Spring Nitrogen Use Efficiency and Yield Results from Site-Specific Nitrogen Management in Winter Wheat. (S08-flowers190315-Poster)

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Abstract:

Site-specific nitrogen (N) management based on an in-season assessment of crop N status may offer producers increased grain yield, profitability, and spring nitrogen fertilizer use efficiency (SNUE). The objectives of this study were to compare site-specific and field-specific (whole field average) N management based on in-season crop N assessment, with two typical growers N management practices across eight site-years, six soil types, two tillage systems, and six wheat varieties. Grain yield of site-specific and field-specific treatments were not significantly different, but were always as high or up to 2267 kg / ha higher than typical growers practices. This indicated that for yield, in-season optimization of N rate was more important than site-specific management. In-season optimization of N also reduced N fertilizer inputs by up to 48.6% in the field-specific treatment. Site-specific management further reduced N inputs by up to 19.6% compared to the field-specific treatment. Consequently, site-specific N management maximized SNUE (0.37 - 0.47) compared to all other treatments.

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