

# Protene™

## Performance Fertilizer



*New to the U.S.A, Protene® gives you...*

# ***TOTAL CONTROL***

*releases ALL nutrients, in sync,*

up to **120** days



# **TWO NEW CONCEPTS IN** *nutrient release and control*

- Patented Chelating and Granulation Methods
- Complex New Protein Source

***Puts you in...***



# ***TOTAL CONTROL***

**Performance Fertilizer**



# CURRENT TECHNOLOGIES

- Current “controlled release” MU & other NPK type fertilizers (higher end) products – are they really controlled release?
- Most of the nutrients (other than N) are left to the mercy of the environment...**NOT** controlled
- Predicting the overall nutrient release can be guesswork, dependent on too many variables – i.e. weather and temperature.
- Most are not chelated or complexed

# ***SAME OLD, SAME OLD***

- No significant new technology released for many years
- Current environmental concerns and regulations have instigated this new research
- Older technology will become obsolete, and in some cases, illegal!
- Some states already introducing new laws, **NY, CT, MA, NJ, CA** among them

# THE USUAL suspects

- Ag. Grade mineral fertilizer blends
- Coated products (SCU, Polymer coated etc.)
- Combined “homogenous” formulations (*pan granulated*), all mineral, bridge, all organic)
- “Bridge” blended fertilizers (not homogenous – segregates)
- Organic fertilizers – poultry manure (salt), sewerage sludge (heavy metals), hydrolyzed (dried) meals (pelleted, crumbled or *pan granulated* – very friable particles)

# OLD GRANULATION METHODS

## *pellet and crumble*

Very old technique, but still used in a lot of cheap organic and bridge fertilizers - usually very dusty

## *pan granulation*

Most common method used today - results in layering of the components, meaning no control over the water soluble fractions and minor nutrients like zinc, magnesium, manganese, iron etc.





