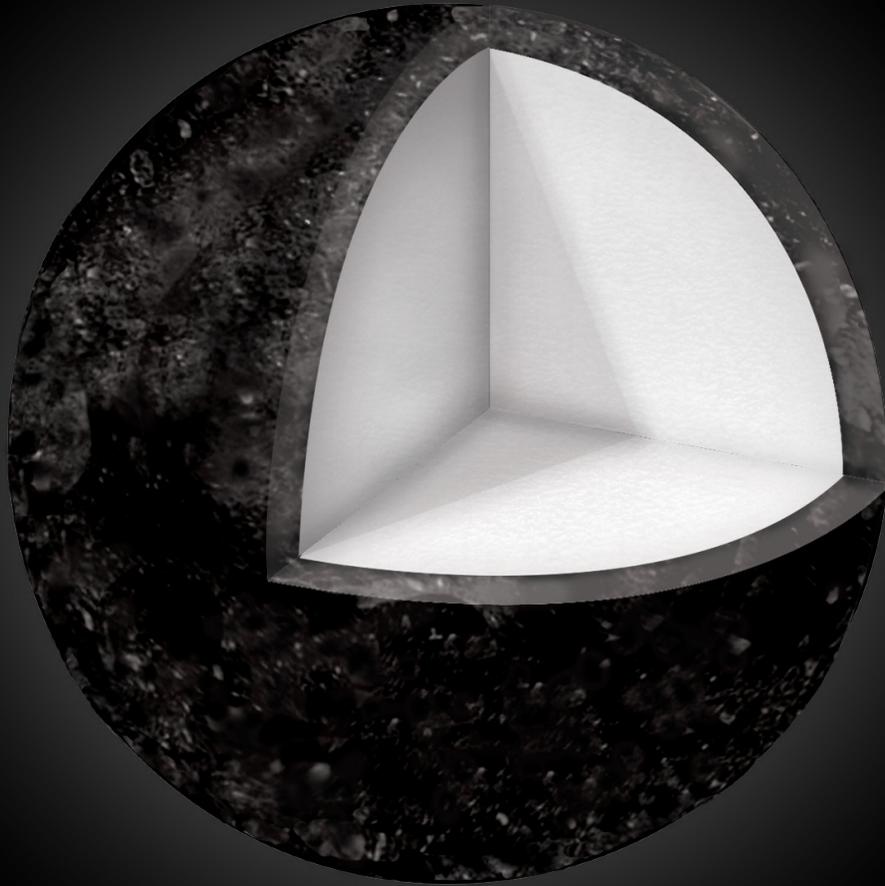


**HCU**<sup>TM</sup>

HUMIC COATED UREA



**BLACK IS THE NEW GREEN**<sup>TM</sup>

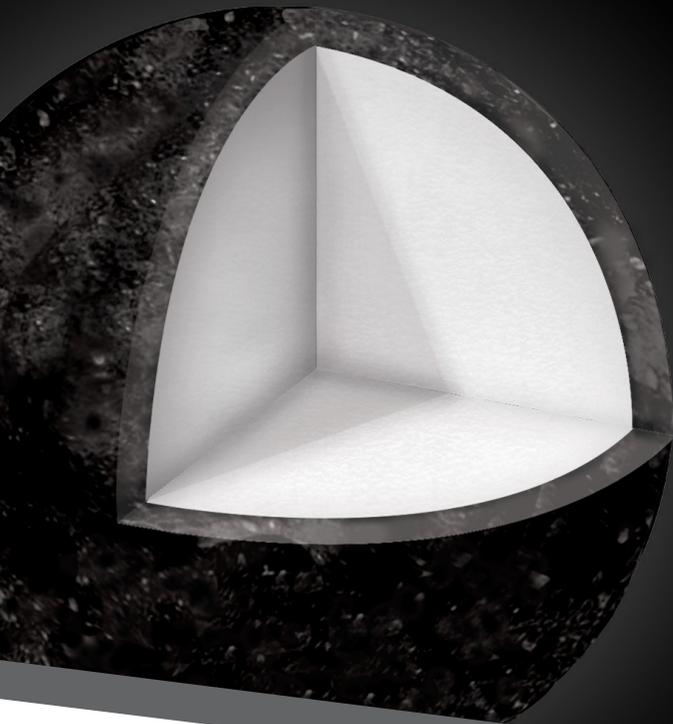
**The**   
**Andersons**<sup>®</sup>



## HUMIC COATED UREA

HCU (Humic Coated Urea) granules are an innovative nitrogen source featuring urea-humate fusion. This proprietary technology from The Andersons produces a cost effective 44-0-0 nitrogen granule that is bonded with potassium humate. Clean, spherical, free flowing granules are 100% soluble for use in both liquid and dry applications. HCU granules can be applied to all types of cool and warm season turf, landscape and nursery ornamentals, and specialty crops.

HCU granules offer a practical, sensible and sustainable approach to applying nitrogen with important soil and plant health benefits that traditional nitrogen sources cannot provide.



