Topographic Interaction With Nutrient Mitigation of Crop Stress: Eight Site-Years on Early Planted Corn Response to Starter in Kentucky-Pennyroyal Landscape.. (S04-grove112306-Poster)

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Abstract:

Corn response to in-row fertilizer should interact with field topography. The objectives of this study were to evaluate corn response to in-row fertilizer as a function of soil and landscape properties and to determine the spatial probability of an economic response. Alternating passes, with and without fertilizer, applied at 14.5 kg N and 5.7 kg P per ha, were made within eight fields in 1999, 2000 and 2001. Sites exhibited similar yield-driving characteristics (elevation, slope, and soil clay). Slope was negatively related to yield. Profile and plan curvature did not always affect yield, but when significant, were positively related. Yield and population responses to fertilizer did not follow the same spatial pattern in the fields. The yield response to fertilizer was generally positive and usually above economic threshold, but not in all fields. There was little pattern to the probability of an economic response in some fields, due in part to drought. Landscape properties explain an important part of the yield variation, but need to be combined with soil properties (texture, soil test P) to better explain the yield response to in-row fertilization.

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