***Pellet mill examples.***



## **Some Examples of Pan Granulators used in the USA**

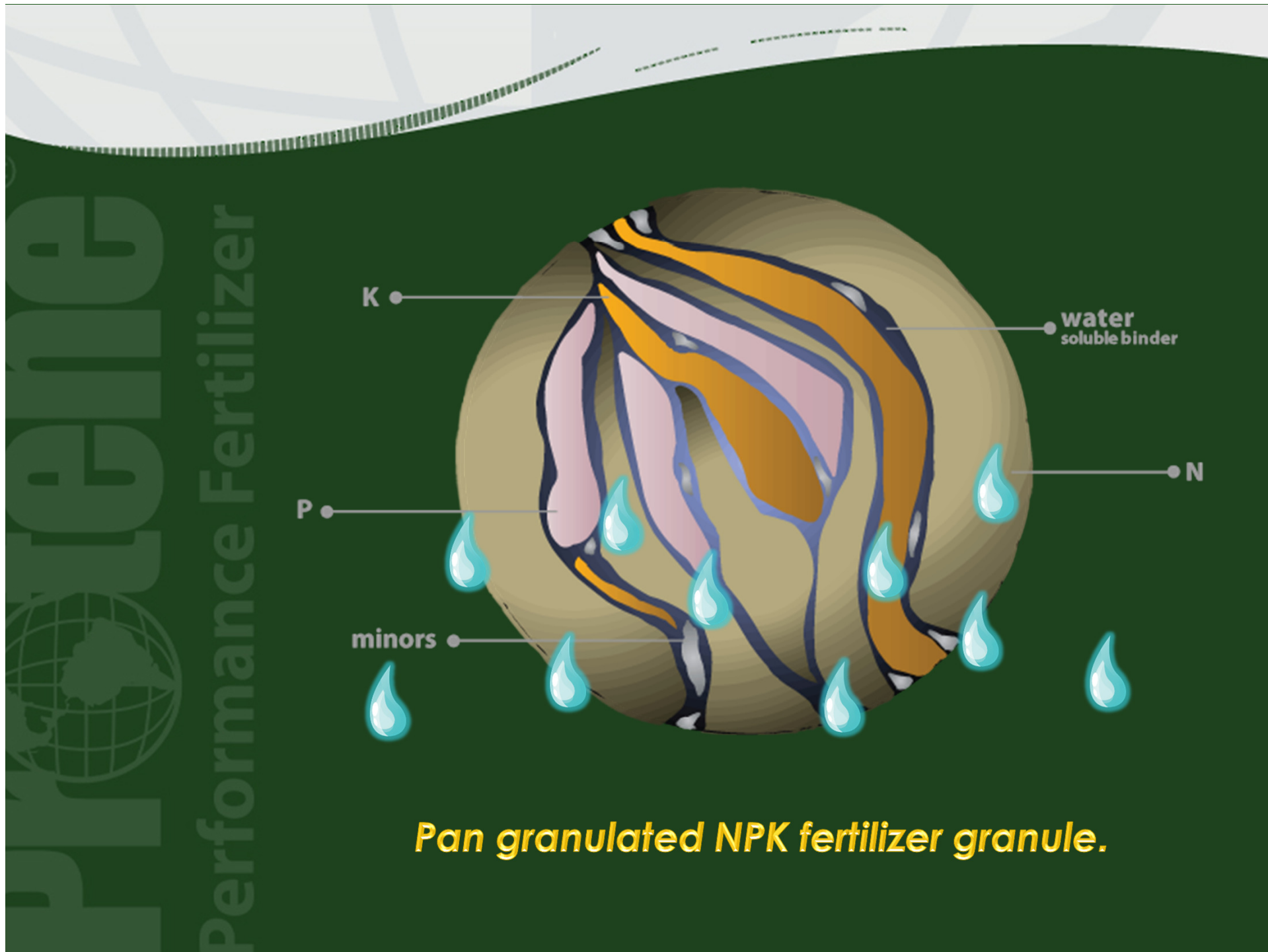


**Notice the size of some (Inaccurate blending)**




# Performance Fertilizer



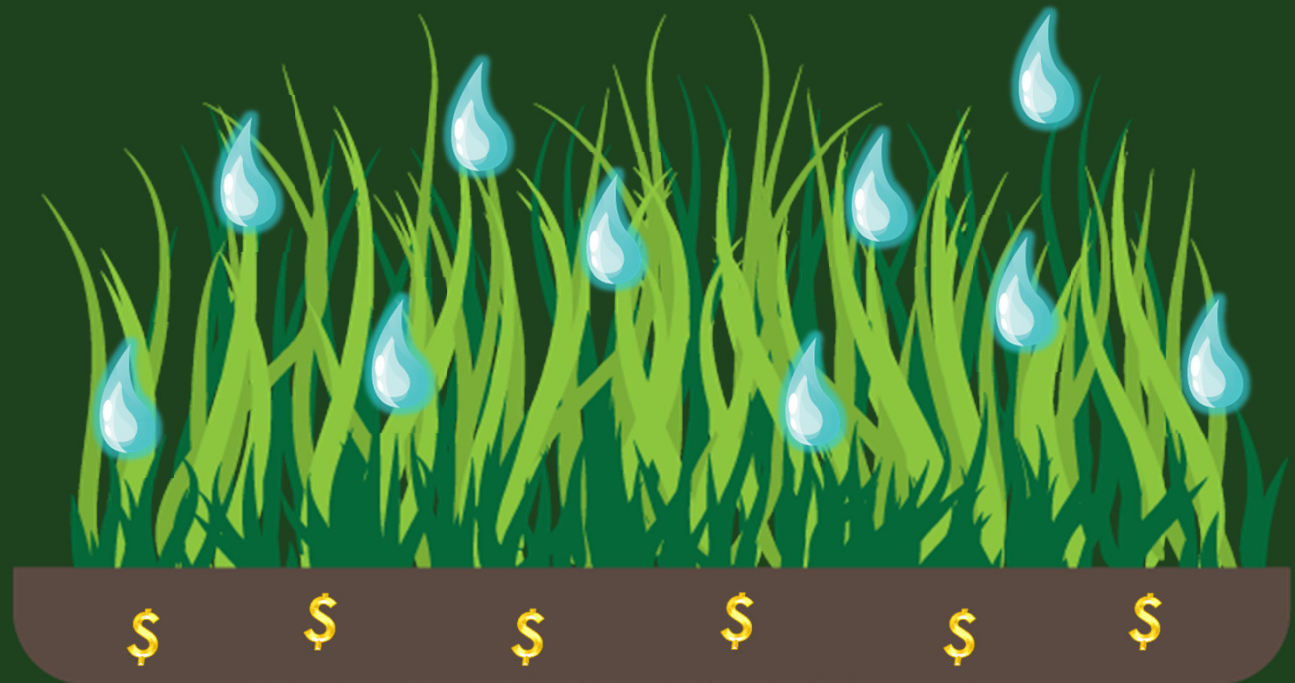




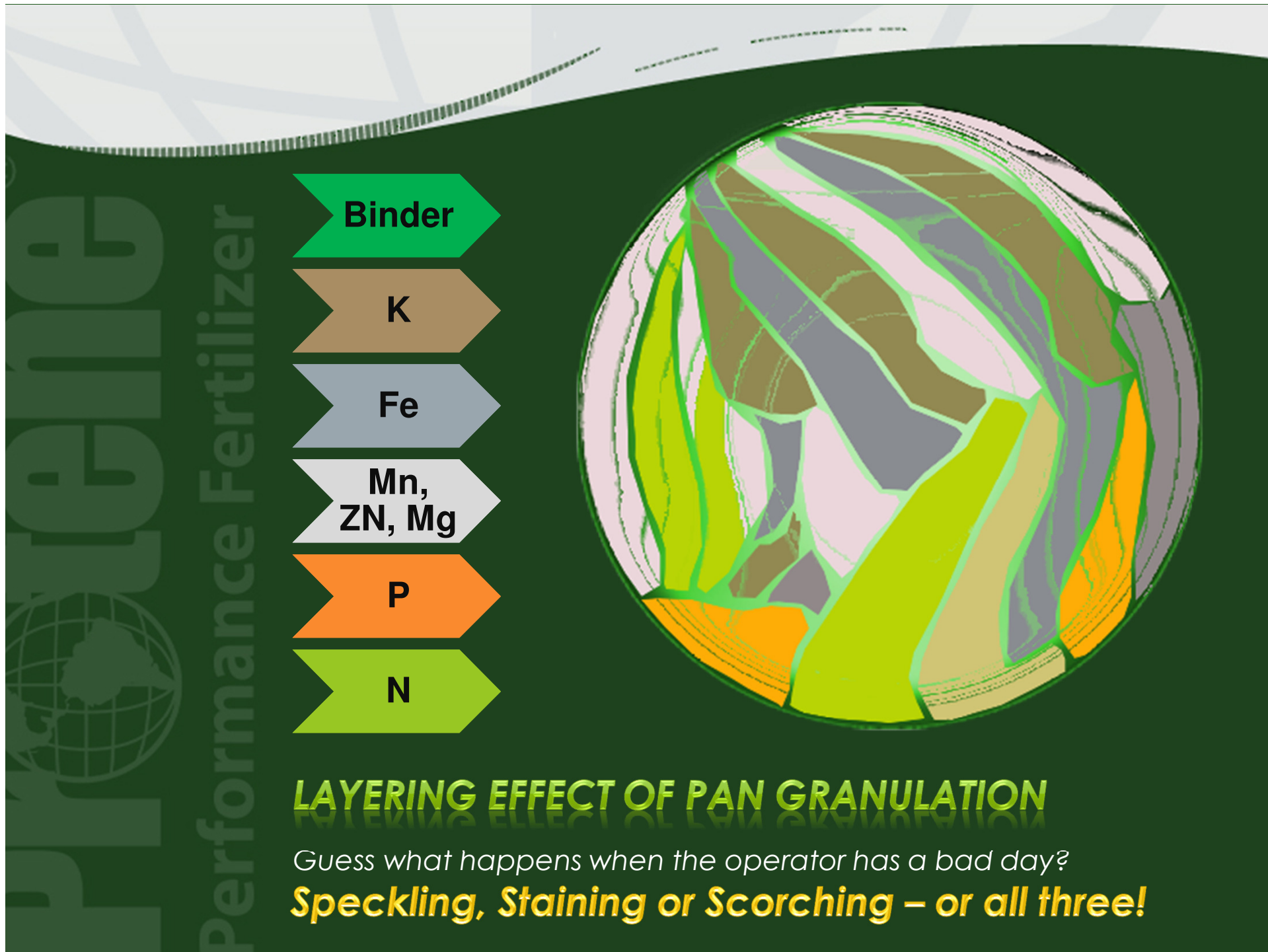


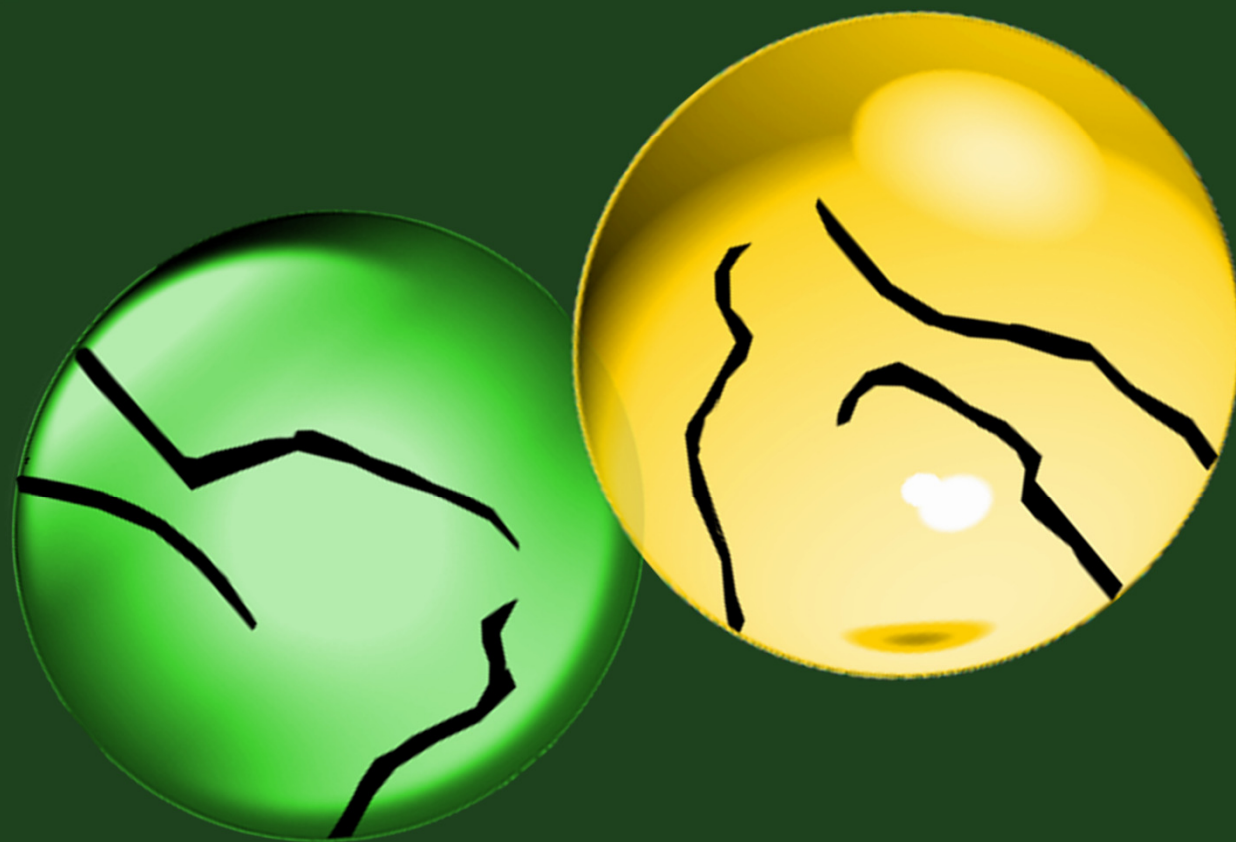
*After irrigation, all that is left is controlled  
release Nitrogen (Methylene Urea)*

# YOUR HARD EARNED MONEY *down the drain*









***Sulfur or Poly Coats crack and wear, meaning  
loss of control! (controls Nitrogen only)***

**Pro****tene®**

**A NEW CONCEPT**

*new technology*

*new patents*

*better nutrition*

# **REAL CONTROLLED RELEASE** *of everything!*

- All Nutrients, N, P, K + Minors + Protein (over 22 amino acids) + Humic & Fulvic acids are controlled
- Nutrients release uniformly, in sync
- Total nutrient release controlled by MU matrix technology
- Process allows simultaneous release of macro nutrients, micro nutrients and proteinaceous amino acids.

# Protene®

## TECHNOLOGY PATENTS

- Methylene Urea (MU) matrixed technology complexed with proteinaceous amino acids
- “In-Situ” MU synthesis and reaction is part of the granulation process
- MU complexes protein, macro and micro nutrients



