BENEFIT OF SPLIT NITROGEN APPLICATIONS IN NO-TILL DRYLAND CORN PRODUCTION SYSTEM

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Key Takeaway: Split application is recommended in no-till dryland corn production systems when all the recommended nitrogen (N) rate is 120 lbs. N/A or greater.

Introduction

• Applying all the recommended N in no-till dryland corn prior to, or at, planting is not recommended. One exception is the application of anhydrous ammonia.
• Split N fertilizer applications lowers the risk of N loss and improves yield compared to single application.
• A recommended N management practice for corn growers in Tennessee is to split-apply a third of the recommended N at planting and sidedress the remaining N fertilizer.
• Information on the response of newer corn hybrids to split and single applications is limited.

Objective

• Compare the effect of single and split N fertilizer application at 4 N rates on corn grain yields.

Trial

• Years: 2021.
• Experimental Design: RCB/4 Replication.

Results

• Split N applications increased corn yield over single N applications at the 120 lbs. N/A and beyond (Figure 1).
• Split N applications at the 180 lbs. N/A increased corn yield over single N applications at the 240 lbs. N/A rate.
• There was no significant yield difference at the 180 lbs. N/A rates and beyond for split N fertilizer application.
Benefit of Split Nitrogen Applications

Figure 1. (A) Ammonia loss at sampling time and (B) cumulative ammonia loss from N fertilizer treatments over the 18-day period in 2020. Average across six trials.