# SENSIBLE

There are many types of controlled-release or enhanced efficiency nitrogen products available that provide the single benefit of potentially improving the utilization of applied nitrogen. Enhanced efficiency fertilizer products use several different methods to impact the release of nutrients. Some enhanced efficiency fertilizers use physical coatings such as polymers and/or sulfur to slow the release of nitrogen. Other enhanced efficiency fertilizers use additives to suppress chemical and/or biological conversions of nitrogen compounds in the soil.

HCU granules are different by design. They utilize urea-humate fusion technology which bonds a uniform coating of certified organic potassium humate over a urea granule. This coating does not act as a physical barrier to slow nitrogen release, but works synergistically with urea to promote and enhance soil biology.

HCU granules contain beneficial fulvic and humic acids that provide a rich carbon source for maintaining and improving soil biology. Fulvic and humic acids have numerous proven benefits for soil and plant health which include: enhanced nutrient efficiency, micronutrient

uptake, soil nutrient holding capacity, biological activity, and water holding capacity.

Both fulvic and humic acids have unique physical and chemical properties that contribute to their effectiveness and the way they complement fertilizer programs.

**FULVIC ACIDS** are very soluble and can be readily absorbed by leaves and roots, making them well suited for foliar application. Fulvic acids enhance the absorption of nutrients and aid in the efficiency of plant metabolic reactions.

**HUMIC ACIDS** are moderately soluble. They have a high cation exchange capacity (CEC), which helps enhance the nutrient holding capacity of the soil after application. Humic acid molecules chelate many essential nutrients and help stimulate soil microbiology.

# SPRAYABLE & SPREADABLE

HCU granules are multipurpose soluble granules that can be solubilized for spray application or dry applied through typical dry spreading equipment. HCU 44-0-0 granules are a cost effective nitrogen source, and are well suited for use on large turf applications such as golf course tees, aprons, fairways and roughs, sports fields, commercial and residential lawns, ornamentals, and specialty crops.

SPRAY APPLICATION RATES				
NITROGEN RATE	PRODUCT		HUMIC ACID*	SUGGESTED MIN. SPRAY VOLUME
	N /1000 FT <sup>2</sup>	LBS./1000 FT <sup>2</sup>		
0.10	0.23	10	0.20	30
0.25	0.57	25	0.50	40
0.33	0.75	33	0.70	40
0.50	1.14	50	1.00	40
0.75	1.70	74	1.50	60
1.00	2.27	99	2.00	80

## SPRAY APPLICATION

HCU granules completely solubilize when added to water and can be spray applied at nitrogen rates of 0.10 - 1.00 lbs. N/1,000 ft<sup>2</sup>. To mix HCU granules for spray application, refer to the label for application rates, water volume, dilution, and mixing instructions. HCU granules can be mixed and added to the spray tank using industry standard practices including: pouring into the strainer basket at the top tank opening and running water over the granules to solubilize, preparing a bucket slurry mixture, adding granules through the spray tank inductor system, or preparing a solution in a mix batch tank system. The time required to solubilize HCU granules is reduced by using warm or hot water.

HCU granules are compatible with the most widely used control products for finely maintained cool and warm season turf. For peak product performance we recommend only tank mixing HCU with chelated iron (Fe) micronutrients such as Iron EDTA, HEDTA, etc. Mixing HCU with iron sulfate may potentially cause interaction issues within the tank mix. As always, we recommend a jar test prior to product mixing and application.

BROADCAST APPLICATION RATES			
NITROGEN RATE	PRODUCT		HUMIC ACID*
	N /1000 FT <sup>2</sup>	LBS./1000 FT <sup>2</sup>	
0.75	1.70	74	1.50
1.00	2.27	99	2.00
1.25	2.84	124	2.50
1.50	3.41	149	3.00

## DRY SPREAD APPLICATION

Urea-humate fusion technology produces a clean, dry, dust-free, spherical HCU granule that is ideal for dry spread application. HCU granules can be applied through all types of granular spreading equipment including The Andersons Professional rotary spreaders, and larger scale broadcast spreaders such as Lely and Vicon models. Typical application rates range from 0.75 - 1.50 lbs N/1000 ft<sup>2</sup>.

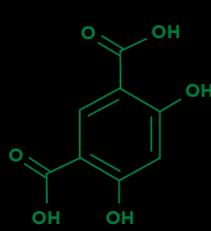
\*Equivalent to gallons/acre rate of 12% liquid humic acid.

# SUSTAINABLE

“Humic substances are recognized by most soil scientists and agronomists as the most important component of a healthy, fertile soil.”<sup>1</sup>

Humic acid provides a carbon food source which stimulates soil microbiology. Carbon is an essential plant nutrient that provides soil microbes with a food source and habitat. Microbes support soil and overall plant health by making nutrients available to plants in the inorganic form. Humic acid is a primary food source to grow populations of beneficial soil fungi, including mycorrhizal fungi.

