



impello®



TRIBUS® ORIGINAL

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BY IMPELLO BIOSCIENCES

Plant Growth Promoting Rhizobacteria
micro organisms for MACRO YIELDS

5L / 33.8 fl oz
Net Weight (1 Kg)

impello®

micro organisms, MACRO YIELDS®



WHAT IS TRIBUS?



PLANT GROWTH PROMOTING RHIZOBACTERIA

Tribus® Original is a highly concentrated blend of three growth-promoting rhizobacteria species. The bacteria within Tribus help mobilize, solubilize, and chelate macro and micronutrients in the rhizosphere region of the soil for greater plant availability. The result? Rapid plant growth, increased yields, robust root development, and more efficient water uptake. Tribus also increases plant tolerance to abiotic stressors like hypersalinity, extreme temperatures, deficient or excessive water, heavy metals, and more.

In each milliliter of liquid, there are 10 billion colony-forming units of bacteria (CFUs). The high concentration of bacteria allows for low application rates and low application frequencies without sacrificing performance. The unique combination of bacteria in Tribus work together as a team and for the plant like no other consortia of microbes. Of the 10 billion CFUs per milliliter, 4 billion are *Bacillus subtilis*, 4 billion are *Bacillus pumilus*, and 2 billion are *Bacillus amyloliquefaciens*.

Tribus can be used with conventional and all other fertilizer programs from the seedling stage up to the day of harvest. It can be used in soil or soilless growing medias including hydroponic systems and rockwool. *If it has roots, Tribus will help!*



79 kg)

1

WHAT'S INSIDE?

CFU/mL (in billions)*

*What is a CFU?

CFU, or Colony Forming Unit, is a measure of viable bacteria in each milliliter of product. The more CFUs, the greater the effect of each application.

Bacillus subtilis

- Solubilizes K
- Releases soil-bound macro and micro nutrients
- Improves root growth
- Produces siderophores that chelate micronutrients

PROVEN RESULTS:

- +15% increase dry yield
- +16% in stem diameter
- +14% in growth rate*

18 month shelf life

TOGETHER:

- Promote vigorous root growth
 - Naturally increase plant tolerance to abiotic stress
- Encourage fast + prolonged nutrient mobilization
 - Restore soil health
 - Increase plant yield

Bacillus amyloliquefaciens

- Mobilizes P
- Promotes growth of roots + shoots
- Improves abiotic stress tolerance
- Enhances Water Uptake

Bacillus pumilus

- Fixes N in deficient conditions
- Improves nutrient availability + uptake
- Cycles nutrients
- Degrades organic material for plant uptake

BENEFITS OF TRIBUS

Consortia: Tribus® Original is a combination of three growth-promoting bacteria that work synergistically to promote aggressive plant growth. Together, these bacteria mobilize locked-out and soil-bound nutrients that are otherwise unavailable to the plant and encourage root growth for greater nutrient and water uptake.



Efficacy: From the field to the greenhouse, Tribus® promotes rapid plant growth in ways traditional inputs can't. The high concentration of bacteria ensures efficacy even at extremely low application rates, and the nutrient-mobilizing capabilities of Tribus means that most farmers can fertilize less and yield more while improving their soil quality for years to come.

Persistence: The bacteria in Tribus® have each other's backs. On top of their endospore-forming ability, which helps them stick to soil particles instead of washing-out and helps them survive fluctuations in pH, water and nutrients, and temperatures, each species of bacteria in Tribus® help each other thrive in the root zone. This means that Tribus continues to work in complex field-soil ecosystems where other inoculants lose efficacy almost immediately after application.



Universal: Tribus® can be tank-mixed and applied with all types of fertilizers, biostimulants, other beneficial microorganisms, and even most pesticides to save you time and effort. Because Tribus® is highly salt- and pH-tolerant, you don't have to worry about losing efficacy when mixing with strong fertilizers. Plus, Tribus® is free-flowing, so it won't clog injectors, drip lines, or hydroponic systems. Ever.

Tribus can promote the **root structure** and **vigor** of just about any plant!