*Their granulator!*





# Our granulation process!

< dry feed bin

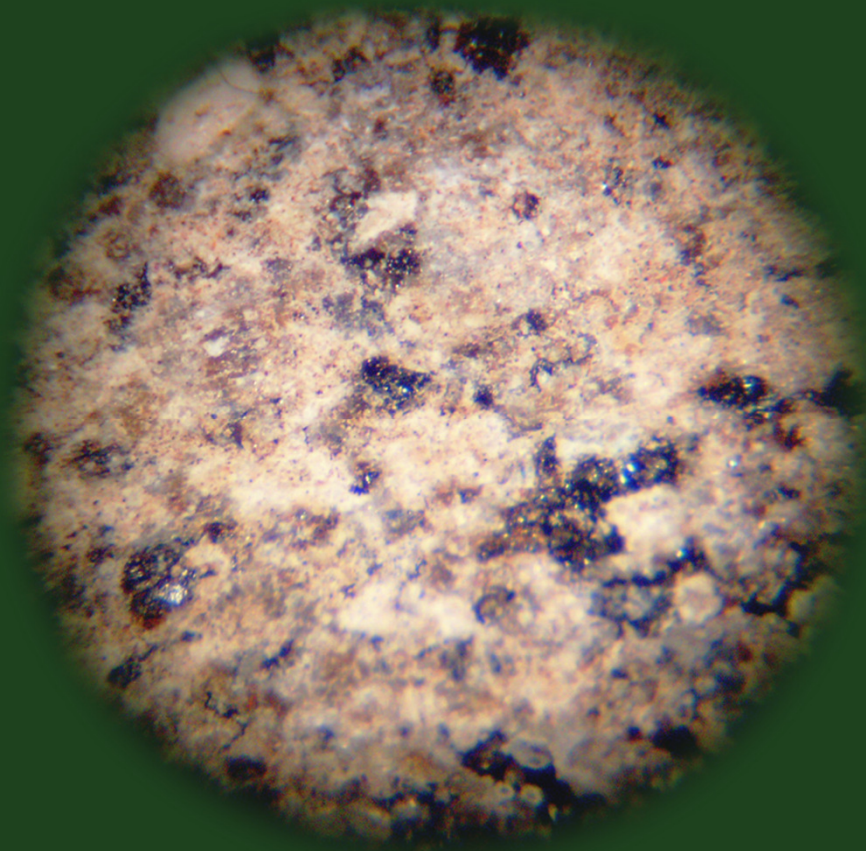
reactor / granulator >

MU reactor tank >

Man / Machine interface (MMI) >





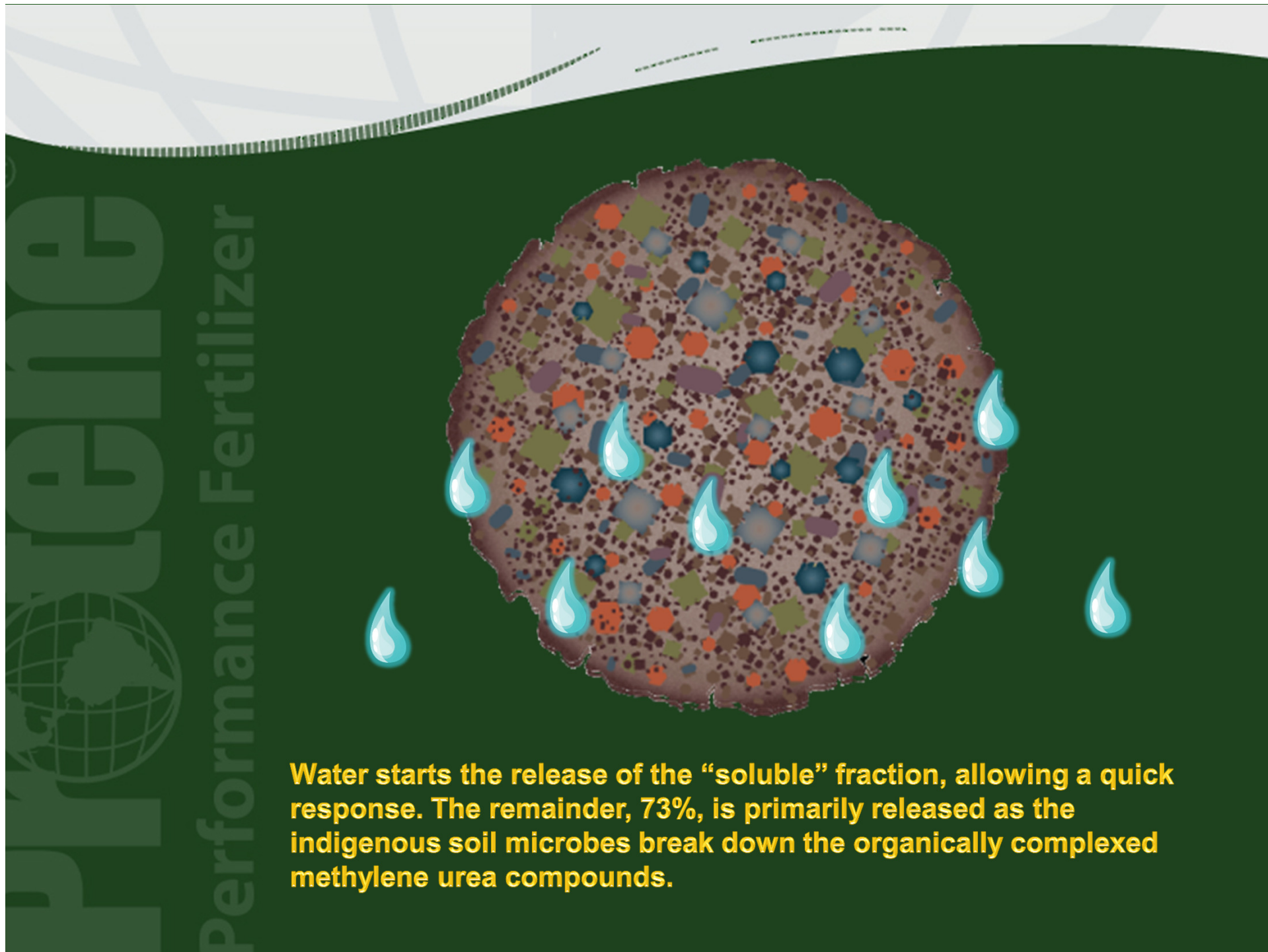


Lighter Colors are  
Complexed MU , Soluble  
Urea, and Ammonium  
Sulfate

Colors are minors, and P  
& K

(actual granule 19-0-19)

Methylene Urea creates a matrix that locks nutrients in a homogeneous granule. This process encapsulates all nutrients in the granule, and the release is then determined by soil microbes; the release can be up to 120 days!

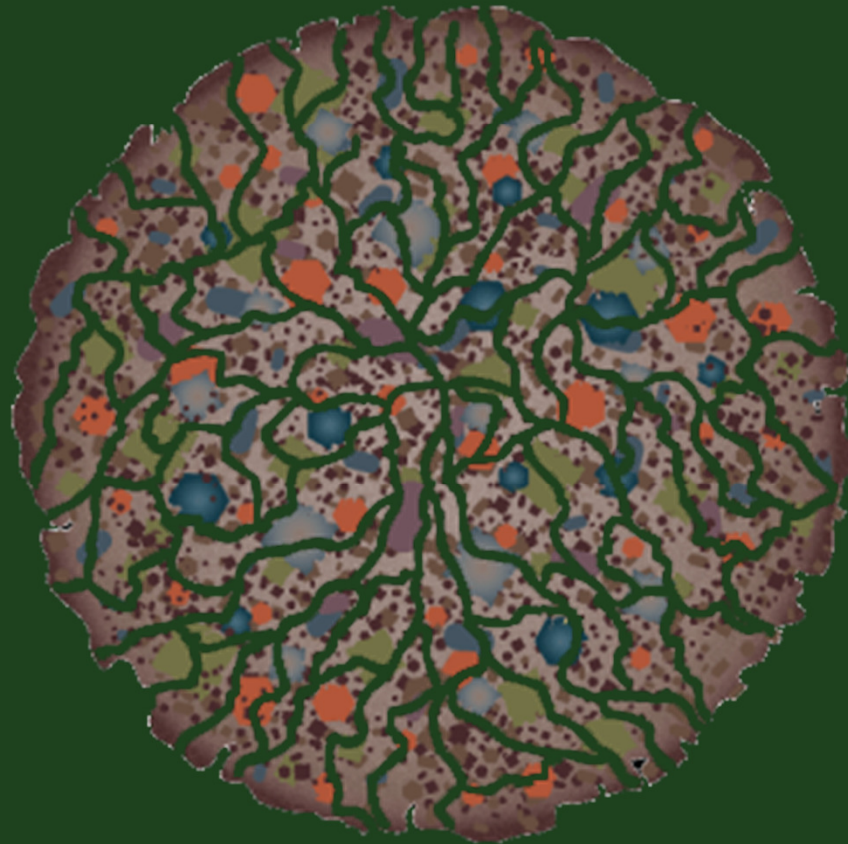


**Water starts the release of the “soluble” fraction, allowing a quick response. The remainder, 73%, is primarily released as the indigenous soil microbes break down the organically complexed methylene urea compounds.**



