

# DETONATION™

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## Probiotic Manufacturing Methods



There is a growing use of probiotics and the benefits they bring to plant and soil health. These probiotics vary in their manufacturing methods, strains and overall probiotic total counts. Simply, the wider the range of stains and the higher the counts impacts their overall performance.

### PHARMACEUTICAL CULTURED BASED PROBIOTICS

- Inoculants are derived from pure lyophilized microbial cultures
- Organisms are grown via liquid and or solid state fermentation under aseptic, controlled laboratory conditions
- Fermentation is based on pharmaceutical protocols that select probiotic strains for their specific agronomic benefits
- This type of fermentation process maintains consistency in probiotic strains and counts from batch to batch
- Each batch is run through strict QC Protocols (cfu counts, pathogen screen)
- Since pure microbial cultures are utilized and entire process is run under aseptic conditions the potential for pathogen contamination is virtually nill
- Inoculants contain BOTH microbial cultures and secondary metabolites (enzymes, organic acids, etc)

### MANURE CULTURED BASED PROBIOTICS

- Probiotic inoculants are derived from bacteria indigenous to dung substrate which can vary based on dung type and feed diet
- Organisms are grown in large tanks inclusive of cow dung, nutrients and water all added to tank to grow out these organisms
- Fermentation is not based on pharmaceutical fermentation protocol standards
- Dung fermentation process can be inconsistence in probiotic strains and counts which impacts the finished product from batch to batch
- Dung has the potential for pathogenic contamination to humans and plants

### COMPOST CULTURED BASED PROBIOTICS

- Inoculants are derived from compost substrates
- Organisms are grown in large tanks inclusive of compost, nutrients and water all added to tank to grow out these organisms
- Fermentation is not based on pharmaceutical fermentation protocol standards
- Compose fermentation process can be inconsistence in probiotic strains and counts which impacts the finished product from batch to batch



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