Effect of Reformulated Nitrapyrin upon Corn Grain Yields in Iowa. (S04-killorn112455-Poster)

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Abstract:

The nitrification inhibitor nitrapyrin has been difficult to use in broadcast applications of liquid N (UAN) because of its tendency to volatilize. A reformulation of nitrapyrin is less volatile and needs to be studied to determine how best to use it. A study was conducted at two sites in 2000 and 2001. UAN, with and without, reformulated nitrapyrin was applied to supply N from 0 to 240 lb/a. The treatments were applied in the spring each year. The crop was corn. Whole plant samples were collected after the plants reached physiological maturity to determine biomass production and N uptake. The experiments were harvested in the fall each year and sub-samples of grain were retained to analyze for N content. Corn growth at both sites was affected more by weather than by N availability. Grain yields increased with N fertilizer application at site 1 in 2000, but not at site 2. There was no response to N at site 1 in 2001 but grain yields increased with N at site 2. The same was true for whole plant biomass production. There were no measurable responses to addition of the reformulated nitrapyrin at either site in either year. Lack of response was due to weather conditions that did not favor loss of nitrate from the soil.

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