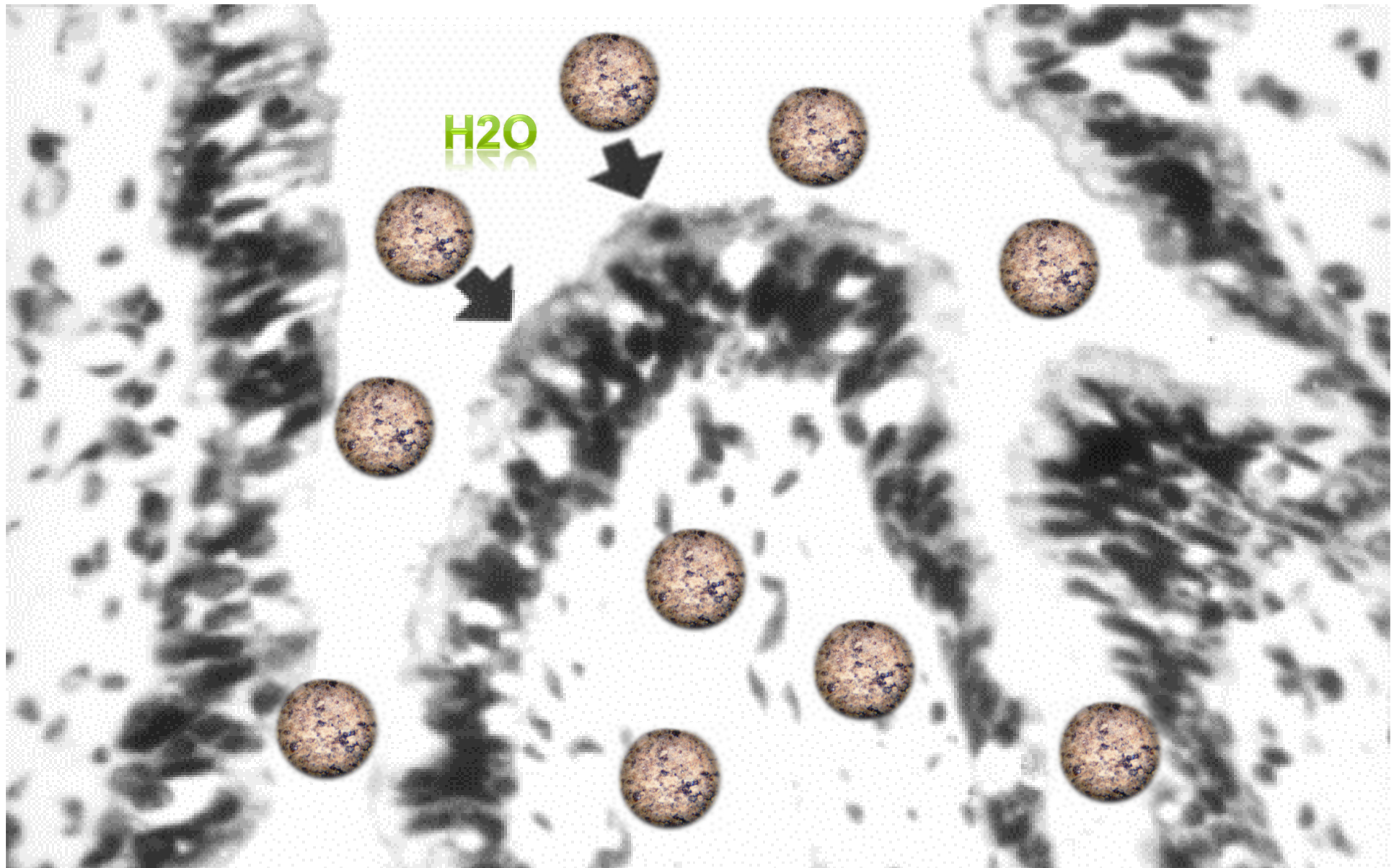
# PRIME

## Performance Fertilizer

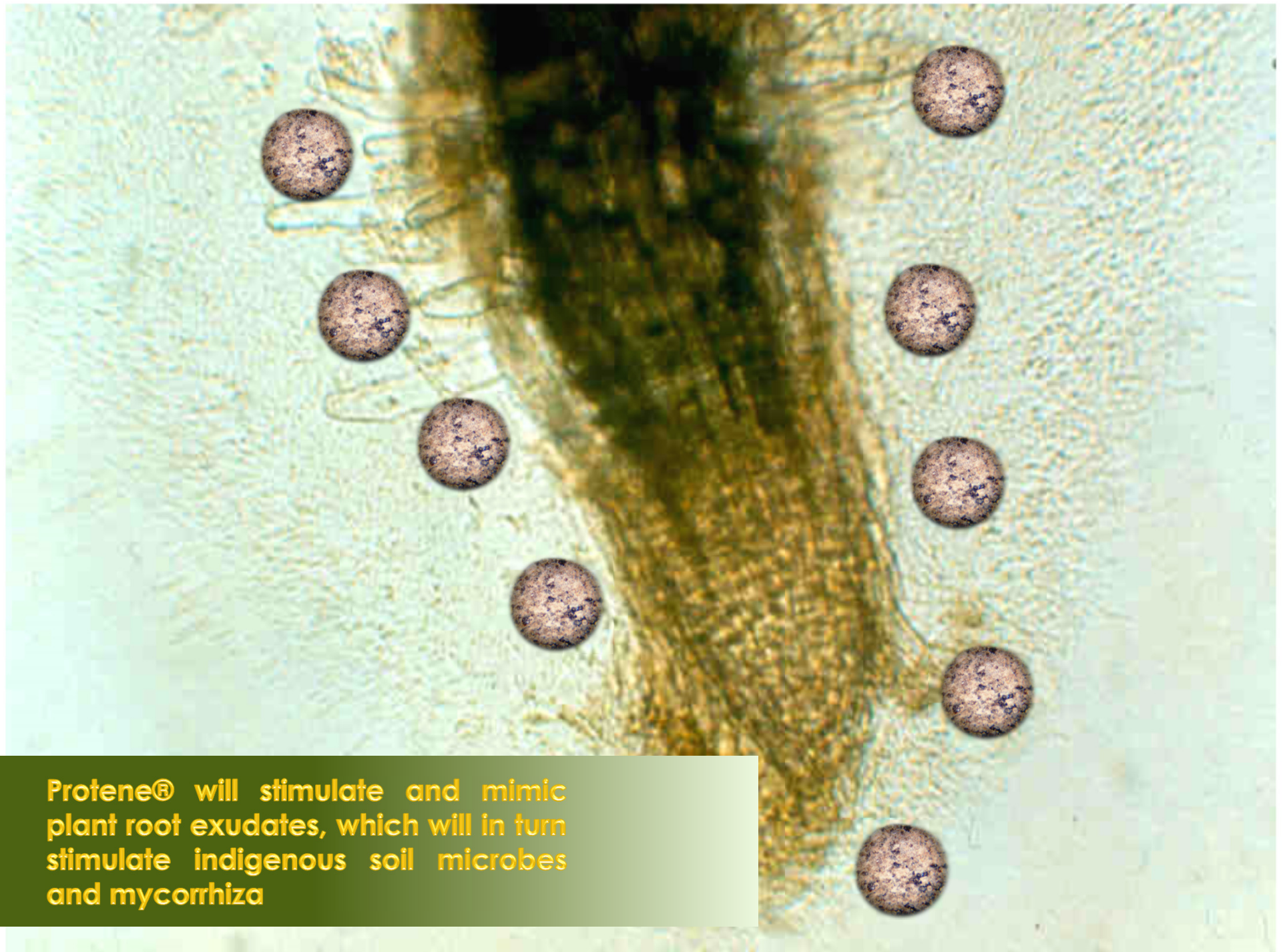


**Granular integrity is maintained throughout the life of the product, and a honey-comb like structure forms, where all nutrients release simultaneously over the controlled release period**



