2025
Annual Meeting

Biostimulants vs Biofertilizers

Industry Perspective

Lyndon Smith, CEO
Huma, Inc.

Biostimulant

Definition adopted by ISO (8157:0222)

A plant biostimulant is ***a product*** containing substances, microorganisms, or mixtures thereof that, when applied to seeds, plants, the rhizosphere, soil, or other growth media, support a plant's natural nutrition processes ***independently of the biostimulant's nutrient content.***

Definition adopted by AAPFCO from BPIA

A plant biostimulant is ***a substance, microorganism, or mixture*** thereof that, when applied to seeds, plants, the rhizosphere, soil, or other growth media, supports a plant's natural nutrition processes, ***independent of its nutrient content,*** thereby ***improving nutrient availability, uptake, or use efficiency, tolerance to abiotic stress, and consequent growth, development, quality, or yield.***

Biofertilizer - No clear global definition has been adopted:

Vessey 2003 said:

A biofertilizer is ***a substance*** containing living microorganisms that, when applied to seeds, ***plant surfaces***, or soil ***promotes plant growth by increasing nutrient availability*** or stimulating natural processes beneficial to plants.

Definition adopted by AAPFCO

A biofertilizer as ***a preparation*** containing living cells or ***latent cells of efficient strains of*** microorganisms that ***help crop plants' uptake of nutrients*** by their interactions in the rhizosphere when applied through seed or soil.

Definition developed by BPIA

A biofertilizer as any preparation of ***biological material*** intended to ***enhance nutrient availability, uptake, and/or nutrient use efficiency*** in plants and soil health, encompassing ***living microorganisms, nonliving biological residues, and natural breakdown products of biological material.***

DunhamTrimmer® Global Biofertilizers Report, Market Overview, Trends, Drivers and Insights, 2022