APPLICATION RATES

CONTAINER

Lite: 0.5 mL/gallon of nutrient solution

Recommended: 1 mL/gallon of nutrient solution

Heavy: 2 mL/ gallon of nutrient solution

Frequency: Use at least once per week or as frequently as every watering

FIELD

Lite: 0.5 Liter / Acre

Recommended: 1 Liter / Acre

Heavy: 2 Liters / Acre

Frequency: 2-4 applications per month

NOTE: Unlike conventional fertilizers, biological input rates are based on more than plant nutrient needs alone. Tribus works within a wide range of application rates and should be applied in consideration of the crop's environment and other inputs. For greater microbial activity, apply a higher rate of Tribus. For typical crop maintenance, lower application rates of Tribus are sufficient. Please contact us directly for individual consultations by emailing tech@impellobio.com And remember: "Inputs define the crop; the crop does not define the inputs."

TRIBUS IS **USDA** BIOPREFERRED®

Tribus microbes are the first products of their kind to be certified by the United States Department of Agriculture's (USDA) BioPreferred Program. Products in the BioPreferred Program are derived from completely renewable resources and provide an alternative to conventional petroleum-based products. BioBased products perform as well or better than conventional, petroleum-containing products and by choosing a BioBased product, you're reducing strain on the environment and doing your part to minimize your carbon footprint.

Impello Biosciences is proud to offer BioPreferred products ranging from 64%-100% BioBased Ingredients.



“BioBased products displace around 300 million gallons of petroleum per year in the U.S., which is the equivalent of taking 200,000 cars off the road.”

- Economic Impact Analysis of the US BioBased Products Industry, 2015

TRIBUS
AVAILABLE

SIZES



250ML / 500ML / 1L



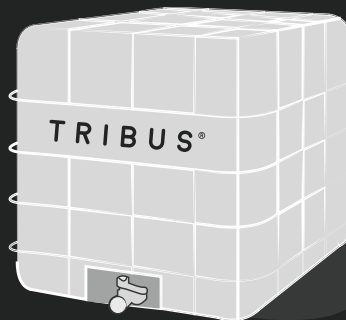
1 GAL



5 GAL



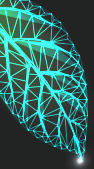
55 GAL



275 GAL



OMRI-certified Tribus® Original is available. Be sure to ask for the OMRI-certification when ordering if your farm requires NOP/COR inputs.



INNATE NUTRIENTS

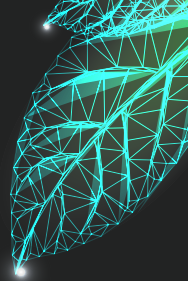
Liquid organic nutrients for superior yield and flower quality



Innate™ is our one-part organic nutrient line that provides a simple and effective solution for growing plants from start to finish. **Innate Grow** and **Innate Bloom** are made in the USA from fresh fish and contain valuable amino acids and compounds that other organic fertilizers lack, promoting plant health and improving flower quality via enhanced nutrition. **Innate** may be used in conjunction with other fertilizers or independently as a stand-alone fertilizer. Tribus, Lumina, and Gamma all work symbiotically with **Innate** fertilizers. Ideal for simple, effective, organic farming.

LUMINA™

Amino Acids + Polypeptides



Lumina™ is a unique foliar or root drench biostimulant produced via microbial fermentation that was developed to increase plant and soil bioactivity. **Lumina's** unique composition retains carbon, nitrogen, true protein, free amino acids, and polypeptides that help improve natural processes resulting in improved plant growth, enhanced microbial functions, greater root development, and increased tolerance to abiotic stress. By promoting plant nutrition and vigor **Lumina** increases plant performance, overall quality, flavor, and yields. Your plants will love **Lumina**!

