

TURF

ARBOR CARE

ORNAMENTALS

NURSERIES

GREENHOUSES

SOD FARMS

**Try other Performance Nutrition® products**

Humates & Humic Acids

KaPre® Soil Amendments

KaPre® Fertilizers

LidoQuest® Patented Fertilizers

NutriSmart® Patented Eco-Fertilizer

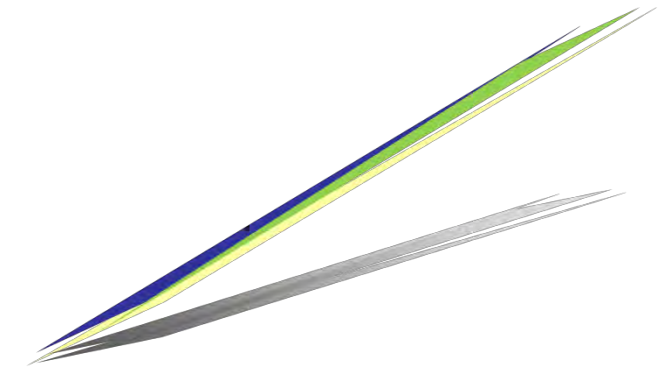
Nutrol® Bio-Pesticide

Pennamin® Amino Acid Nutrients

Prudent® Patented Phosphite Fertilizers

Vibrant® Patented Foliar Fertilizers

Worm Castings & Extracts



**NutriSmart®**

Patented ECO-FERTILIZER

Soil AMENDMENT

Nitrogen REPLACEMENT



*NutriSmart is a registered Trademark of CK Life Sciences.*

*Performance Nutrition is a registered Trademark of LidoChem, Inc.*



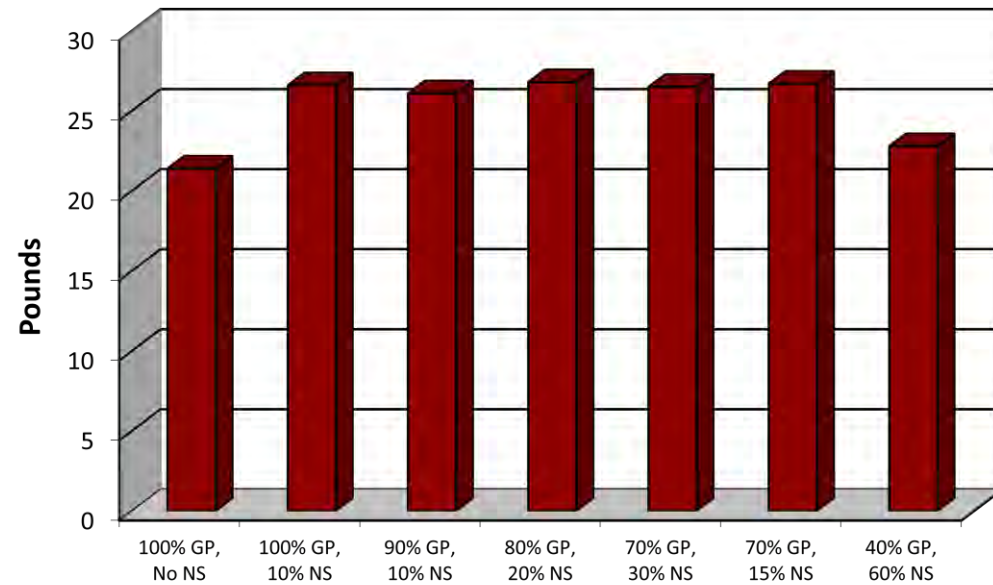
a pro-active approach for a GREENER tomorrow.