bpia
Biopesticide Industry Alliance

Huma.US

Who We've Been…

BIO HUMA NETICS® Incorporated

HUMA GRO®

HUMA GRO® TURF

Probiotic SOLUTIONS®

Fertilgold® ORGANICS

MESA VERDE HUMATES®

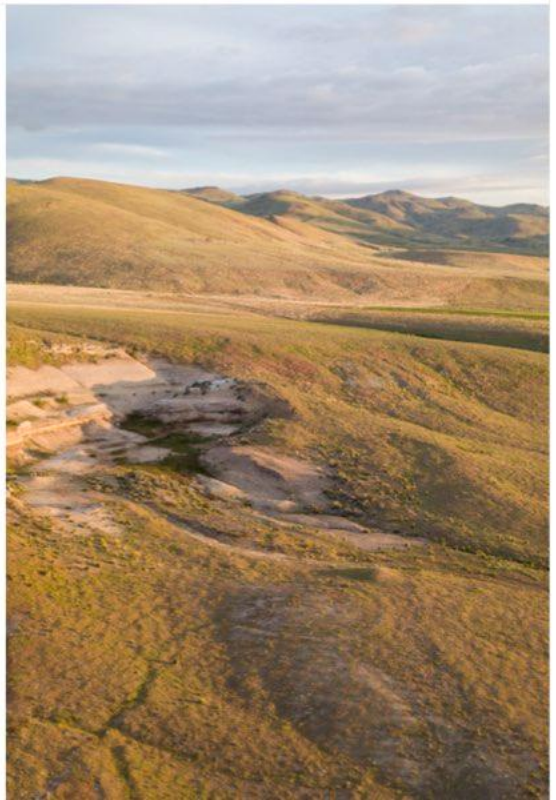
AlphaSynectics™ LABORATORIES

Anniversary

BIO HUMANETICS™
Incorporated

1973 - 2023

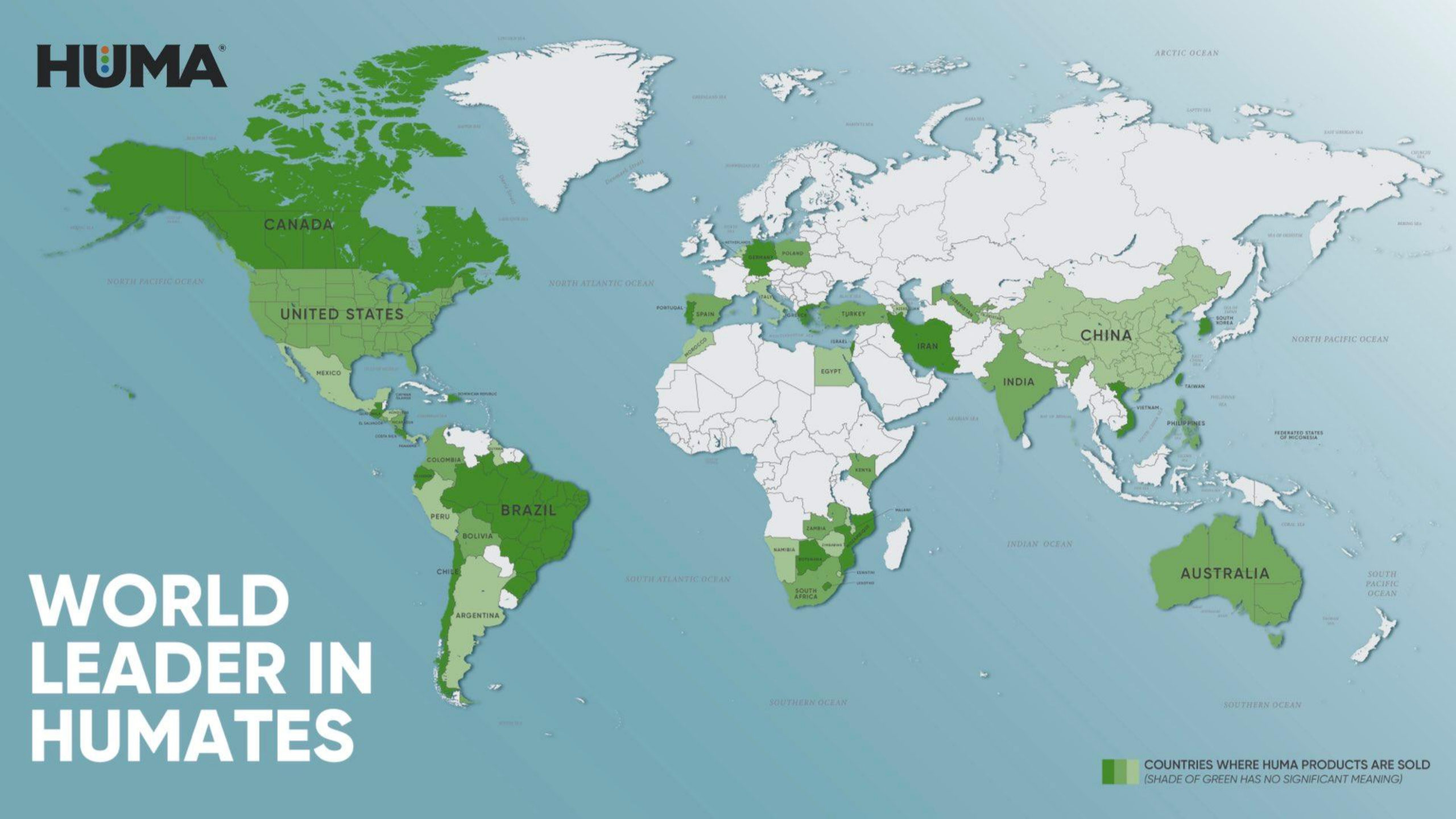

WHO WE ARE



HUMA®

- Founded in 1973 in Gilbert, AZ
- Huma Reflects Both the Strength & Nurture of Mother Nature
- Dedicated Ourselves to Innovate, Implement, & Improve the use of Humics for Soil Health, Crop Health, and Crop Protection
- We Source, Mine, and Formulate our Products *(Our mines are located in ID & NM)*
- Dry Products are Produced in New Mexico & our Liquid Products in Arizona

