

Bio Pass is a robust microbial package specifically designed to work in synergy with your liquid starter fertilizer program for corn and wheat. Bio Pass's specialized blend of bacteria works together in the soil to help kick-off seedlings' early season growth while enhancing the uptake of nitrogen, phosphorus, potassium and other essential nutrients throughout the season.



FEATURES & BENEFITS

- **Designed for corn and wheat in all soil types**
- **Improves nutrient mineralization**
- **Improves seedling germination and emergence**
- **Designed to be tank mix-compatible with liquid starter fertilizers or used as a coating on dry fertilizer**
- **Formulated for stability**
- **Easy to apply and handle**
- **Contains a powerful consortium of proprietary microbes**
- **Created to optimize starter fertilizer uptake and utilization**

FREQUENTLY ASKED QUESTIONS

Q: Why should I add Bio Pass to my liquid starter fertilizer?

A: Including Bio Pass with your liquid starter application is an effective method to deliver essential nutrients to seedlings and developing root systems and build a healthy biome around the root zone. The microbes in Bio Pass perform essential functions including shuttling nutrients and water to the roots, providing enhanced season-long nitrogen availability, breaking down organic matter, and improving soil tilth.

Q: Can Bio Pass be coated onto urea?

A: Bio Pass can be coated onto dry fertilizer blends containing urea up to 30% of the total blend.

Q: Is Bio Pass easy to mix with my liquid starter fertilizer?

A: Yes, The Andersons scientists spent significant time and resources to design Bio Pass so it would be easy to mix with liquid starter fertilizers. The microbes in Bio Pass are dispersed equally throughout the fertilizer solution to ensure uniform applications from start to finish.

Q: How does Bio Pass really work?

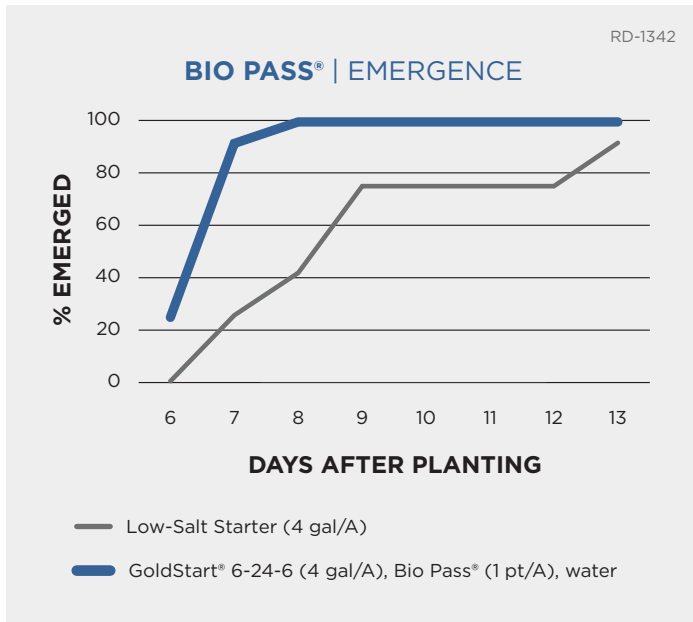
A: Bio Pass provides 300 billion colony-forming units (CFUs) per pint. After the microbes come out of sporulation, they begin reproducing and doubling their populations every 45-60 minutes. These microbes are key to healthy functioning soils and assist with cycling nutrients, decomposing organic matter, maintaining soil structure, and biologically crowding-out soil pathogens and undesired microbes.

Q: What is the source of the microbes in the Bio Pass formulation?

