



Fertilizer Additive

Application Rates and Timing

KaPre® AG is suitable for use on all crops.

New Plantings: Apply 6 – 12 ounces of KaPre® AG per acre before and/or at planting. If possible, apply every 2 – 4 weeks during the growing season.

Perennial Crops: Apply 6 – 12 ounces of KaPre® AG per acre at or just prior to emergence. Apply every 2 – 4 weeks during the growing season.

Seed Treatment Additive

Application Rates and Timing

Commodity Crops (corn, soybeans, wheat, etc.): Use 1 – 4 ounces per hundred pounds of seed.

**** Consult with your Performance Nutrition representative before treatment ****



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Seed Treatment & Fertilizer Additive



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enhances **NUTRIENT UPTAKE**

revitalizes **SOIL MICROFLORA**

supports a **HEALTHY ECOSYSTEM**

KaPre® AG Seed Treatment and Fertilizer Additive is an innovative product designed to influence and enhance several parameters of a healthy and productive crop. KaPre® AG's impact begins with improved germination and its continued impact on the soil's microflora, nutrient availability and structure can be felt long after application.

KaPre® AG is formulated specifically to **enhance nutrient uptake** while **nourishing dense populations** of native **beneficial microbes**. KaPre® AG also **delivers** flourishing populations of **powerful microorganisms**, including a patented strain of *Bacillus amyloliquefaciens* with unique capabilities.

KaPre® AG contains only premium natural components – humate extracts, beneficial microbes, worm casting extract, enzymes, mycorrhizae, yucca and amino acids - that contribute to a **vigorous ecosystem, improved soil composition and structure, and optimal nutrient use efficiency.**

KaPre® AG applications **improve soil CEC's, composition, porosity, water-holding capacity and vitality,** and, **activate, nourish & increase beneficial soil microbe populations,** as well as, enhance the **plant's root development, germination rates and stress tolerance.**

KaPre® AG acts as a **"fertilizer catalyst"** by breaking down **complex molecules into simpler forms** for easy plant uptake, increasing fertilizer efficiency and the **plant's response to fertilizer applications.**

Building a Product to Build an Ecosystem

KaPre® AG starts with a blend of our proprietary fermentation broth along with KaPre® Spectra, our premium **fulvic acid, and worm casting extract.**

Fulvic acid is well known for its ability to **form metal chelates** and, facilitated by its low molecular weight, **carry nutrient and trace minerals** from the surface of the plant into the plant tissue and directly **to metabolic sites.** Proper micronutrition is important for all healthy crops.

Fulvic acid is **highly** chemically **reactive** because of its **high oxygen content** and has more than twice the exchange capacity of humic acid. This improvement in **C.E.C.** helps optimize plant nutrient uptake from soil solutions.

Fulvic acid has been shown to increase production of **ATP,** to increase **chlorophyll** development within the leaves and to increase **carbohydrate production** - which in turn **feeds microorganisms** in the rhizosphere. All of these functions are critical to a healthy plant and an efficient ecosystem.

In the early stages of plant development, fulvic acid increases **germination rates,** enhances **root initiation** and increases **root growth.**

Worm castings might be nature's perfect plant food. It contains organic nutrients along with a dynamic and diverse array of microflora. This diversity brings a natural balance to KaPre® AG's ecosystem.

KaPre® AG makes use of the available natural resources.

KaPre® AG is nutrient efficient. In addition to the improvement of nutrient uptake fulvic acid delivers, KaPre® AG contains microorganisms that **fix nitrogen from the atmosphere** and others that secrete enzymes that **degrade complex molecules into simple plant-available molecules.**

The **mycorrhizae** in KaPre® AG act as extensions of the plant roots to help them **absorb more water and nutrients from the soil.** Mycorrhizae also improve the plant's **mineral absorption capabilities** and provide access to **phosphorus** sources making them available to the plant. In addition, because mycorrhizal mycelia are much smaller in diameter than the smallest root, they can **explore a greater volume of soil,** providing a **larger surface area for absorption.**

Mycorrhizae contribute to overall plant health, and, are an important component of soil life and soil chemistry.

..... there's an enzyme for that.

KaPre® AG is home to billions of cfu/ml of two known Plant Growth-Promoting Rhizobacteria (PGPR) – *Bacillus megaterium* and a patented strain of *Bacillus amyloliquefaciens.*

Both are hardy bacteria and are tolerant of temperature changes and pH fluctuations. Both are aerobic microbes but *Bacillus megaterium* is also capable of growing in reduced oxygen conditions when necessary.

Bacillus amyloliquefaciens has the rare ability to decompose macromolecules into basic organic molecules for easier and quicker plant uptake. *Bacillus amyloliquefaciens* also produces **lipopeptide** compounds, which increase the plant cell permeability by forming ion-conducting pores.

Both bacteria produce a wide array of enzymes and substances that are important to plant health and vigor. They include:

- **Amylase,** an enzyme that **breaks down starch into sugar,** an important source of energy for plants and turf.
- **Cellulase,** a class of enzymes that **catalyzes the decomposition of cellulose,** a process of significance in breaking down recalcitrant crop residue such as corn stalks.
- **Lipase,** a water-soluble enzyme that performs essential roles in lipid metabolism.
- **Phytase,** which acts on **phytate,** the principal **storage compound of phosphorous** in plants, **mobilizes inorganic polyphosphates** and is critical in making phosphorous available, particularly in cases of limited phosphate availability. The phytase has shown a tendency to colonize the roots making it a very efficient phosphate mobilizer.
- **Protease breaks down proteins into plant usable amino acids.** With the expanded usage of animal based fertilizers, protease is needed to break the bonds that link amino acids together and make them plant available.
- **Subtilisin** is active in the breakdown of proteins and polypeptides.

KaPre® AG is versatile!

Use KaPre® AG as:

- **Seed Treatment Additive** to improve germination rates, establish and nourish populations of beneficial microorganisms and to stimulate a growth response.
- **Fertilizer Additive** to supplement existing fertilizers and plant foods.
- Part of a **soil ecosystem management** program.
- **Fertilizer Catalyst** to improve NPK nutrient efficiency.

KaPre® AG is versatile! Increased populations of beneficial soil microorganisms



- *Bacillus amyloliquefaciens* - broad spectrum of enzyme activity
- *Bacillus megaterium* - enhances organic matter decomposition
- *Bacillus licheniformis* - produces extracellular enzymes associated with the cycling of nutrients in the soil ecosystem
- *Bacillus subtilis* - metabolizes phosphate, nitrates and other plant nutrients into more bio-available forms
- *Glomus intraradices* - mycorrhizae that act as extensions of the root surface to enhance water and nutrient uptake