UREA-AMMONIUM NITRATE (UAN) SOLUTION PLACEMENT IN NO-TILLAGE CORN PRODUCTION

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ABSTRACT

Urea N fertilizers are subject to potentially high losses of N from volatilization in no-tillage systems. Common sidedress applications in corn production apply surface bands of urea-ammonium nitrate (UAN). This application method increases the probability for N-loss as volatilized ammonia. Subsurface banding (injection) of UAN greatly decreases the possibility of N-loss by directly placing UAN into the mineral soil. These field studies will be conducted for 3 years on multiple sites throughout the state of Virginia to compare the efficiency of surface banding and injection of UAN at sidedress in no-tillage corn production. Sites for the first year of the experiment were in the coastal plain and ridge and valley regions of Virginia. Nitrogen rates were 30, 60, 90, 120, and 150 lb N ac^{-1} for small plot studies as well as the producer N rate for the site, and -15%, and -30% of the producer rate for large plot or strip trials. The results for corn grain yield from the first year of the study showed that, there was no significant difference between surface banding and injection of UAN. Similar grain yield for the two methods of application at the ridge and valley sites were to be expected due to significant rainfall events shortly after sidedress applications. Precipitation data were not available at the coastal plain sites, but the absence in yield differences may also be due to rain events shortly after application. Precipitation data for many of the sites in the next two years of the study will be maintained for more accurate explanations of results.

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