## What should you know about NutriSmart?

- ✦ **NutriSmart®** is a patented environmentally friendly **microbial fertilizer** & soil amendment developed by CK Life Sciences, a world-wide leader of eco-responsible agricultural practices.
- ✦ **NutriSmart** **fixes nitrogen** from the atmosphere; **decomposes phosphate** from the phosphate rock, and **releases potassium** from the soil.
- ✦ **NutriSmart** can effectively **replace 10 – 25% of soil-applied fertilizer**. **NutriSmart** fixes nitrogen as the plant needs it...*for up to 5 months!*
- ✦ **NutriSmart** has a “**smart**” relationship with the plant roots. When **the plant signals NutriSmart** that it requires nutrients, **NutriSmart** initiates the conversion and delivery process. In this way, **NutriSmart** is the **ultimate controlled release fertilizer** delivering nutrients on an "as needed" basis.
- ✦ **NutriSmart** is **salt-free** and is **safe to use** – even when applied on or near the seed.
- ✦ **NutriSmart** **does not leach** and reduces the leaching of chemical fertilizers.
- ✦ **NutriSmart** contains humates that **nourish soil microbes and improve the soil quality**.

**Effect of NutriSmart on Total Tomato Yield**  
(Weight of Green & Red Fruit per Row)



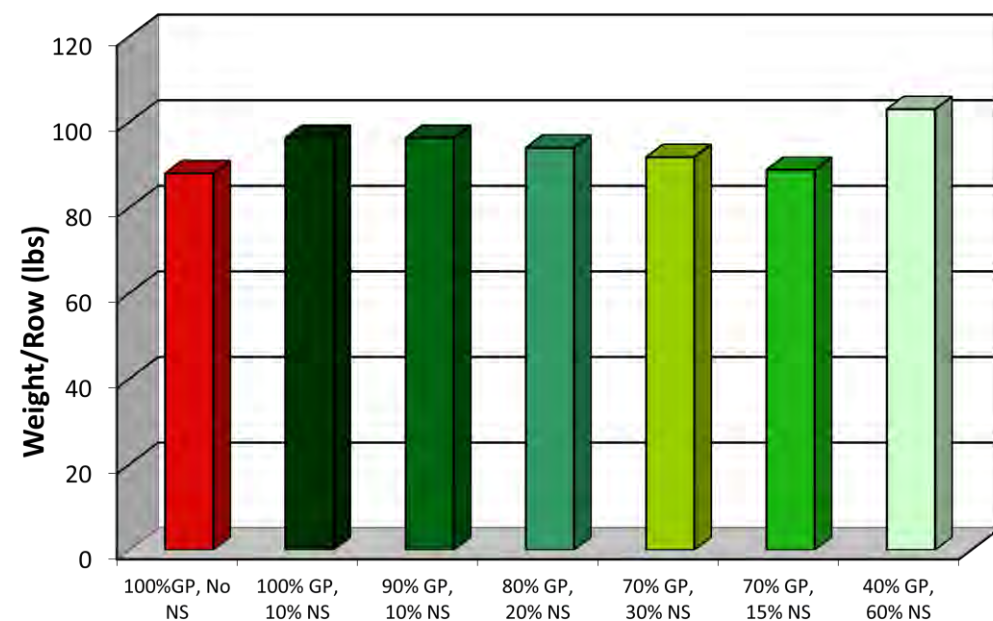
**Tomato Trial:** In this trial, researchers compared tomato production amongst plants fertilized with urea as the primary nitrogen source vs. plants fertilized with various Urea:NutriSmart blends.

Urea:NutriSmart blends ranged from full GSP plus 10% NutriSmart up to 40%GSP:60% NutriSmart.

**Tomato Weights per Row** for plants fertilized with Urea:NutriSmart blends were equal to or better than the production of plants fertilized with the GSP.

\*ACDS Research, Inc., NY

**Effect of NutriSmart Treatment on the Head Weight of Cabbage**



**Cabbage Trial:** In this trial, researchers compared the head weight of cabbage amongst plants fertilized with urea as the primary nitrogen source vs. plants fertilized with various Urea:NutriSmart blends.

Urea:NutriSmart blends ranged from full GSP plus 10% NutriSmart up to 40%GSP:60% NutriSmart.

**Cabbage Head Weight** for plants fertilized with Urea:NutriSmart blends were equal to or better than head weight of plants fertilized with the GSP.

\*ACDS Research, Inc., NY

Details of these trials and other NutriSmart trials are available upon request!



