Nitrogen Use Efficiency as Influenced by Tillage and Method of Ammonia Application. (S04-raun113215-Poster)

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Abstract:

Nitrogen use efficiency (NUE) is estimated to be 33% throughout the world, and can be lower when N is applied in single, pre-plant applications compared with split applications. This study was conducted to evaluate tillage system and anhydrous ammonia application methods on yield, N uptake, and NUE in hard red winter wheat (Triticum aestivum L.), using a narrow (10 cm) nozzle spacing on a V-blade (Noble or sweep blade) applicator and wide (46 cm) nozzle spacing on a knife applicator. At Stillwater no differences between no-till and conventional-till treatments in grain yield were observed the initial year, however conventional tillage did yield higher the second year. Conventional-till increased grain N uptake in consecutive years at Efaw. At Lahoma, conventional tillage increased grain yield in consecutive years and grain N uptake the second year. No-till increased NUE the initial year, with no differences found the second year. Application of anhydrous ammonia with a narrow nozzle spacing V-blade applicator may be more efficient than knife applied anhydrous ammonia.

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