

It's the Pits

Agronomic Benefits of Bioaugmented Manure

Most livestock producers see value in the manure they generate and want to optimize its agronomic value in their operation. But the fact is, not all manure has the same value. When it comes to raw manure versus bioaugmented manure, there can be huge differences.

If livestock manure turns anaerobic and putrefied, the following undesirable issues occur:

- Anaerobic production of aldehydes and alcohol
- Top solids and bottom sludge
- Mineral volatilization as odorous gases
- Fosters pathogenic organisms
- Toxins that kill plants and beneficial soil biology
- Complexes soil minerals
- Alters soil biology and microbial balance
- Relocates disease causing organisms into the soil

When raw manure is applied to the soil, time is required for the microbes to digest the manure. This is called the **lag phase**. During the lag phase, the microbial population builds to digest the raw manure. As they multiply, they pull nutrients and energy away from the crop. Using pre-digested manure, removes the lag phase effect on the crop. Properly digested manure can be applied in the spring and planted right away without the effects normally encountered with raw manure. In fact, many customers notice an improvement in soil health and a reduction in weed pressure after three to five years of applying bioaugmented manure.

The application of bioaugmented manure results in improved soil health, plant health and agronomic performance. Research results and customer reports show a five to 15 percent increase in yield from applying bioaugmented manure versus raw manure. There are many benefits of bioaugmented manure, but the agronomic benefits more than justify the cost of treatment.

Agronomic Advantages of Bioaugmented Manure

- Improves nutrient value and retention by biological cellular nutrient storage
- Consistent nutrient uniformity from start to finish
- Reduces N loss and P lock-up
- Improves efficiency of all nutrient elements
- Improves N fixation
- Helps controls nutrient loss after application
- Triggers an explosion of beneficial soil microbes
- Better crop response
- Breaks down manure and soil salts
- Pre-digested “no lag phase”
- Natural balancing of soil nutrient and pH, improves soil aeration, structure and drainage
- Elevates plant defense mechanisms, which improves plant health and minimizes stress
- Helps buffer the negative side effects of pesticides including glyphosate
- Reduces alkali areas
- More in-field application uniformity
- Improves crop quality and feed value
- Reduces aflatoxins and mycotoxins in grain
- Better crop residue decomposition
- Reduces weed and pest pressure over time
- Improves root zone health and activity

Bioaugmentation of manure supports the concept that
“High end crop production is about minerals and microbes”



Agronomic ROI for Manure Bioaugmentation:

Step	Crop: Corn		
1	Average yield	=	200 bu/acre
2	3% yield advantage of bioaugmented manure	=	6 bu/acre
3	Value per bushel	X	\$6.00
4	Income advantage per acre (yield advantage x value/bushels)	=	\$36.00
5	Acres treated with bioaugmented manure [amount of bioaugmented manure (700,000 gal) ÷ gallons/acre (3,000 gal)]	X	233
6	Increased revenue from bioaugmented manure (acres applied x income advantage/acre)	=	\$8,388.00
7	Cost of treatment of manure applied (7000,000 gallons x \$0.002/gallons)	-	\$1,400.00
8	Income advantage (increase revenue – treatment cost)	+	\$6,988.00
9	Return on Investment (ROI) (increased revenue ÷ cost of treatment)		5 times

In this scenario, for every dollar spent, there was a five-time return just on the agronomic benefits.

Go to manuremaster.com to calculate your own ROI from bioaugmenting your manure.
Click on “**Estimate the Potential Agronomic Benefit of Bioaugmenting Your Manure**”