• Protects nitrogen investment
• Reduced ammonia emissions
• Does not contain any known carcinogens
• Contains AAPFCO-defined urease inhibitor
• Approved by NRCS for CSP benefits
• University-proven urease inhibitor

Arborite® AG is a urease inhibitor product that helps reduce loss of nitrogen due to localized increase in pH. This is particularly true where there is crop residue or grass sod covering the soil. Even more significant nitrogen loss has been documented when urea is shallow incorporated or in bands 3cm to 5cm. The reason is that higher soil moisture has been documented when urea is shallow incorporated or in bands 3cm to 5cm. The reason is that higher soil moisture stimulates urea hydrolysis relative to surface application or incorporation of urea in bands. Further losses of applied N are due to localized increase in pH.

Arborite® AG is a urease inhibitor product that helps reduce loss of nitrogen from urea as ammonia until rainfall or irrigation water can move urea into the soil.

GROWER BENEFITS
• University-proven urease inhibitor
• Approved by NRCS for CSP benefits
• Contains AAPFCO-defined urease inhibitor
• Grower flexibility to time urea and UAN applications
• Does not contain any known carcinogens
• Reduced ammonia emissions
• Protects nitrogen investment

For additional information, visit www.arboriteAG.com.

REFERENCES

This presentation contains university research on the attributes of NBPT and its benefit as an effective urease inhibitor. Neither the university, nor anyone conducting research on its behalf, endorse the products(s) or use of the product(s) mentioned herein. NBPT, the active ingredient in Arborite® AG, is the only urease inhibitor defined by the Association of American Plant Food Control Officials (AAPFCO). The purpose of the AAPFCO definitions is to create uniformity amongst the participants in the market without compromising the needs of consumers, protecting the environment or fair competition among the industry. The data herein are provided for informational purposes only. No warranty, express or implied, is made. Results may vary based on a number of factors. Before use, consult the product packaging and labeling for further information. To find out if Arborite® AG is right for you, talk with your independent crop consultant and your Gavilon sales representative.

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This breakdown of urea begins as soon as it is applied to the soil. Volatilization rates are affected by many factors, including rate of fertilizer application and placement, ground cover and residue, soil and atmospheric temperature, soil moisture content, relative humidity, soil pH, soil buffering capacity, and soil cation exchange capacity. Generally, the rate of nitrogen volatilization from urea-based fertilizers is greatest just after application, with the majority occurring within two to four days, or even faster on high-pH soils.

**WHY DO I HAVE TO WORRY ABOUT NITROGEN LOSS?**

Without sufficient nitrogen, your crops will not reach their full potential. Unfortunately, all kinds of factors can affect the quantity of nitrogen available. That’s where Arborite® AG comes in.

**WHAT IS ARBORITE® AG?**

Arborite® AG is a nitrogen stabilizer for urea and Urea Ammonium Nitrate (UAN) solution that reduces nitrogen volatility by inhibiting the hydrolytic activity of the urease enzyme, resulting in less urea nitrogen loss by ammonia volatilization.

**WHY IS NITROGEN IMPORTANT?**

Nitrogen is essential for plant growth. In fact, it’s considered the greatest limiting factor for growth in most plants, which means that without sufficient nitrogen, your crops will not reach their full potential. Unfortunately, all kinds of factors can affect the quantity of nitrogen available. That’s where Arborite® AG comes in.

The NBPT in Arborite® AG treated fertilizer inhibits the interaction between urea and urease enzyme in the soil, helping to slow the conversion of urea to ammonia and carbon dioxide. When this volatility is reduced, more nitrogen can remain in the soil for a longer period of time.

**WHY DO I HAVE TO WORRY ABOUT NITROGEN LOSS?**

The more nitrogen you make available to your plants, the better they will grow, so it makes sense to fertilize your crops in a way that minimizes nitrogen loss.

Figure 1 shows what happens to most urea-based fertilizers after they are applied. Microorganisms in the soil produce an enzyme called urease, which interacts with urea to release nitrogen as ammonia gas. The loss of nitrogen from urea in the form of ammonia is referred to as volatilization.

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**Figure 1**

Fertilizer Nitrogen Cycle

- Factors Affecting Volatilization
  - Soil pH
  - Temperature
  - Cation Exchange Capacity
  - Organic Matter
  - Fertilizer Product
  - Application Rate
  - Moisture (Soil and Humidity)

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**Figure 2**

Cumulative Nitrogen Loss for Urea, and Arborite® AG Treated Urea

- Nitrogen Losses Measured with Fertilizer Pellets Placed on Bare Soil
  - Temperature: 20°-25°C
  - Soil pH: 6.4, Moisture: 8%
  - Air Flow Rate: 6 cm/h

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**Arborite® AG Rates**

- Granular urea: 2 quarts/ton (31.3/liter) for 14-day protection

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**Industry Standard Packaging**

- Arborite® AG is backed by documented research and has a proven reputation. Originally developed for intensively managed southern pine plantations, this technology has been used on more than 2 million acres of forestland in the United States since 1998. Patented and exclusively licensed to Gavilon Fertilizer, the Arborite® AG additive has been a proven and documented Urease Inhibitor in several of the most important agricultural universities in the United States.

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**2014 Farm Bill**

The Conservation Stewardship Program (CSP) from the Natural Resources Conservation Service (NRCS) helps agricultural producers maintain and improve their existing conservation systems and adopt additional conservation activities to address priority resource concerns. Participants earn CSP payments for conservation performance—the higher the performance, the higher the payment.

Of the over 60 enhancement activities available through the CSP, one of the most important is Air Quality Enhancement (AQRO), which pays participants for conservation performance through the use of urease inhibitors defined by AAPFCO, such as NBPT contained in Arborite® AG.

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**Why Choose Arborite® AG?**

Arborite® AG is backed by documented research and has a proven reputation. Originally developed for intensively managed southern pine plantations, this technology has been used on more than 2 million acres of forestland in the United States since 1998. Patented and exclusively licensed to Gavilon Fertilizer, the Arborite® AG additive has been a proven and documented Urease Inhibitor in several of the most important agricultural universities in the United States.