

# EVALUATION OF SPRING RESIDUE COVER WITH WINTER RYE AS A COVER CROP FOLLOWING CORN SILAGE

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## Introduction

As dairymen across northeast Wisconsin expand herd size, more corn silage is being grown to meet forage needs. On erosion prone slopes with limited residue cover, soil and water losses are a concern following corn silage harvest.

Using winter rye as a cover crop following corn silage is one of several cover crop options. Some growers using rye in this situation are experiencing problems in spring with excess soil moisture use and green crop residue to contend with (Stute, 2000). Local growers have raised specific questions regarding how long winter rye needs to be left standing in spring to achieve adequate residue cover after tillage. NRCS standards suggest a 30% residue cover on highly erodible land.

The purpose of this study was to determine the differences in residue cover following a winter rye cover crop suppressed in spring with herbicide at various plant heights.

## Methods

On September 20, 1999, winter rye was no-till drilled at 150 lb/acre into corn silage stubble following silage harvest on the Jay Fitzgerald farm, Manitowoc County. Winter rye strips were sprayed in spring with Roundup Ultra (1.5 pt/acre) and ammonium sulfate (17 lb/100 gallons of water) at four plant heights (6, 12, 18 and 24"). Shallow disking (2-3") followed. Residue cover was measured across each strip using the line transect method. A randomized complete block design with three replications was used. Statistical analysis was done using AgStats2 (Karow, 1990).

## Results and Discussion

Although residue cover was significantly greater with increasing plant height, an 18" plant height was required to achieve over 30% residue cover. This didn't occur until May 9 (Table 1).

**Table 1. Winter Rye Residue Cover Comparisons Following Spring Herbicide Suppression and Shallow Disking at Various Plant Heights, Manitowoc, WI**

Treatment	Herbicide Suppression Date	Winter Rye Residue Cover After Shallow Disking
		---%---
1. 6" Rye	April 27	5
2. 12" Rye	May 5	10
3. 18" Rye	May 9	34
4. 24" Rye	May 15	72
Mean		30.2
Residue cover CV (%)		5.5
LSD 5%		3.3

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5/09/00



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Variations in plant height on specific dates may vary somewhat across growing seasons. Growers should recognize that spring corn planting may be delayed beyond optimum early planting dates with full season hybrids if a residue cover of 30% or higher is desired. Planting shorter season hybrids is a logical possibility. No-tilling soybeans provides another option that would not be comprised with a mid-May planting date. Zone-till corn offers an additional choice to accommodate earlier corn planting.

In this study, spring rains delayed possible corn planting until after June 1. At this point, the decision was made to plant forage sorghum. Forage sorghum was planted the week of July 3.

Winter rye appears to be a workable cover crop option for highly erodible situations in northeast Wisconsin if alternative planting options for the succeeding crop are kept in mind.

## References

- Karow, R., 1990. AgStats ver. 2.2. Oregon State University
- Stute, J.K. 2000. Cover crop options after corn silage. Proc. Wis. Fert., Aglime and Pest Mgmt. Conf. 39: 419-224.

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