# Patented Technology at Work for *You!*

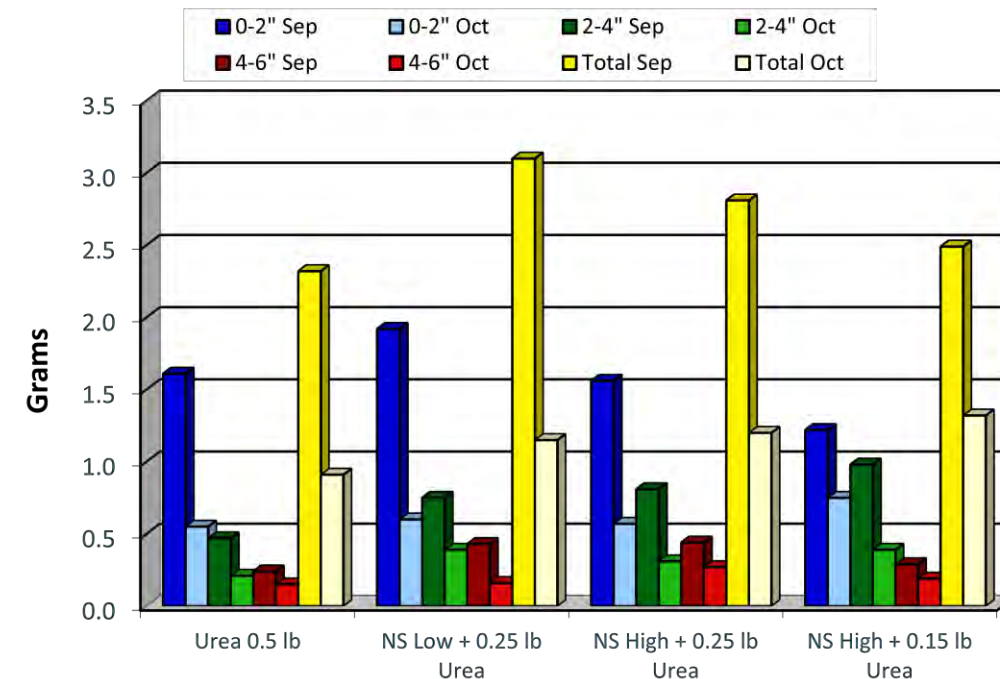
## NutriSmart – developed with the *ENVIRONMENT* in mind!

- ✧ **NutriSmart** components are **naturally occurring substances**; free of any chemical constituents.
- ✧ **NutriSmart** is **non-toxic** to humans and wildlife.
- ✧ **NutriSmart** **reduces nitrate & phosphate pollution** by minimizing nutrient leaching.
- ✧ **NutriSmart** contains no soluble N, P or K.
- ✧ The microbes found in **NutriSmart** are common microbes re-trained to supply N, P & K.
- ✧ **NutriSmart** does **not contain** any **genetically modified organisms**.
- ✧ The addition of **NutriSmart** to broadcast fertilizers will **reduce the quantity of nitrates and phosphates** entering the water supply.
- ✧ **NutriSmart** enriches soil with **organic matter & biological activity**.
- ✧ Prolonged use of **NutriSmart** will **restore soil balance** and improve soil physical and chemical properties.