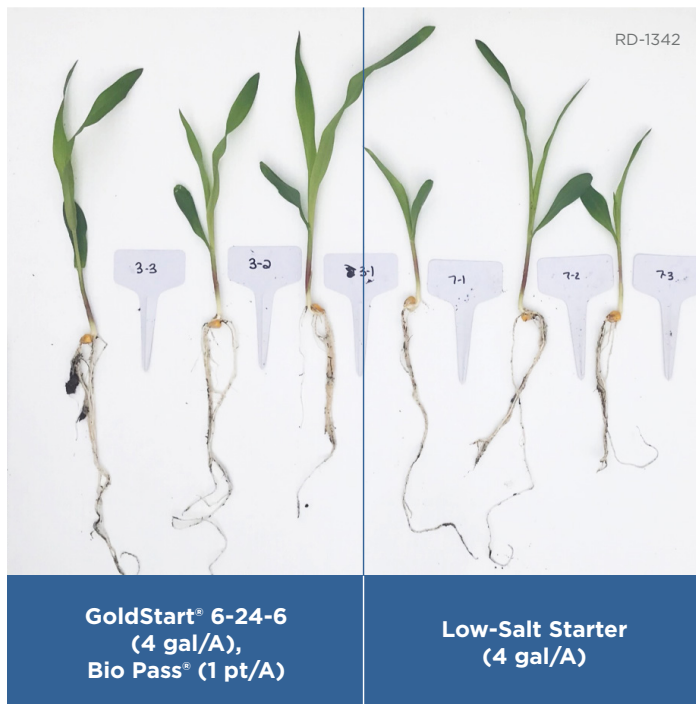
A: The microbes found in Bio Pass are naturally-occurring and sourced from highly-performing soils from across the United States that have shown above average plant growth and performance. Each batch is produced using only the originally sourced microbes to enhance consistency and fidelity.

Q: Does Bio Pass have unique handling or storage requirements? Does it need to be used immediately?

A: Bio Pass uses a proprietary formulation-stabilizing technology, allowing the product to have a sufficient shelf life of two years. It does not need to be stored at cool temperatures. Always read and follow label for mixing and handling instructions.



In a greenhouse study, the treatment with PureGrade® liquid fertilizer and Bio Pass emerged 5 days earlier and more uniform than the starter alone.



When Bio Pass is added to the liquid starter fertilizer, the average root mass of the plants (left) were more robust, and the plants had an average dry plant mass that was double the mass of the starter alone (right). This photo was taken 15 days after emergence.

GUARANTEED ANALYSIS

Total Nitrogen (N)..... 5.0%
 4.8%...Urea Nitrogen
 0.2%...Ammoniacal Nitrogen
 Available Phosphate (P₂O₅) 5.0%
 Soluble Potash (K₂O)..... 5.0%

Derived from: urea, phosphoric acid, potassium hydroxide

SOIL AMENDING INGREDIENTS

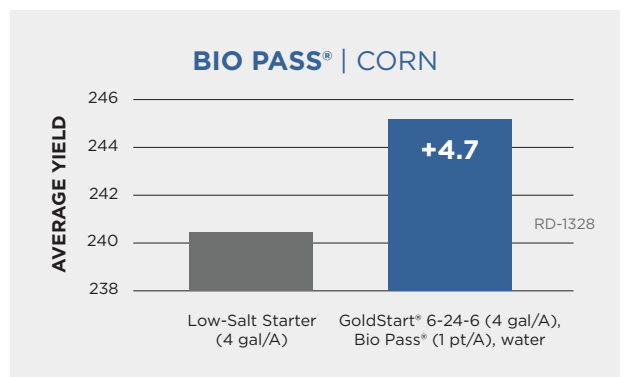
Bacillus formis..... 7.9 X 10⁷ CFU/ml
 Bacillus composti 7.9 X 10⁷ CFU/ml
 Bacillus laterosporus..... 7.9 X 10⁷ CFU/ml
 Bacillus ligniniphilus 7.9 X 10⁷ CFU/ml
 Thiobacillus sulfooxidans..... 7.9 X 10⁷ CFU/ml
 Bacillus oleophilus..... 7.9 X 10⁷ CFU/ml
 Azotobacter chroococcum 7.9 X 10⁷ CFU/ml
 Bradyrhizobium denitrificans..... 7.9 X 10⁷ CFU/ml

PHYSICAL PROPERTIES

pH..... 7.5
 Specific Gravity.....1.195 @ 68°F
 Density 10.1 lbs/gal
 Salt Out.....2°F

APPLICATION

Crop	Application	Use Rate (per acre)	Timing
Corn	Starter	1 pint	At planting
Wheat	Starter	1 pint	At planting
Corn and Wheat	As coating on dry fertilizer	1 pint per 400 pounds of dry fertilizer	With dry fertilizer application



In a Nebraska corn field trial, a 4+ bu/ac yield advantage was observed with Bio Pass added to the liquid starter application at planting.



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