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How To Determine The Best Buy On Nitrogen Fertilizer

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Pasture fertilization is one of the most expensive items in the production of beef on improved pastures. Of all the nutrients nitrogen is by far the most utilized for maximum production of high quality forage in Florida. Soils in Florida (with the exception of peats and mucks) do not provide enough nitrogen for forages, thus it is necessary to use nitrogen fertilizer.

There are many different sources of nitrogen available on the market varying in price, composition, availability and form. Below is a table showing different nitrogen fertilizer sources, the percent nitrogen they contain and the rate of nitrogen availability. It should also be mentioned that nitrogen fertilizer either contain nitrogen in the ammonium form and/ or the nitrate form, both of which are equally available to the plant once they dissolve into solution.

With the escalating costs of fertilizers it is crucial for the grower to have an understanding of what kind of fertilizer he or she is buying and how to calculate the actual cost of nitrogen on an equal per unit basis for comparison.

Research has demonstrated that one should probably buy the cheapest form of nitrogen for pasture production. In order to compare apples with apples it is necessary to convert fertilizers to the actual amount of nitrogen contained in the bag and then determine the cost per unit of nitrogen.

For example one ton (2000 pounds) of ammonium nitrate currently costs approximately \$ 150/ton. Ammonium nitrate contains 34 percent nitrogen. Thus, 2000 pounds x .34 (percent N) = 680 pounds of nitrogen in one ton of ammonium nitrate. This 680 pounds of nitrogen cost \$ 150, or 22 cents per pound of nitrogen.

In comparison one ton (2000 pounds) of ammonium sulfate currently costs approximately \$105/ton and contains 21 percent nitrogen. Thus, 2000 pounds x .21 (percent N) = 420 pounds of nitrogen in one ton of ammonium nitrate. This 420 pounds of nitrogen cost \$105, or 25 cents per pound of nitrogen.

One can see from this example that ammonium sulfate looks cheaper per ton than ammonium nitrate, but when calculated per unit of nitrogen it is more expensive. However, it should be noted that at times ammonium sulfate is less costly per unit of nitrogen than ammonium nitrate. This demonstrates the importance of calculating what fertilizer cost is per pound of nitrogen.

A second procedure is to purchase your fertilizer spread with a specific number of nitrogen units/acre (pounds of nitrogen/ acre). Then compare the cost/acre of purchasing a formula containing the various sources of nitrogen your fertilizer dealer may have available.

Table 1. Nitrogen Fertilizer Materials		
Source	Percent Nitrogen	Rate of Availability
Ammonium Nitrate	34	Very Rapid
Ammonium Sulfate	21	Rapid
Urea	46	Rapid
Ammonium Phosphate	11-21	Rapid
Anhydrous Ammonia	82	Rapid
Sewage Sludge	6	Moderate