*You can successfully manage turf and crops in an eco-friendly manner.*

**Effect of NutriSmart Treatment on Root Weights**

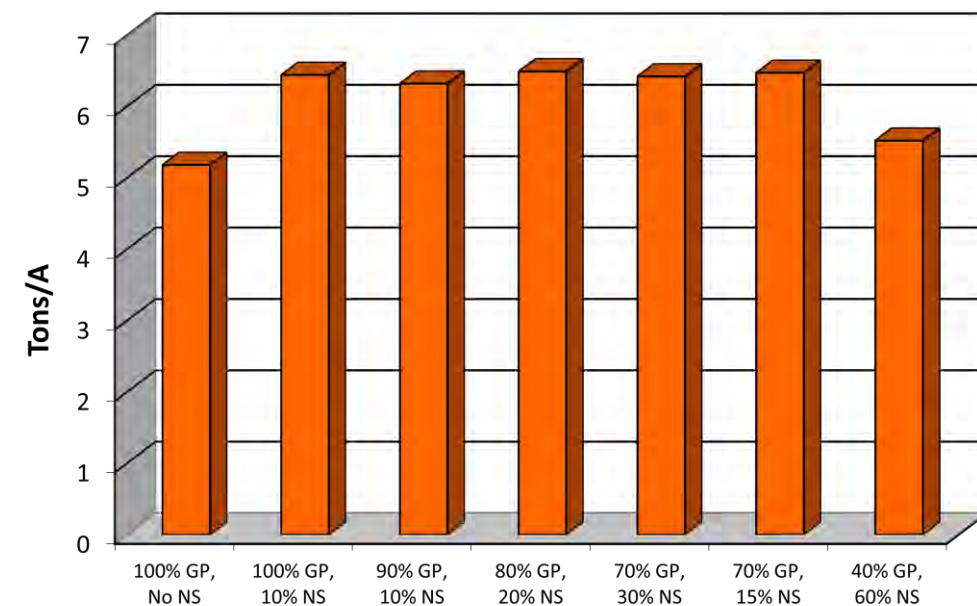


### Turf Root Weight Trial Conclusions:

*"...NutriSmart treatments revealed higher root masses versus the Controls...the averages for the NutriSmart treatments were higher versus the Controls thus revealing potential advantages as a soil amendment for root growth and reducing fertilizer inputs."*

*...In other words, less total nitrogen was applied with these treatments and still produced substantial rooting".*

**Effect of NutriSmart on Total Tomato Yield (Tons/A)**



**Tomato Trial: Tomato Trial:**  
In this trial, researchers compared tomato production amongst plants fertilized with urea as the primary nitrogen source vs. plants fertilized with various Urea:NutriSmart blends.

Urea:NutriSmart blends ranged from full GSP plus 10% NutriSmart up to 40%GSP:60% NutriSmart.

**Tomato Weights per Row**  
for plants fertilized with Urea:NutriSmart blends were equal to or better than the production of plants fertilized with the GSP.

\*ACDS Research, Inc., NY



How SMART is NutriSmart? You Decide!

Listed below (on the Plant Leaf Analyses Table) are the plant tissue analysis results for field corn grown at four different locations in the Mid West. The growers applied fifty (50) pounds of NutriSmart per acre to their standard fertility programs. NutriSmart was broadcast over snow in the winter or applied in deep trench tillage after harvest.

These results are evidence of NutriSmart’s “smart” relationship with the plant roots. Three of Four Case Studies show sufficient micro nutrition for 92% or more of the parameters measured.

Do your tissue tests show the same results? If not, think NutriSmart!.

Plant Leaf Analysis Reports							
Corn ~ At Silking					Corn ~ At less than 12inches		
Nutrients	Normal Range	Case Study 1	Case Study 2	Case Study 3	Normal Range	Case Study 4	Comments
Nitrogen (%)	2.80 - 3.50	2.91	3.2	2.60	3.50 - 5.00	4.39	3 Sufficient 1 Low
Sulphur (%)	0.16 - 0.50	.19	0.23	0.18	0.15 - 0.50	0.32	All Sufficient
Phosphorous (%)	0.25 - 0.50	0.39	0.29	0.30	0.30 - 0.50	0.36	All Sufficient
Potassium (%)	1.81 - 3.00	2.55	2.03	2.25	2.50 - 4.00	2.99	All Sufficient
Magnesium (%)	0.16 - 0.50	0.26	0.24	0.27	0.15 - 0.45	0.52	3 Sufficient 1 High
Calcium (%)	0.25 - 0.90	0.61	0.78	0.70	0.30 - 0.70	0.78	3 Sufficient 1 High
Sodium (%)	0.03	0.01	0.01	0.01	0.03	0.01	All Sufficient
Boron (ppm)	6 - 25	9	9	5	5 - 25	5	All Sufficient
Zinc (ppm)	25 - 50	20	28	20	20 - 60	37	2 Sufficient 2 Low
Manganese (ppm)	26 - 100	32	57	38	20 - 300	47	All Sufficient
Iron (ppm)	50 - 250	91	127	233	50 - 250	435	3 Sufficient 1 High
Copper (ppm)	5 - 20	11	14	9	5 - 20	13	All Sufficient
Aluminum (ppm)	1 - 300	8	11	74	1 - 300	236	All Sufficient
Sufficient or higher:		92%	100%	77%	92%		



