

Nitrogen Fertilizer Price Comparison

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Background

Farmers have many sources of nitrogen available to them and in gas, liquid, and solid forms. From a cost per unit basis, anhydrous ammonia will nearly always be the lowest cost per unit of actual N with the liquid products the highest costs. However, there may be other factors to consider when deciding which nitrogen product to use.

Anhydrous ammonia is the most concentrated source of nitrogen but requires special equipment to apply and carries inherent dangers to the operator when applying. Because anhydrous ammonia is knifed into the soil, the

product works well for application to growing crops like corn.

Urea is a safer source of nitrogen during application but the dry product needs to be incorporated into the soil to avoid N loss, especially to moist soil later in the spring. The incorporation requirement limits the ability to use dry urea in growing corn or grain sorghum without some nitrogen loss although rainfall or irrigation will work to incorporate the nitrogen into the soil.

UAN products, because they are liquid, are very versatile when it comes to their application. It can be incorporated into many production

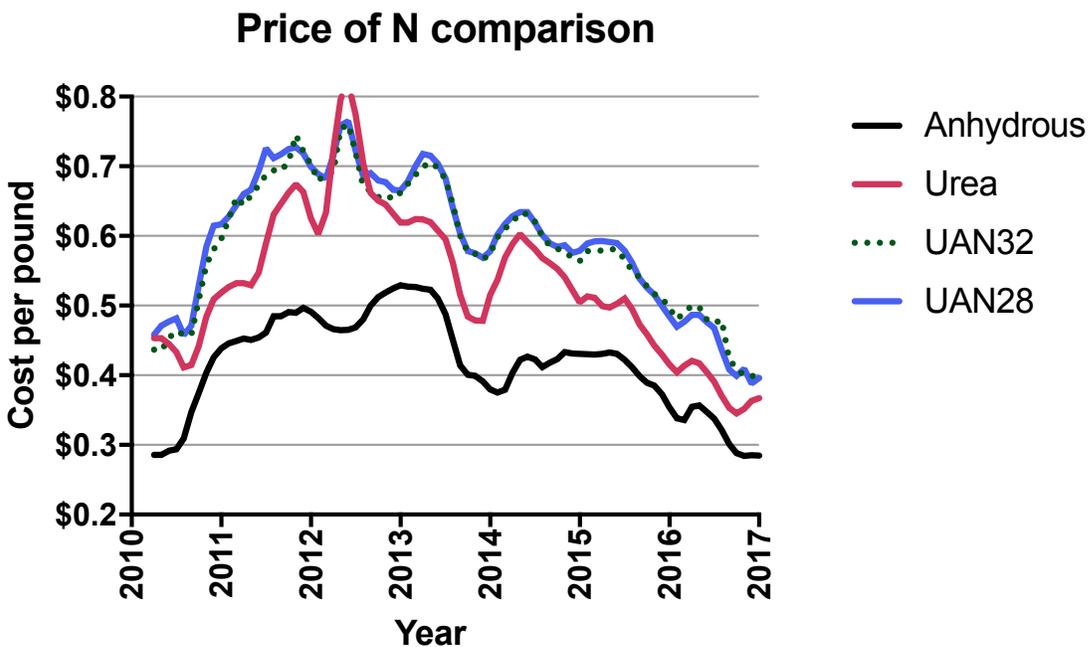


Figure 1. Cost of Actual N per Pound for Selected Nitrogen Fertilizers

systems and is much safer to apply. The disadvantage though is the higher cost.

Cost Considerations

Fertilizer prices per unit of actual N for selected fertilizers are shown in Figure 1. Anhydrous ammonia has a clear cost per unit advantage when considering only the nitrogen. Anhydrous ammonia price advantages can vary but the average difference is about \$0.12 per pound of N over the cost of urea.

This price advantage of anhydrous ammonia over urea can vary somewhat as shown in the frequency distribution of Figure 2. The most common price advantage is around \$0.08 per pound of N.

Application Costs

Another factor to consider is the cost of application. While anhydrous ammonia is the lowest price source of N, it often is the most expensive to apply as it must be knifed into the soil and the use of special equipment is needed. Based on custom rate surveys, the cost to

apply anhydrous ammonia can be \$6 to \$8 per acre more expensive than broadcast application of dry fertilizers. Even though the liquid products are the most expensive, their cost of application can be the lowest since the products can be combined with some pesticides and can also be applied in irrigation water.

Producers should consider all these costs together when looking at fertilizer expenses. Thus, the cost for the nitrogen must be included with the application cost when considering fertilizers. Other factors such as time constraints and safety need to be part of the decision too.

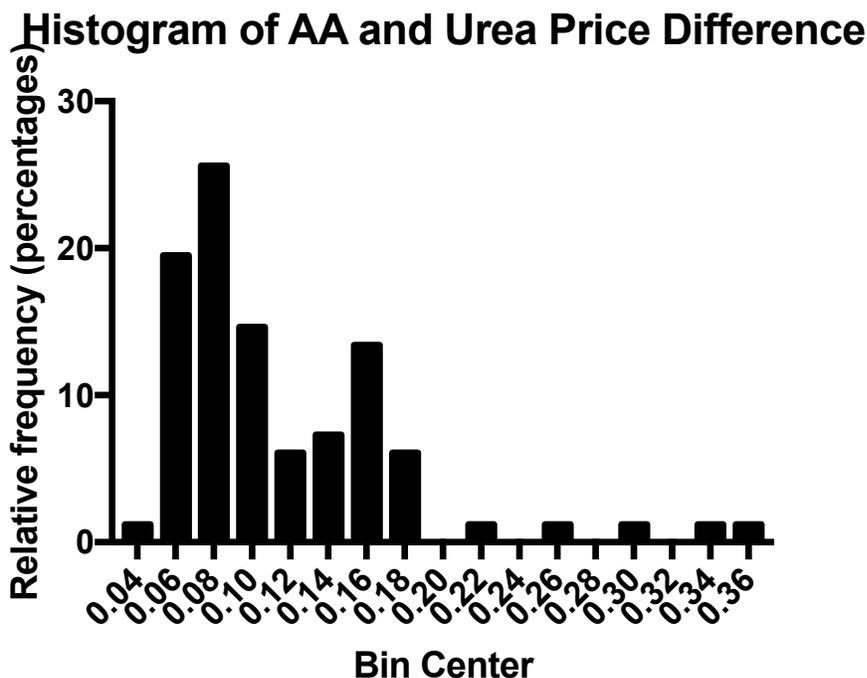


Figure 2. Frequency Distribution of the Price Advantage of Anhydrous Ammonia Over Urea