HUMA®



WORLD LEADER IN HUMATES

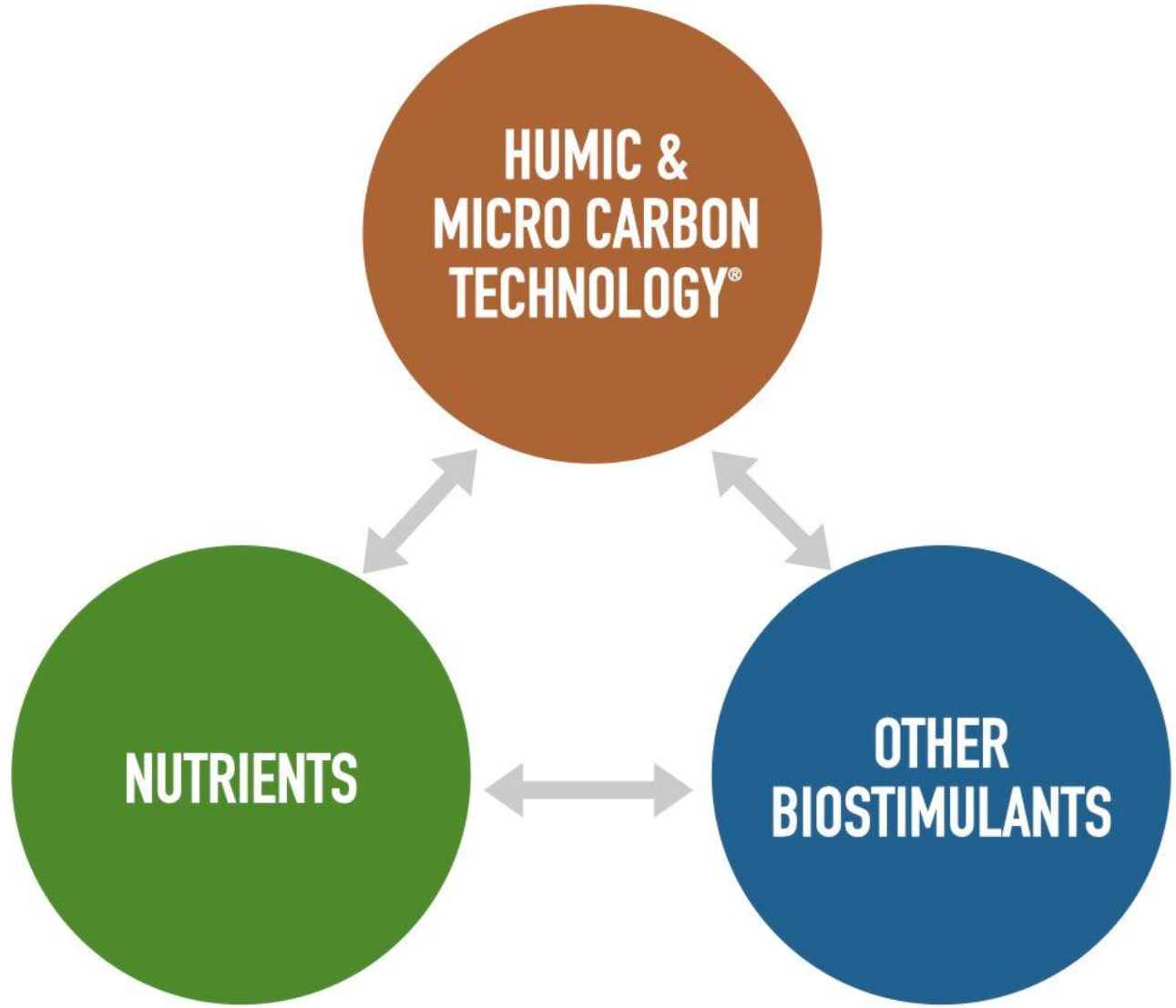
COUNTRIES WHERE HUMA PRODUCTS ARE SOLD
(SHADE OF GREEN HAS NO SIGNIFICANT MEANING)


HOW HUMA CAN HELP


HUMA®
“Inspire Growth”

