

Paul C. And Edna H. Warner Endowment Fund for Sustainable Agriculture

Report Form

Summary: (Describe your project, its objectives and results in one or two sentences)

Many livestock owners use the granular form of urea nitrogen during late summer and fall trying to increase forage growth for “stockpiled” forage, then livestock are then allowed to graze when other forages no longer are growing or available which reduces the need for higher priced stored feed. This study was done to determine the effects of using urea, adding a urease inhibitor (nitrogen stabilizer) product to urea, at the labeled rate, before applying the urea to the forage, and applying ammonium sulfate (all treatments received 46 lbs. nitrogen/acre). According to a previous identical study (we are replicating over years for validity), when there are hot, dry, humid conditions applying fertilizer to stockpile in the summer, adding a urease inhibitor may effectively increase yields.

What was done? (One paragraph describing the goals, experiments and how they were performed)

The objective was to determine any difference in dry matter accumulation between treatments and detect changes in quality characteristics of the forages. Each of the three treatments and control (no fertilizer added) were replicated four times at three locations in Southeastern Ohio. The study was initiated on July 31, 2017 and the plots were harvested on November 13, 2017. Each of the 48 plots were tested for yield and quality.

What were the results? (One paragraph on the outcome of the experiments, what was learned from them)

Results from the testing were received on December and initial results indicate that in this study, all treatments had significantly higher yields than the control of no nitrogen added. This is different than previous studies where the urea with the nitrogen inhibitor had higher yields than urea alone. The likely reason for this difference was a significant rainfall at each location within 48 hours of the initiation of the study. Based on the previous study and review of literature, these results are consistent with previous studies.

How have the results contributed or will they contribute to sustainable agriculture? (One paragraph on how will farmers use this research information and what difference will it make on their farms.)

During most growing years, producers would expect over 1000 lbs of additional growth from 46 lbs N/acre. If urea can be applied before an expected rain, no nitrogen inhibitor

needs to be added to urea. If rainfall is uncertain, the addition of a nitrogen inhibitor to urea can be beneficial. When feeding stored feed can account for 75% of the cost of maintaining a ruminant animal, stockpiling forages instead of feeding additional feed can save money. One needs to consider also the application costs, labor to feed stored feed, the animal utilization of the stockpiled forages, and the stored feed. In many cases, stockpiling is a viable option to reduce costs and save time.

2017 Nitrogen & Agrotain® Study

Berry Hill Farm



Three sites are pictured here where nitrogen research with Agrotain® was studied. A complete random block design with plot sizes 6 x 20 feet were installed. The 2017 treatments were replicated four times and repeated at the three sites.

No urea, no additive (control)

100 lbs. urea per acre

100 lbs. urea per acre + labeled rate of four quarts Agrotain®/ton of urea

219 lbs. ammonium sulfate

Plots were harvested November 13th and laboratory analysis run.

Results are being tabulated and the information will be provided to clientele throughout the area at a variety of meetings in 2018.

Eastern Agriculture Research Farm



Plots at Harvest Time



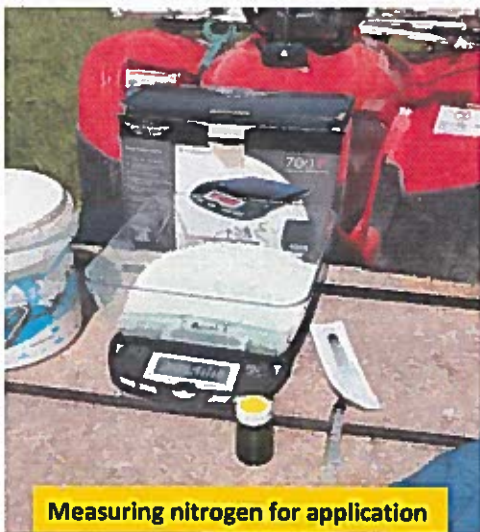
Bald Eagle Farm



2' X 2' Sample Collections



Measuring nitrogen for application



Plots at Harvest Time