GAMMA

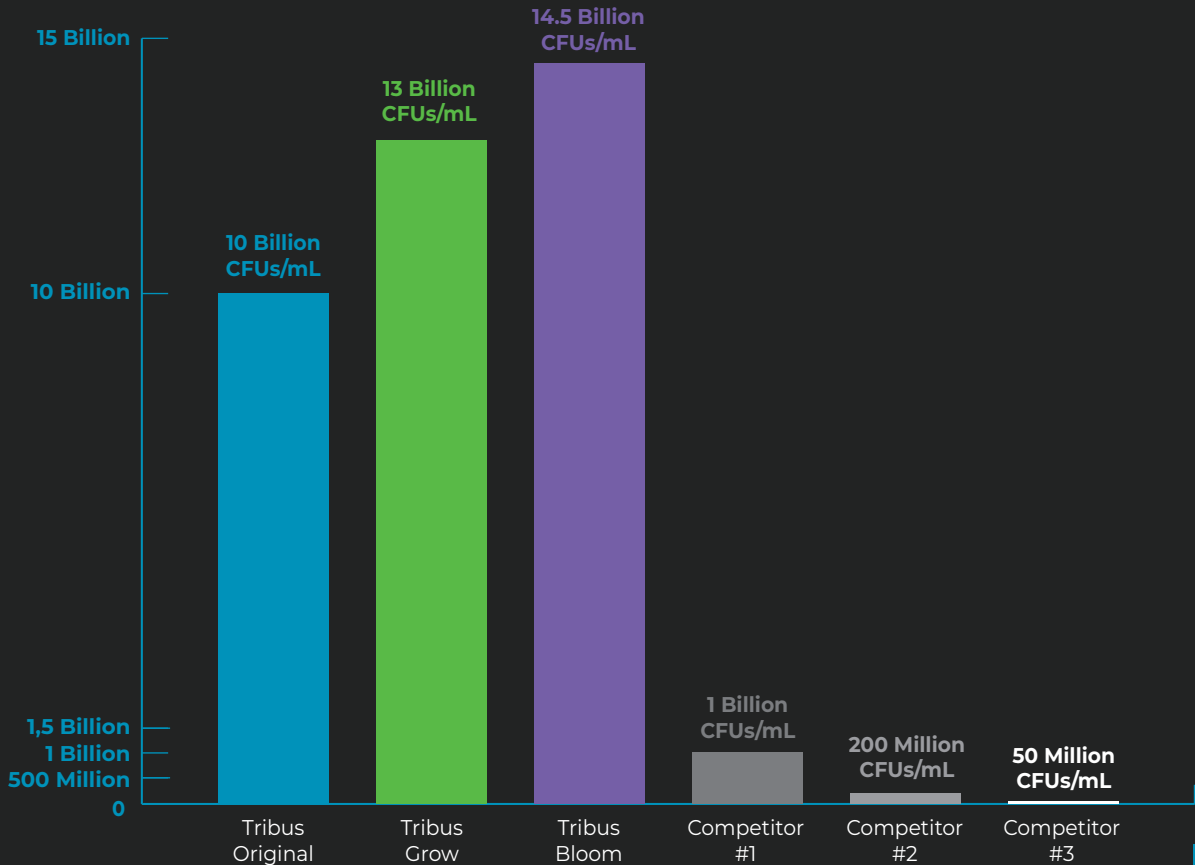
Coming Soon!



Gamma™ is set to be released early 2021 at which point more information regarding this product will be available. Visit us at impellobio.com for updates!

BACTERIA PER mL

Tribus® vs competitors





OUR ROOTS

Impello Biosciences was founded in Fort Collins, Colorado on a simple premise: biostimulants make agriculture better for everyone. Our integrated solutions, ranging from microorganisms to other bioactive compounds, help farmers everywhere increase the quality and yield of every harvest. Impello addresses tough agricultural challenges with next-generation biotechnology to support a better, healthier, and more sustainable planet. We're developing solutions that increase profitability and reduce risk from the field to the greenhouse and everywhere in between. With biostimulant technology, we're reinvigorating soils, plants, farmers, and consumers with a powerful tool: the force of nature.



Want to learn more about Impello Biosciences?

Head to our website impellobio.com to see our catalogue of plant inputs.

Want to speak to us directly?

Call us anytime at **(720) 772.9767**, send an email to us at info@impellobio.com or shoot us a direct message on [instagram @impellobio](https://www.instagram.com/impellobio).