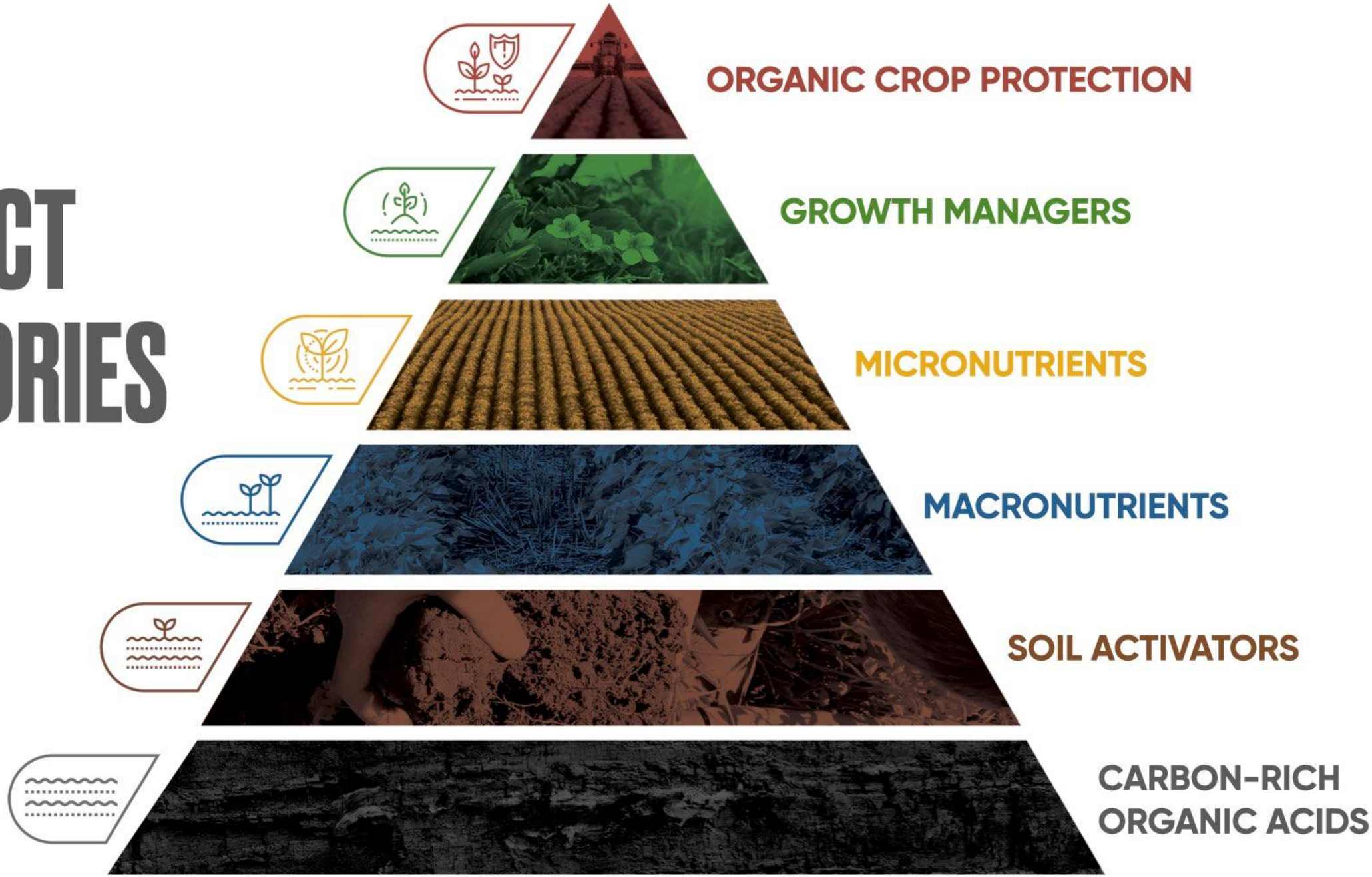
OUR THREE PILLARS

Huma's products contain a portion of each group depending on the category/class of the product.



HUMA®

PRODUCT CATEGORIES



Huma's New Mexico Mine

OM 2-6 mm
Screened to a particle size of 2-6 mm

OM 6 mm (-)
Ground to quarter-inch & smaller particle sizes

MicroHumic® OM
Particle size of 15 microns

OM 1-3 mm
Screened to a particle size of 1-3 mm (<3% dust)

K-Hume® OM
Combined with potassium hydroxide - 76% soluble

OM Greens
Screened to a particle size of 1-2 mm

RAW HUMATES

MicroMate
Not fully water soluble, added to create suspensions.

OM Soluble Powder
Fully water soluble.
Stable above 5.5 pH.

Stable Sol® Powder
Fully water soluble.
Stable at all pH ranges.