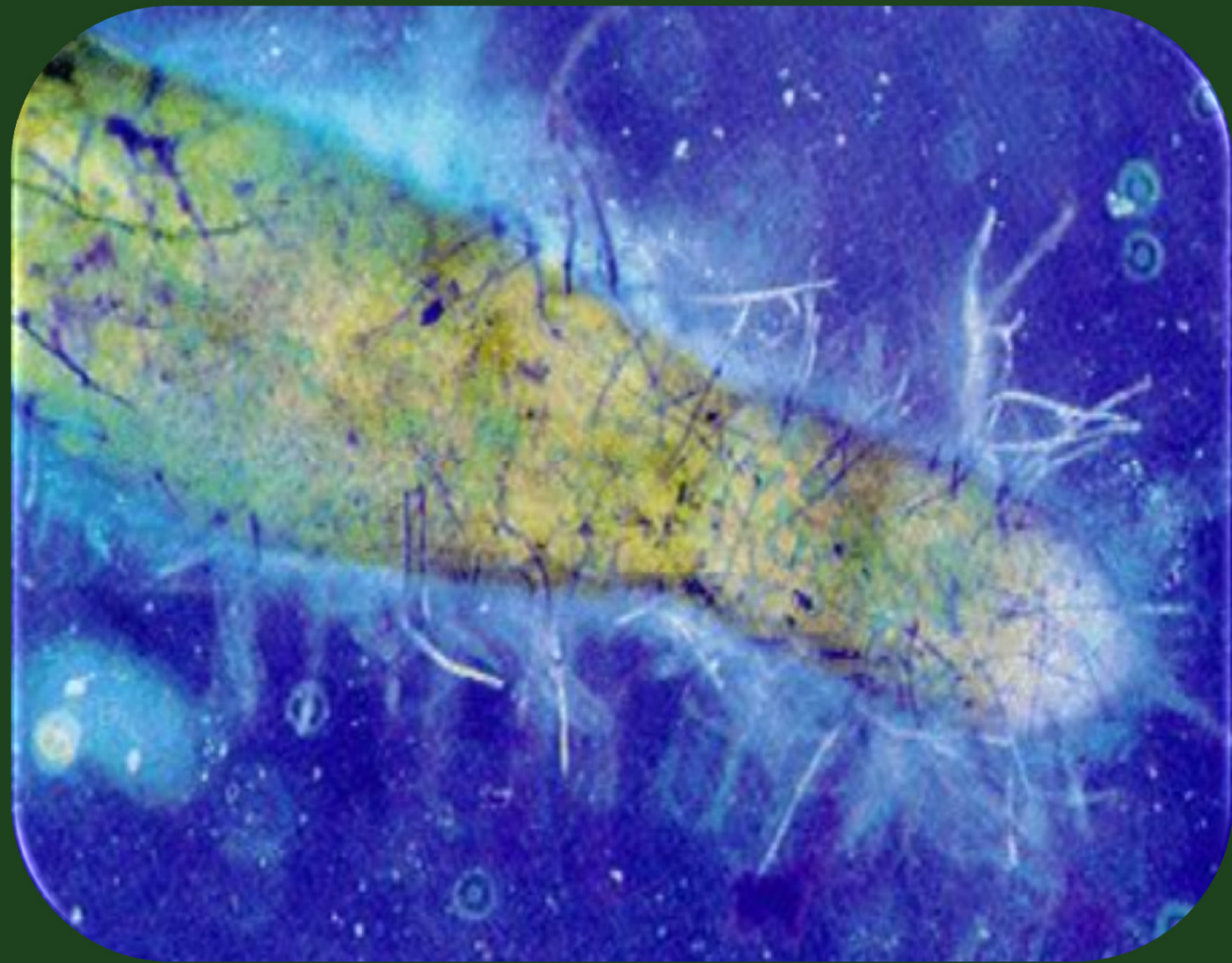


**Granular integrity keeps nutrients where they need to be**



**Protene® will stimulate and mimic plant root exudates, which will in turn stimulate indigenous soil microbes and mycorrhiza**





**Actual picture of plant root exudates  
and soil microbes**

# WHAT'S SO SPECIAL *about Protene® MU?*

## ***Not all Methylene Ureas are the same!***

- Protene® MU is matrixed with proteinaceous amino acids
- The Methylene Urea is such that 80%, or the majority of usable nitrogen, is available *in the release window*
- All other forms of MU vary in availability of nitrogen, and none are close to Protene® MU



## **THE ROLE OF ORGANIC AMINO ACIDS** *as complexing agents*

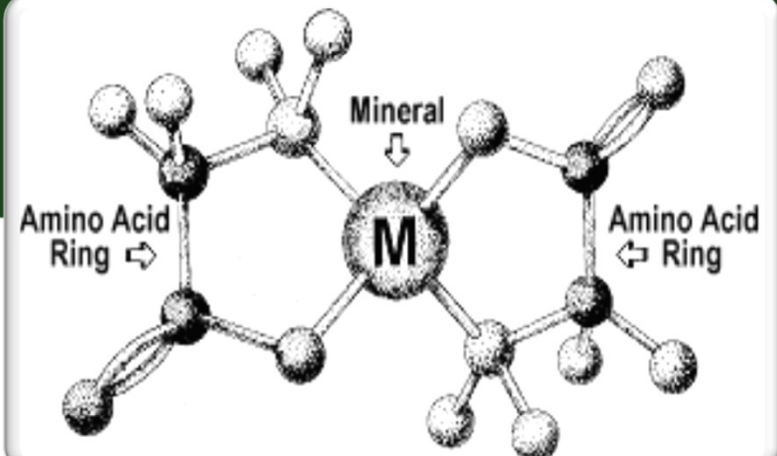
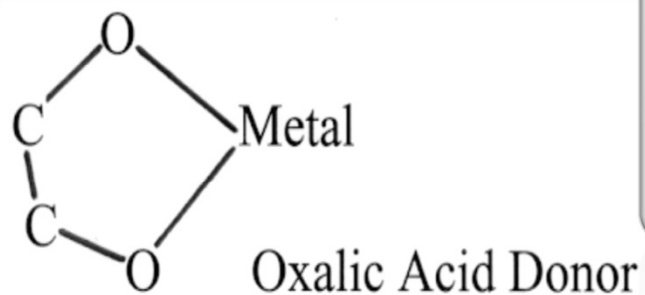
- Proven to be superior complexing and chelating agents
- Amino acids are the “building blocks of protein”, and vital for efficient translocation of nutrients
- Widely studied in agronomy around the globe
- Amino Acid chelates are far better than most other chelates

# COMPLEX

- Metal ion combines with an electron donor, the resulting substance is a complex, or a coordination compound
- $$\begin{array}{c} (\text{CH}_3)\text{-N-COO} \\ | \\ \text{metal} \\ | \\ (\text{CH}_3)\text{-N-COO} \end{array}$$

# CHELATE

- Donor atoms are attached not only to the metal, but also to each other



# SO WHY IS PROTENE® TECHNOLOGY *better for turf?*

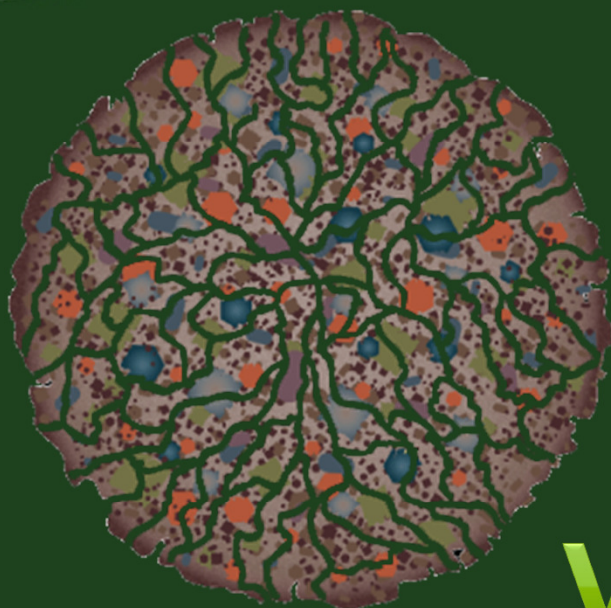
- Turf “recognizes” the complexed nutrients much more readily
- Nutrients will trans-locate from the soil and within the turf much more efficiently
- Nutrients will release over 120 days!
- The result is **MORE** efficiency and higher nutrient retention





# ***TOTAL CONTROL***

**Performance Fertilizer**



**Total  
Control**

(All Nutrients)

**VS**

**Controlled N**





# ARE YOU SENSING *an opportunity?*

- One application lasting up to **4** months!
- All (not just the N) nutrients releasing over a 120 day period
- Perfect for parks and rec., or school districts wanting safety and value!
- In golf, where budgets are shrinking, this will represent real value
- For Lawn Care Operators it's an opportunity to become the nutrient expert in their area.

