FALL COVER CROPS AND FALL MANURE

Matt Ruark [1/]

The abundance of late summer-harvested corn silage in Wisconsin means that there are many acres where manure can be applied between late summer and later fall. Current nutrient management guidelines estimate manure N availability based on animal source, solids content, and application method, but no adjustments are made regarding application timing. A Wisconsin Fertilizer Research program-funded research project evaluated how fall grass cover crops affect the amount of N in the fall applied manure will be available to a subsequent corn crop. Results of this research have shown that cover crop biomass influences the amount of N in the manure that will remain for the next corn crop. If there is greater than 2,000 lb/ac of dry matter biomass, the cover crop will have used all the N from the manure, while if there is less than 1,000 lb/ac of dry matter biomass, the effect on the manure N credit is minimal.

Table 3 in Cover crops, manure, and nitrogen management (https://learningstore.extension.wisc.edu/products/cover-crops-manure-and-nitrogen-management).

Cover crop biomass (lb/ac)	Estimated N uptake (lb/ac)	Amount to adjust manure N credit (lb/ac)
<1,000	<25	No adjustments needed
1,000–2,000	25–45	Subtract 35 lb/ac from manure N credit if winter rye was used*
>2,000	>50	Do not take any manure N credit†

*There was no clear effect when winterkilled cover crops were used based on Wisconsin research (inset).
†This recommendation applies to manure N applications up to 100 lb/ac of available N.

(Adapted from the UW-Division of Extension publication “Cover crops, manure, and nitrogen management”; the full report can be found at: https://learningstore.extension.wisc.edu/products/cover-crops-manure-and-nitrogen-management)

[1/] Professor and Extension Soils Specialist, Dept. of Soil Science, Univ. of Wisconsin-Madison, Madison, WI 53706.