

Instinct™ Nitrogen Stabilizer Demonstrates Value in Large-Scale Iowa Trials

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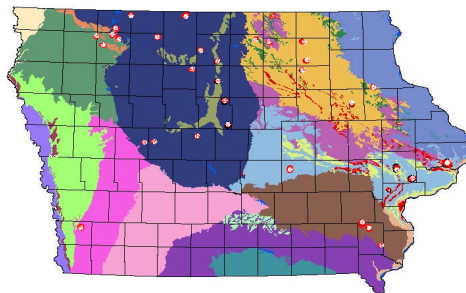


Introduction

Nitrogen is a vital nutrient used in the production of field corn. In 2009, roughly 5.0 to 6.4 million tons will be used for corn production in the US. Nitrogen price fluctuations, along with environmental concerns, have caused scrutiny on fall nitrogen applications because of potential losses due to leaching or denitrification. Nitrogen loss potentially endangers various water supplies and is inefficient use of input dollars. Nitrogen stabilizers, however, can maintain nitrogen in a form not subject to leaching or denitrification for several weeks after an application. Use of anhydrous ammonia plus N-Serve® nitrogen stabilizer has been an accepted practice over the last three decades for minimizing nitrogen loss. Unfortunately, that same nitrogen management strategy has not been readily available to growers who use other forms on nitrogen such as liquid (urea ammonium nitrate) or dry nitrogen (urea). Instinct™ is a new formulation of nitrapyrin which enables stabilization of liquid nitrogen and was field tested in large-scale trials throughout Iowa under a Special Local Needs permit in 2008.

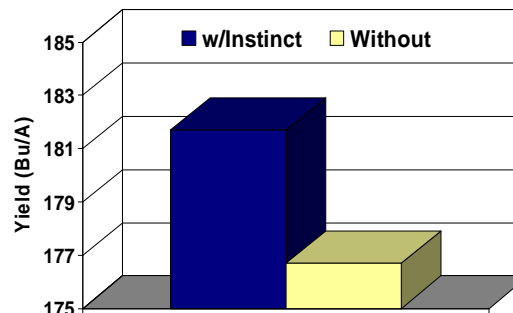
Materials and Methods

- Trials were placed with influential retail customers in Iowa
- Strips were usually replicated 3 to 4 times throughout commercial production fields
- Nitrogen applications and harvesting were conducted using commercially available farm equipment
- Aerial photography flown mid summer
- Yield components were taken at harvest
- Yields collected with on-board yield monitoring systems



Visual differences may be seen but are transient in nature.

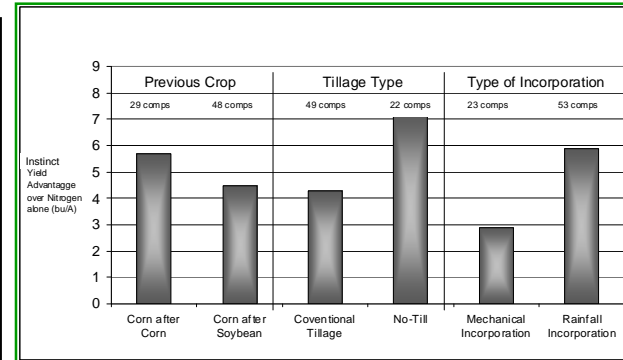
Graph 1: Overall Yield Effect of Instinct In Iowa, 2008



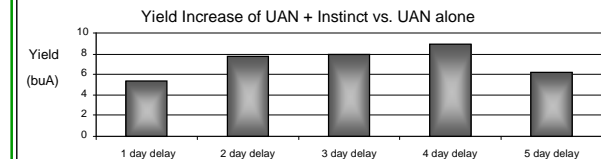
32 Trials, 77 Comparisons

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Graph 3: Yield Performance as a Function of Incorporation Delay



Summary

In 2008, Instinct™ nitrogen stabilizer gave a distinct yield advantage over liquid fertilizer alone in Iowa. The overall yield advantage of UAN + Instinct was five bushels per acre compared to UAN alone in 32 independent trials (Graph 1). Instinct gave a consistent yield advantage over UAN alone across various cultural practices, yet a greater yield benefit was observed when Instinct was used with corn following corn, in no-till corn and when incorporated by rainfall (Graph 2). To be an effective stabilizer in a liquid fertilizer program, Instinct needs to be surface stable and be able to be incorporated by rainfall. Instinct provided both attributes while delivering a consistent yield advantage across the rainfall incorporation timings observed (Graph 3). The Iowa Instinct dataset helped prepare for the launch of Instinct™ nitrogen stabilizer, in liquid fertilizer markets throughout the cornbelt in 2010.