**PART 2**

*new protein source*  
*exclusive to*

**Pro****tene®**



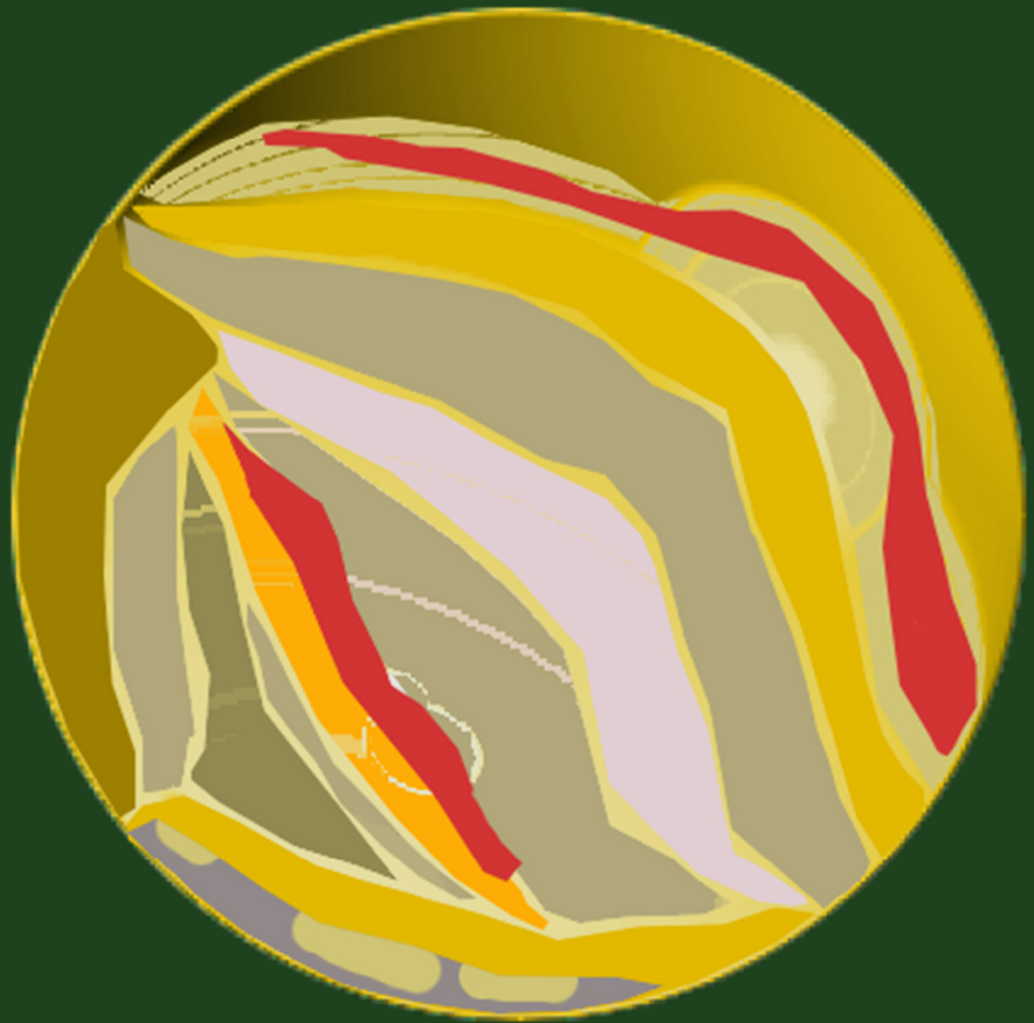
# PROTENE'S® ORGANIC

## *proteins and patents*

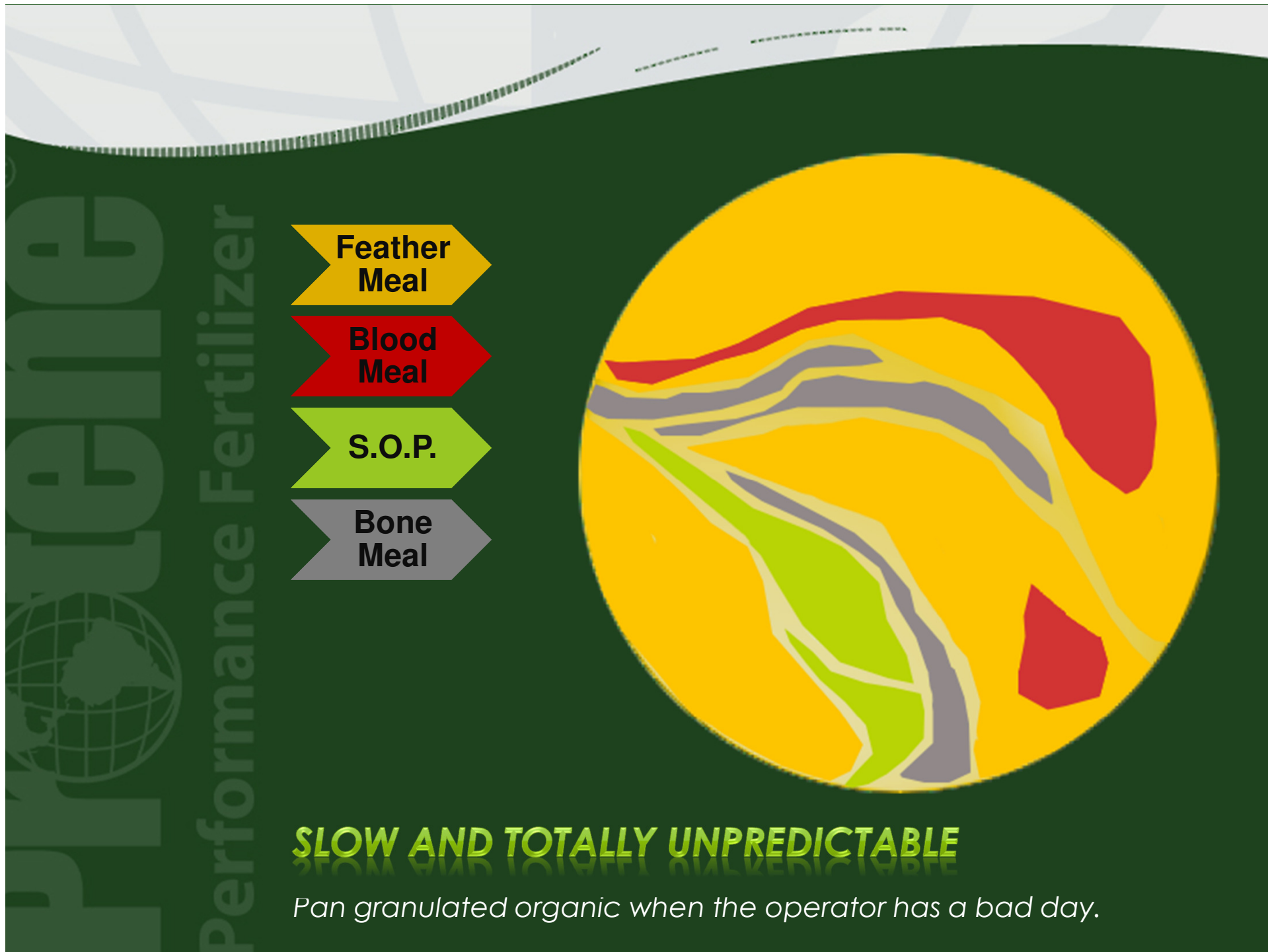
- Our source of organic protein is unique and exclusive to Protene®
- Over 22 L-Amino Acids derived from proteinaceous fermentation solubles
- Soluble, VERY AVAILABLE organic protein
- Free of manure or sewerage sludge (bio-solids) or hazardous contaminants, and heavy metals

