

## HUMIC ACIDS

The end result of the composting of ancient plant and animal matter. These complex organic molecules are considered by many to be very beneficial.

- I. Biologically stimulates the plant.
- II. Chemically changes the fixation properties of the soil, improving CEC (carbon exchange capacity).
- III. Physically modifies the soil.

According to research conducted by Texas A&M's Professor Emeritus, Dr. Robert Pettit--- humic acids produce all of the physical, biological and chemical benefits you will see on the next page.

Besides Dr. Pettit, the USDA and over 20 major universities have conducted research on humic acids and have concluded that they are a monumental discovery in plant nutrition and soil fertility!

## Why Use Humates?



Seeing is Believing...

**CALL US  
TODAY TO  
IMPROVE  
YOUR SOIL!**

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Hogansville, GA 30230

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Website: [www.UnitedStatesAg.com](http://www.UnitedStatesAg.com)

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**CleanGreen®**

# Huma-Tec

## Humic Acids & Trace Minerals

Humic Acids help correct multiple deficiencies in crops by providing high quality micronutrients for healthy plants and better yields!

This unique blend of humic acids, cultured soil bacteria and trace minerals, can be easily applied with other liquid fertilizers allowing you to have spectacular results.



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## Physical Benefits

Make soils more friable or crumbly – breaks up hardpan (dense layer of soil)

Increases water holding capacity  
(up to 7 times)

Breaks down crop residues

Improves soil workability

Increases aeration of soil

Builds organic matter

Reduces soil erosion

Improves seed bed

Stabilizes soil temperature

Restores and enlivens tired, worn out soils

Farmers that have already reached optimum fertilization practices see significant improvement in nutrient uptake, plant growth, and yield by incorporating humic acid into their fertilizer programs!



## Chemical Benefits

Helps convert elements to plant food

Rich in organic / mineral substances

Retains soluble fertilizers in root zone

Has high ion-exchange capacities

Time releases nutrients as needed

Stabilizes nitrogen applications

Breaks down salt complexes

Buffers pH of soils

Absorbs toxins like salt water and pesticides.

Carbon charges bind to the toxic molecule, allowing microbes to break it down

## Biological Benefits

Boosts growth of desirable soil life

Increases germination of seed

Improves plant respiration

Stimulates root growth

Stimulates plant enzyme

Improves nutrient uptake

Stimulates growth at all stages

Increases vitamin content of plants

Acts as an organic catalyst

Feeds microorganisms that recycle nutrients and produce antibiotics

Increases metabolism within moments after foliar application

Regulates growth hormones

A broadcast application can restore and enliven tired, worn out soils. It is a great tool for both no-till and conventional farmers because not only does it do all these things, but plant uptake is improved for most additives whenever humic acid is included in the mix!