The complex structure of humic acids enables many opportunities for interactions with nutrients. These interactions keep nutrients accessible to the growing plants and prevent leaching or tie up. Humic acid is an environmentally sustainable addition to your nutrition program, as it allows the same quality and color to be enjoyed while applying less nutrients—**BLACK IS THE NEW GREEN**. Humic acids also increase the availability of micronutrients to the plant. Larger molecules of humic acids physically modify soil structure which increases soil aggregate stability, improves water infiltration, nutrient holding capacity, aeration, soil tilth, and workability.



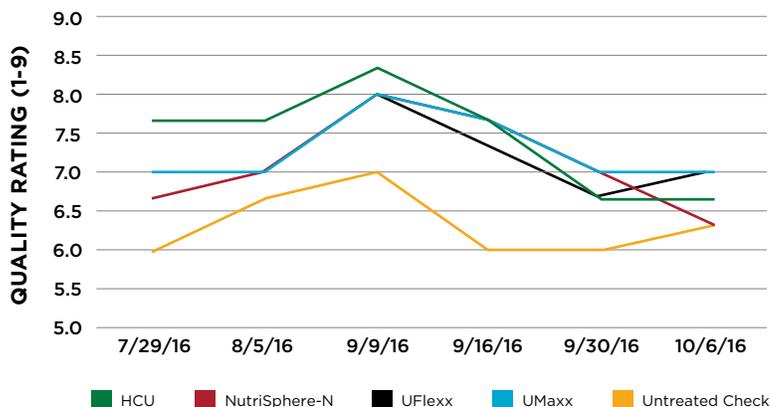
## ENHANCE SOIL BIOLOGY

With the power of humic acid, HCU granules will enhance soil biology and chemistry, which in turn will enhance nutrient availability. This is in contrast to many competitive products, which keep nutrients available by suppressing chemical and/or biological conversions of nitrogen compounds in the soil.

<sup>1</sup> Pettit, R.E. 2004. Organic Matter, Humus, Humate, Humic Acid, Fulvic Acid and Humin: Their Importance in Soil Fertility and Plant Health.

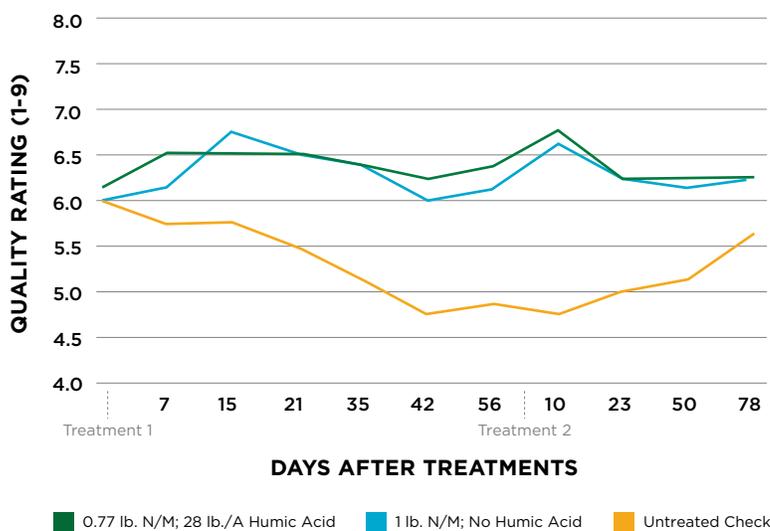
# PROVEN PERFORMANCE

## UNIVERSITY OF ARKANSAS | TURF QUALITY & COLOR | 2016



HCU granules provide turf quality and color that is comparable to current industry leading products. In a study conducted on Bermudagrass at the University of Arkansas, HCU granules were applied at a rate of 1.00 lb N/1000 ft<sup>2</sup> and compared to NutriSphere-N, UMaxx, and UFlexx applied at the same rate. The Bermudagrass plots treated with HCU granules had turf quality and color statistically similar or greater than industry leading products for the 11 week duration of the study. Similar results were observed on Kentucky bluegrass at Penn State University.

## PENN STATE UNIVERSITY | TURF QUALITY & COLOR | 2016



Numerous research studies conducted by The Andersons and universities around the world have observed the positive impact of humic acid on nutrient efficiency. In studies conducted at Penn State University in 2015 and 2016, The Andersons humic acid was applied with reduced nitrogen fertility to Kentucky bluegrass at a 3" cut. These humic acid treatments with reduced nitrogen fertility were compared to a treatment that received the full rate of nitrogen fertility but no humic acid. For two years in a row, the same turf quality and color were observed throughout the study in plots treated with the full rate of nitrogen (1.00 lb N/1000 ft<sup>2</sup>) and plots treated with humic acid (28 lb humic acid/acre) and a reduced rate of nitrogen (0.77 lb N/1000 ft<sup>2</sup>).

### PRODUCT SPECIFICATIONS

Analysis:	44-0-0
Coating:	2% potassium humate
SGN:	215
UI:	40
Bulk Density:	46 lbs. / ft <sup>3</sup>
Packaging:	50 lb. bag



AndersonsPlantNutrient.com