eCO-friendly, ENVIRONMENTALLY sound

safe & ECONOMICAL

easy to apply

NutriSmart - developed with the GROWER in mind!

- NutriSmart performs for the long-term so it only needs to be applied every 3 - 5 months, saving growers and turf managers time and money.
- NutriSmart is safe for growers and consumers.
- NutriSmart is effective. Worldwide commercial use and independent trials have documented the benefits of adding NutriSmart to conventional fertilizer programs.



# NutriSmart - developed with the *FUTURE* in mind!

**NutriSmart** allows growers and turf managers to manage their fertility programs with less chemical fertilizer and minimal nutrient leaching.

Each NutriSmart application improves the soil’s structure and ability to support microbial activity critical to plant nutrition and health.

## NutriSmart Chemical Reduction Program:

- Emphasizes “*Use Efficiency*” rather than chemical rate.
- Nourishes and sustains the soil’s biodiversity.
- Integrates chemical and organic/biological fertilizers.
- Maintains or improves crop productivity, quality & safety.
- Is user friendly & cost effective.



**Growers** and turf managers will bear increasing responsibility for protecting their ecosystem and that of the surrounding community. They will have to maintain or increase production and quality using fewer available tools; some of the traditional pesticides and herbicides may not be available and water quality standards will restrict conventional fertilizer usage. NutriSmart helps growers transition to the new paradigm of responsible agricultural and turf management.

## NutriSmart – For a New Generation of Fertility Programs:

- Replacing 10 – 25% of conventional or high-quality organic fertilizers with NutriSmart is an ideal program to implement modern agriculture practices, e.g. **IPNS** (Integrated Plant Nutrient System), **SAP** (Sustainable Agricultural Practices) & **LEIA** (Low External Input Agricultural Systems).
- NutriSmart is an economical and effective solution for improving soil quality & supporting sustainable agriculture.
- NutriSmart is the ideal technology to improve the Nutrient Use Efficiency (**NUE**) of chemical fertilizers.
- NutriSmart is suitable for use in conventional and organic farming (NutriSmart-**B** only).

# Which **NutriSmart** is *Right* for You?

*For Conventional Growers*

**NutriSmart**

**0-5-0**

70%	Leonardite and Lignite
20%	Phosphate Rock
5 – 8%	Starch and molasses
2 – 4 %	Patented Yeast powder

Contains


**30% Total Organic Matter**

*For Organic Growers*

**NutriSmart-B**

**0-0-0**

93%	Leonardite and Lignite
6%	Starch and molasses
1%	Patented Yeast powder




Contains

**35% Total Organic Matter**

**NutriSmart and NutriSmart-B come in several SGN sizes. There is a NutriSmart for every application.**

- |                |   |
|----------------|---|
| <b>SGN 100</b> | For short cut grasses, tees, greens, etc.   |
| <b>SGN 150</b> | For short cut grasses, tees, greens, fairways, etc.   |
| <b>SGN 250</b> | For agricultural applications, residential commercial lawn care, lawn care, lawn and garden fertilizers, etc. |
| <b>SGN 350</b> | For agricultural, turf and ornamental broadcast applications, etc.  |



NutriSmart is easy to apply. And, unlike other humate products, NutriSmart is a dust-free product with uniform granules. *(See photo, left)*

**Much cleaner and safer to use!**



# Application Instructions

## Turf Applications:

### 1. For use as an Aerification Amendment:

- ✦ Aerify Surface to be treated
- ✦ Broadcast 200-350 pounds of NutriSmart
- ✦ Drag NutriSmart into Holes
- ✦ Top-dress as normal

**Note:** Apply NutriSmart at each aerification. Do not exceed 750 pounds of NutriSmart per year.

### 2. For use with conventional and organic fertilizers

- ✦ Replace 10 – 30% of soil applied granular NPK with an equal amount by weight of NutriSmart.
- ✦ Apply as normal and follow same application schedule as normal fertility program.



