

Mid-May 2022 Investment Insight

Next generation cover cropping in Southern Illinois

“Next Generation Cover Cropping in Corn-Soybean Rotation to Improve Farm Benefits and Decrease Environmental Losses in South and Central Illinois.”

Dr. Amir Sadeghpour and his team led this project to evaluate altering planting dates by interseeding and using precision planting of cover crops to skip the corn/soybean row – known as “skip row” planting and to evaluate whether “skip row” allows for delayed termination of cover crop mixtures. Precision planting of winter cereal rye or ‘skipping the corn row’ (STCR) can minimize some issues associated with winter cereal rye ahead of corn while reducing cover crop seed costs.

Data indicated that by switching from normal planting (NP) to skip row; (STC), corn yields increased and Economic Optimum Rate of N (EORN) decreased - suggesting the benefit of precision-planted winter cereal rye (STCR) as a practice to deal with planting winter cereal rye prior to corn. To further improve these practices, researchers need to assess integrated cover crop management practices with STCR - especially seeding rate and termination date.

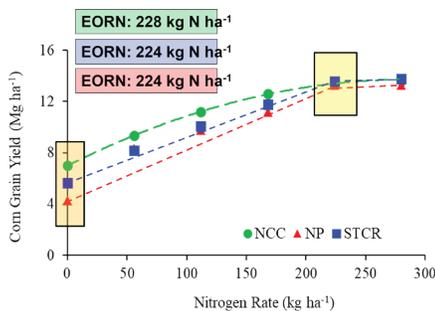
To accommodate interseeding, a new herbicide protocol was established and assessed whether half a rate of residual herbicide vs. full herbicide management would impact the establishment

of cover crops and corn yield. Corn yield was not impacted by the presence of cover crops and cover crops emerged under full- and half rate-herbicide protocols.

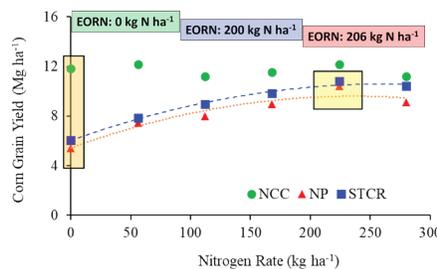
A hybrid rye was tested as a supplemental trial to assess inclusion of a new easily decomposable rye vs. typical rye cover crops that resulted in greater biomass and nutrient removal. Hybrid rye decomposed similar to typical rye and did not improve the following corn yield. This will be re-evaluated for another year.

Also participating in this research is Dr. Karl Williard (Southern Illinois University), Dr. Andrew Margenot (University of Illinois) and Dr. Shalamar Armstrong (Purdue University).

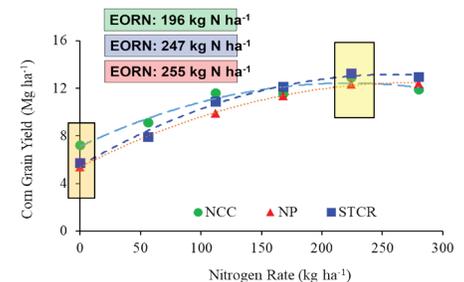
Corn Yield (ARC2020)



Corn Yield (BRC2020)



Corn Yield (ARC2021)



N price = \$0.55/lbs N

Corn price = \$5.5 bu/acre

Economic optimum rate of N (EORN) in corn following a no-cover crop control (NCC), normal planting of winter cereal rye (NP) and precision planted winter cereal rye (STCR). A and C are trials at ARC in 2020 and 2021 and B is the trial at BRC in 2020.



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