# Performance Fertilizer

- Feather Meal
- Blood Meal
- Bentonite
- S.O.P.
- Bone Meal
- Meat Meal
- Ligno-sulfonate binder



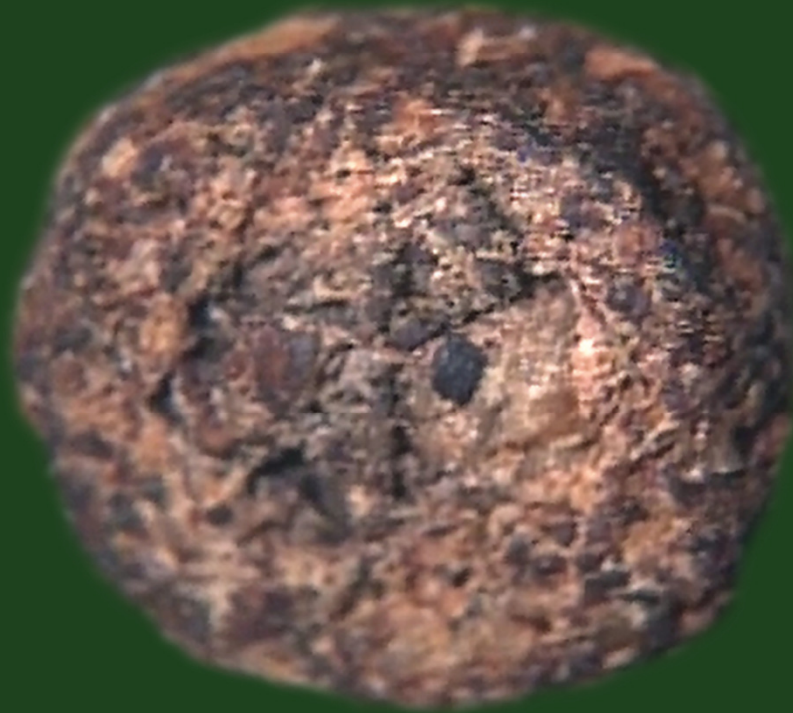
**PAN GRANULATED ORGANIC**





# Protene<sup>®</sup> *organic granule*

Organic granule technology consists of L-Amino Acid based microbial protein, hydrolyzed feather meal, bone meal and sunflower seed hull ash with molasses and lignin sulfonate.





**100%  
Homogenous  
Predictability**

**VS**

**Questionable  
Predictability**

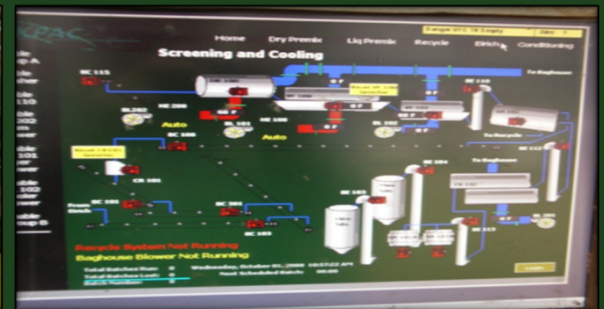


# LET'S REVIEW

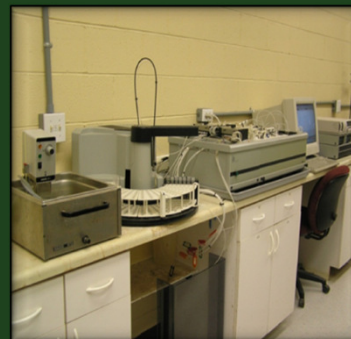
## *the role of soil microbes and organic nutrients*

- Efficient nutrient transfer occurs in biologically active soil
- Macro nutrients, micro nutrients and proteinaceous amino acids are solubilized and trans-located by soil microbes
- Protene® fertilizers stimulate and feed these indigenous soil microbes!





One of the most  
technically  
sophisticated fertilizer  
plant in the United  
States  
...period!



Industry standard  
analytical  
instrumentation for  
quality control.

At Protene<sup>®</sup>, if it's not 100% right, it doesn't make it out the door!

# THE GRANULAR LINE-UP

- **6-5-6** 100% Organic,
- **6-5-6** with Mycorrhizae
- **8-0-4** 100% Organic, Zero Phos.
- **0-5-34** Sunflower Seed Hull Ash
- **6-0-0-14Fe** Lo-Mow
- **12-0-24** Hybrid
- **19-0-19** Hybrid
- **20-0-5-4Fe** (3 types of Iron) Hybrid
- **15-22-10** Hybrid Starter
- **0-0-7** Hybrid
- **Micro Pack G** Micronutrients





100% Organic For Planting 25lb.  
(Also in 50lb. For Turf)



100% Organic for Turf



Hybrids

# THE LIQUID STORY

- First ever **foliar** and **root** liquid protein fertilizer for turf
- Turf will absorb nutrients via the foliar route, immediately on contact
- Liquid Protene<sup>®</sup> will also be encompassed in the soil profile to feed and stimulate soil microbes
- Turf will then take nutrients via the root system, due to massive stimulation of soil microbes per medium of the amino acids and polysaccharides

## ***THE LIQUID LINE-UP***

- **Protene<sup>®</sup> 4-0-2** Bio Stimulant with chelated Iron and Manganese
- **Protene 14-0-6** Bio Stimulant with chelated Iron and Manganese



# CONCLUSIONS

- Protene<sup>®</sup> offers **REAL** controlled release of **ALL** nutrients
- Protene<sup>®</sup> offers **TRUE** efficiency through sustained release of all nutrients
- Protene<sup>®</sup> offers **BETTER** performance in all categories
- Protene<sup>®</sup> will make your job easier, more productive and will save you money (dollars per acre per year) with fewer annual applications.