2012
Cover Crop Planting Date x Seeding Rate Trial

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Table 1. Agronomic and trial information for the cover crop planting date x seeding rate study, 2011- 2012.

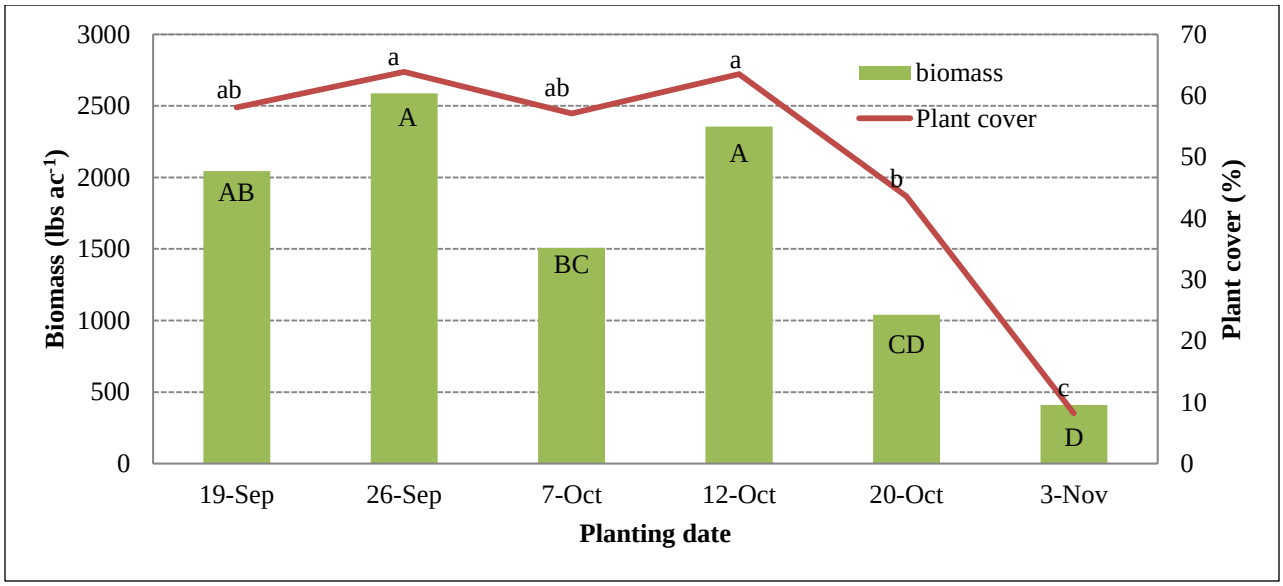

Figure 1. Impact of planting date on cover crop biomass and percentage of ground cover in Alburgh, VT. Treatments that share a letter were not significantly different from one another (p=0.10, compare capital letters for biomass and lower-case letters for percent cover).

Impact of Planting Date and Seeding Rate on Winter Rye Production

Planting Date x Seeding Rate Interaction

Interestingly, there was no significant interaction between cover crop planting date and seeding rate. This indicates that the winter rye performed similarly across seeding rates regardless of the planting date. Hence, we would assume that the same seeding rate can be used regardless of how early or late the cover crop is planted. This may be a result of mild fall weather enabling the winter rye to become well established and set tillers prior to fall dormancy. Therefore, the remainder of the report will focus on the main of effects of planting date and seeding rate.

Impact of Planting Date

With the exception of the 7-Oct planting date, cover crop establishment was similar across planting dates (Table 5 Fig. 2). The trial mean winter rye biomass was 2065 lbs ac^{-1}. Winter rye planting between mid-September and mid-October allowed for adequate ground cover averaging 57.6% for the trial. The cover crops also scavenged nearly 40 lbs of nitrogen per acre. The 7-Oct planting date resulted in lower biomass yields, height, and ground cover than all other planting dates. This may be due to adverse weather at the time of planting.

Table 6. Impact of seeding rate on cover crop yield and quality, Alburgh, VT.

Seeding rate	Biomass	Average height	Ground cover	Nitrogen	Nitrogen
lbs ac^{-1}	lbs ac^{-1}	cm	%	lbs ac^{-1}	%
50	2045	59.4	53.7	37.6	1.9
75	1750	59.3	55.5	33.3	**2.1**
100	2124	**60.2**	**60.7**	39	1.8
150	**2342**	59.3	60.4	**42.4**	1.8
LSD (0.10)	NS	NS	NS	NS	NS
Trial mean	2065	59.5	57.6	38.1	1.9

NS No statistical significance was determined between varieties.
*Varieties that did not perform significantly lower than the top performing treatment (in bold) in a particular column are indicated with an asterisk.

DISCUSSION

In the Northeast, where the fall tends to be cool and wet, timing corn harvest and cover crop planting is important to maximize corn yield, but also to maximize the soil health and financial benefits of a cover crop. Early fall planting of winter rye allows for significant vegetative growth that provides a greater mass of overwintering roots to hold the soil and reduce risk of erosion. In addition, winter rye has the ability to scavenge N from the soil. The more plant biomass produced, the more N that can be scavenged. Therefore, earlier planting dates that yield more biomass would also provide more N in the spring. If combined with planting shorter season corn, data from this trial suggests that planting cover crops in September or early October can provide significant cover to the soil surface as well as scavenge very high amounts of nitrogen.

Overall, winter rye biomass, average height, and percentage of ground cover dropped significantly for cover crops planted after mid-

ACKNOWLEDGEMENTS

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