogen as ammonium and organic nitrogen, chemical inhibitors can suppress key microbial groups. This suppression can:

- Disrupt nitrogen cycling leading to imbalanced forms of nitrogen in the pit
- Prevent natural microbial conversion of volatile nitrogen compounds into stable, retained forms
- Extend time to biological recovery, meaning the pit stays less active for longer after treatment

The result is potentially reduced long-term fertilizer value and a dependence on repeated chemical applications.



## **The Role of Purple Sulfur Bacteria in Manure Master Plus PA**

Products that include purple sulfur bacteria, such as Manure Master Plus-PA, add a targeted advantage. These bacteria consume hydrogen

sulfide and convert it into elemental or organically bound sulfur that stays in the manure as a useful nutrient rather than escaping as odor. That conversion:

- Reduces odor and H<sub>2</sub>S exposure risk
- Adds plant-available sulfur back into the fertilizer pool
- Works synergistically with other microbes that stabilize nitrogen, creating a more balanced pit ecosystem
- Reduces sulfuric acid contained in manure which helps in the longevity of the livestock facility and equipment

### **Practical effects**

Microbial treatments can lead to lower ammonia and hydrogen sulfide emissions, a more stable nutrient profile, less crusting and easier agitation, and manure that spreads more uniformly and provides more predictable fertilizer value.

### **Bottom Line**

Treating your manure pit is about more than short-term odor control. It's about managing a biological system that can preserve and even enhance the nutrient value of the resource you



already own. Chemical, broad-spectrum approaches and certain nitrogen stabilizers can give quick fixes but risk damaging the microbial networks that lock nutrients in place. Microbial-based treatments protect and build those networks—stabilizing nitrogen and sulfur, reducing emissions, improving handling, and ultimately increasing the fertilizer value of the manure.

Treat your pit with biology, not just chemistry, and you'll turn a management headache into a fertilizer asset that helps reduce reliance on expensive synthetic inputs.