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Soybeans can be more profitable ‘planted green’

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Clipping rye biomass on the day of planting green. Photo by Heidi Reed.

Increasingly, farmers are trying to maximize cereal rye cover crop biomass by planting soybeans “green” into the living cover before killing the cover with an herbicide. However, scientists have not thoroughly explored the best combination of rye seeding rate, nitrogen fertilization, and cover crop termination timing needed both to optimize rye biomass and to maintain soybean productivity (compared with a preplant-killed cover crop).

In a recent article in *Agronomy Journal*, researchers working in Pennsylvania evaluated the impacts of rye seeding rate, nitrogen topdress rate, and termination timing on cereal rye biomass, soil moisture and temperature, and soybean yield. The group found that N rate did not affect rye biomass when rye was preplant-killed. However, when they allowed rye to grow longer by planting green, the high N rate increased rye biomass by 17% over the low N rate. The researchers also found that at one location, across seeding rates, soybean yield was reduced by 3–4% when planting green was paired with the high N rate.

The team concluded that planting green can maintain cover crop biomass and soybean yield while reducing rye seed and N topdress rates, resulting in greater profitability in some instances than preplant-kill.

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Reed, H.K., & Karsten, H.D. (2022). Does winter cereal rye seeding rate, termination time, and N rate impact no-till soybean? *Agronomy Journal*, *114*, 1311–1323. **https://doi.org/10.1002/agj2.21030**

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