## Agricultural and Other Applications:

### 1. For use with conventional & high quality organic granular fertilizers:

- ✦ Replace 10 – 30% of soil applied granular NPK with an equal amount by weight of NutriSmart.
- ✦ Apply as normal and follow same application schedule as normal fertility program.

### 2. For use with manures:

- ✦ Replace 25 – 50% of manure with the rates listed below.
- ✦ Apply as normal and follow same application schedule as normal fertility program.

Manure Replacement Rates	
Crop	Rate
Slow-growing or low nutrient demand crops (rice, etc.):	200 – 350 lbs/Acre
Fast-growing or high nutrient demand crops (vegetables, trees):	400 – 900 lbs/Acre

# NutriSmart belongs in *your* fertility program

- ✦ Tested on over 50 crops in over 10 countries.
- ✦ Applicable for a variety of functions/segments including:
  - Organic and conventional farming
  - Golf Courses
  - Sports turf, lawn maintenance
  - Roadside landscaping
  - County park maintenance
  - Horticulture
  - Arbor Care



### NutriSmart’s effect on soil leaching

University trials and commercial experience show:

- ✦ NutriSmart significantly reduces amounts of  $\text{NO}_3^{-2}$  &  $\text{PO}_4^{-3}$  in soil leachate when compared to chemical fertilizer
- ✦ NutriSmart increases the amount of water retained in the soil
- ✦ NutriSmart alleviates leaching problems that may be caused by the use of conventional fertilizers

### How does NutriSmart work?

NutriSmart's blend of naturally occurring microbes work together to convert the resources found in the soil and atmosphere into usable, available plant nutrients.

The specifically selected microbes contained in each NutriSmart granule form a symbiotic community of mutually interdependent nutrient-releasing microorganisms.

The microbes in NutriSmart are in a dormant state during storage, and only activate when the granules are applied and irrigated into the soil.

# Benefits of *pre-blending* NutriSmart with *conventional or organic NPK fertilizers*



## BENEFITS

### to CROPS & TURF

- Improves & sustains plant growth/yield.
- Improves crop quality.
- Provides long efficacy; delivers nutrients throughout the growing cycle.
- Supports healthier plants - improves the development of root system.

## BENEFITS

### to the ENVIRONMENT

- Reduces rates of chemical fertilizer application; reduces amount of salts entering the ecosystem.
- Is Natural & Environmentally Friendly.
- Significantly reduces pollution caused by the leaching of excess nitrogen.
- Improves the soil quality – increases the soil organic matter & improves soil environment for beneficial microorganisms.

## BENEFITS

### to the GROWER

- Improves the effectiveness of chemical fertilizers.
- Available in different granule sizes for easy application.
- Has a guaranteed organic matter content (>30%) and consistent quality.
- Improves NUE, root system & soil fertility.
- Has a low moisture content & long shelf-life (3 years).



## BENEFITS

### to FERTILIZER BLENDEES

- NutriSmart increases the fertilizer/N, P, & K nutrients use efficiency.
- NutriSmart enables product differentiation in existing and new markets: Meeting UN/FAO recommended agricultural system e.g. IPNS & balanced fertilization.
- NutriSmart blends easily with a full range of chemical products.
- NutriSmart is readily available and price stable.
- NutriSmart enables environmentally friendly claims: creates a better image and corporate citizenship.

Example: **Korea**

Pre-blended NutriSmart + 11-10-12 + coated urea

Blended Result: 11-4-5

with 40% NutriSmart

Example: **China**

Replaced 15-15-15 with Urea + 15-15-15 + 30% NutriSmart

Crop: **Rice**

Results: **Yield increased by 10%**

**NUE increased by 50%**

with 30% NutriSmart