PROCESSED & LIQUID ADDITIVES

Huma's Idaho Mine

HUMA®
Formerly known as Bio Huma Netics®

Micro Carbon Technology®

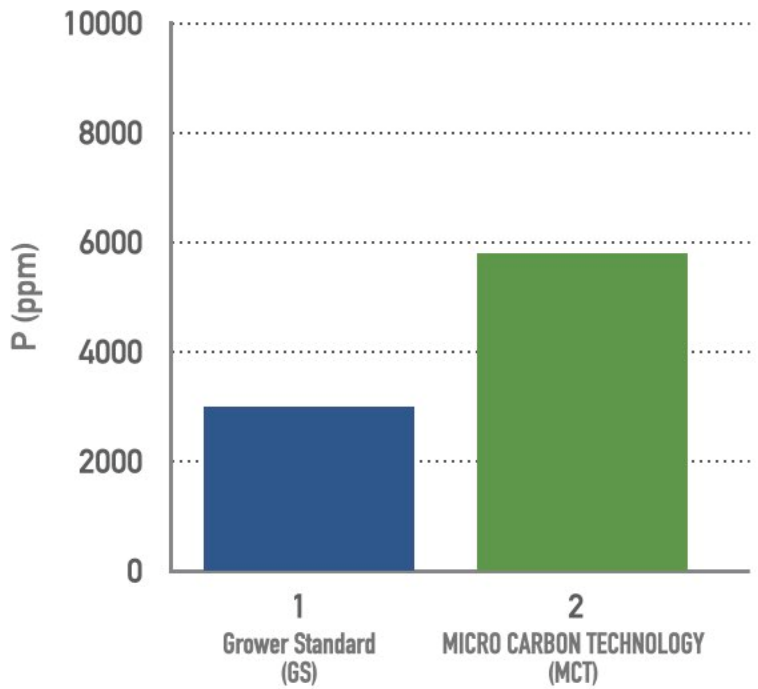
- Proprietary to Huma®
- Most Efficient Delivery Vehicle on the Market
- Foliar or Soil Applied
- Achieve Far More with Less Product *(Lower Volume & Less Product to Handle)*
- Fast-acting Source of Carbon
- 1-hour Absorption Rate

MCT BIOAVAILABILITY

Micro Carbon Technology®

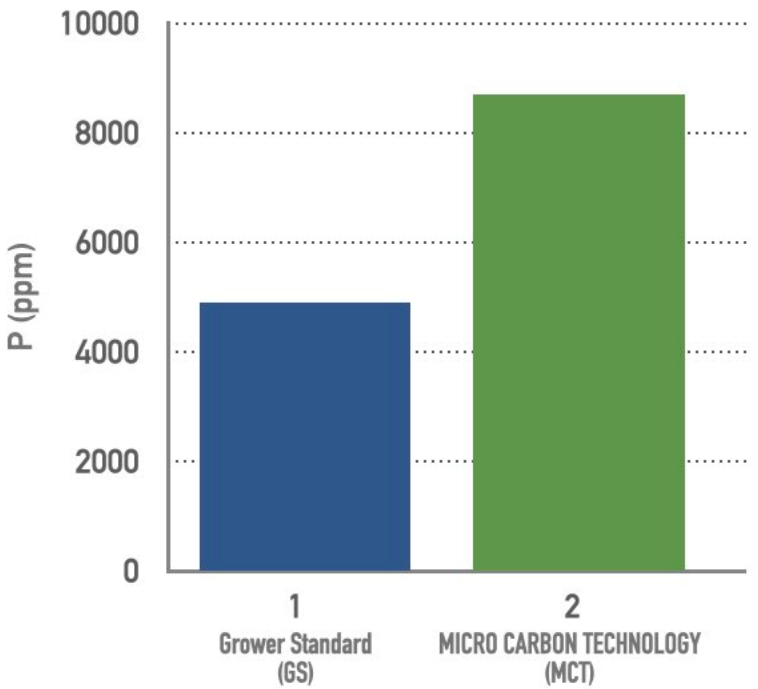
MCT ENHANCES UPTAKE OF NUTRIENTS IN TREATED PLANTS

EFFECT OF ROOT APPLIED MCT ON NUTRIENT CONCENTRATIONS IN CORN



60% INCREASE IN P UPTAKE IN ROOTS WITH MCT

EFFECT OF FOLIAR APPLIED MCT ON NUTRIENT TRANSLOCATION IN CORN



70% INCREASE IN P UPTAKE IN LEAVES WITH MCT

HUMA®
Formerly known as Bio Huma Netics®

Membership in Humic Substances Associations

HUMIC PRODUCTS TRADE ASSOCIATION
ESTABLISHED 2010

International Humic Substances Society

HUMA®
Formerly known as Bio Huma Netics®

Membership in Industry Associations

TFI's Biostimulant Certification Program

HUMA®


HUMA®
QUESTIONS?