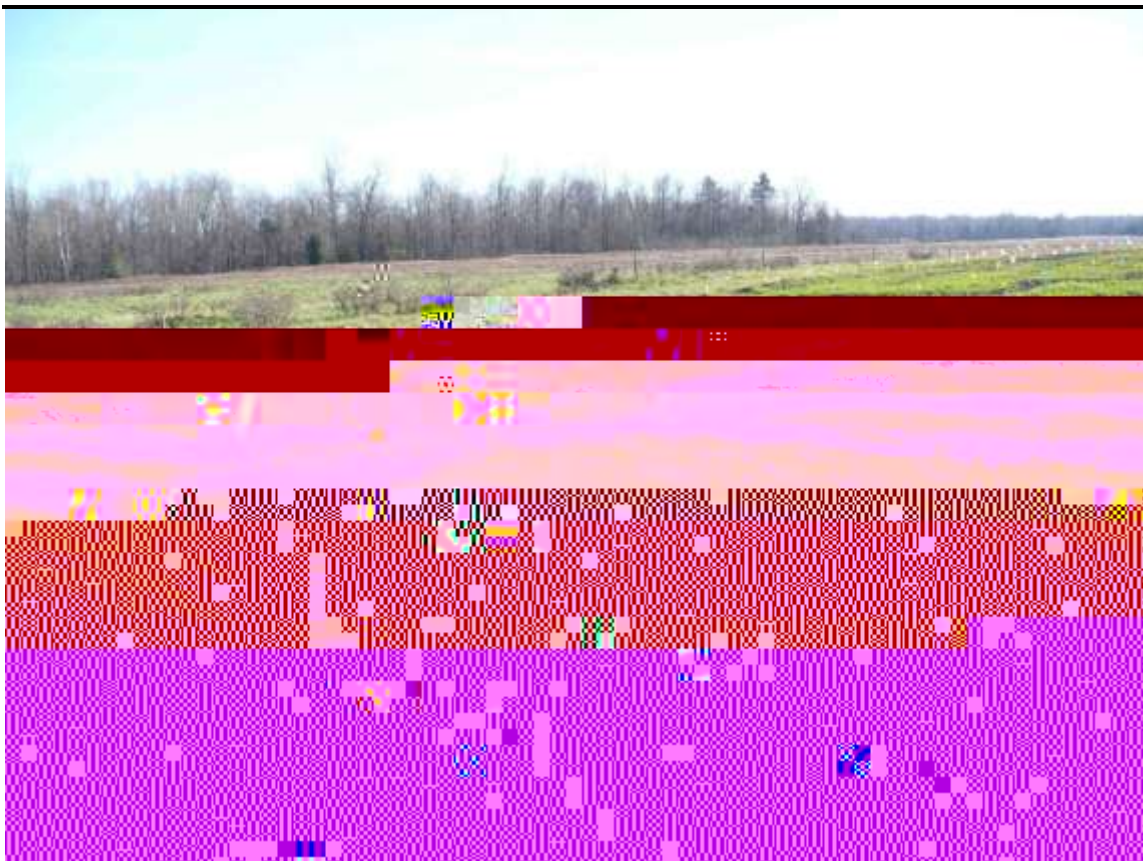


# 2010 Cover Crop Planting Date x Seeding Rate Trial Report



## **INTRODUCTION**

When corn silage is harvested in the fall, the entire plant is removed, leaving the soil exposed through the winter. Many farmers have started to plant cover crops following corn harvest because of the multitude of benefits cover cropping brings to soil health and fertility. The cover crop protects the soil from erosion, adds organic matter, and also scavenges excess soil nitrogen (N), releasing it again after being terminated in the spring. This keeps the nitrogen from potentially being lost through leaching, which, in addition to the soil benefits, provides a financial benefit to farmers – less nitrogen loss means less fertilizer needed in the spring. Farmers have asked about best practices for growing cover crops to maximize benefit to the soil, planting date for cover crops is important in our region where the growing season is short and common adverse fall weather can delay planting. This study was intended to determine what planting dates and which seeding rates give the best cover crop performance into the spring.

## **CULTURAL PRACTICES**

The trial field was disked to prepare the seedbed for planting. The experimental design was a randomized complete block in a split plots design. Main plots were planting dates beginning on September 5, 2009, and occurred roughly weekly for eight weeks to establish eight different planting date treatments (table 1). Seeding rates of 75, 100, 125, and 150 lbs per acre were

Table 2. Summarized weather data for the 2009 - 2010 cover crop growing season.

<b>South Hero (Alburgh)</b>	<b>September</b>	<b>October</b>	<b>February</b>	<b>March</b>	<b>April</b>	<b>May</b>
Average Temperature	57.7	44.1	26.2	37.8	49.3	59.6
Departure from Normal	-2.7	-4.7	5.9	7.0	5.8	3.0
Precipitation	4.01	5.18	1.85	2.79		

**Table 3. Effect of planting date on yield, height, cover, and growth stage characteristics**

<b>Planting Date</b>	<b>DM yield</b>	<b>4/1 Height</b>	<b>Cover</b>	<b>4/22 Height</b>	<b>Flowering (5/11)</b>
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Winter rye height and flowering date were significantly impacted by the date of planting. Winter rye had an average height of 3 feet when seeded in mid to end of September, which was a foot taller than rye planted in October. Though the effect was not as pronounced early in the season, the difference between the early and late planting dates became more and more clear as the spring progressed (Figure 2).

Winter rye planted in September reached the flowering stage one to two weeks earlier than later planted rye. Flowering time of rye is important if implementing rolling and crimpling termination strategies. The earlier flowering dates can allow for timely planting of corn or soybeans into the killed mulch.

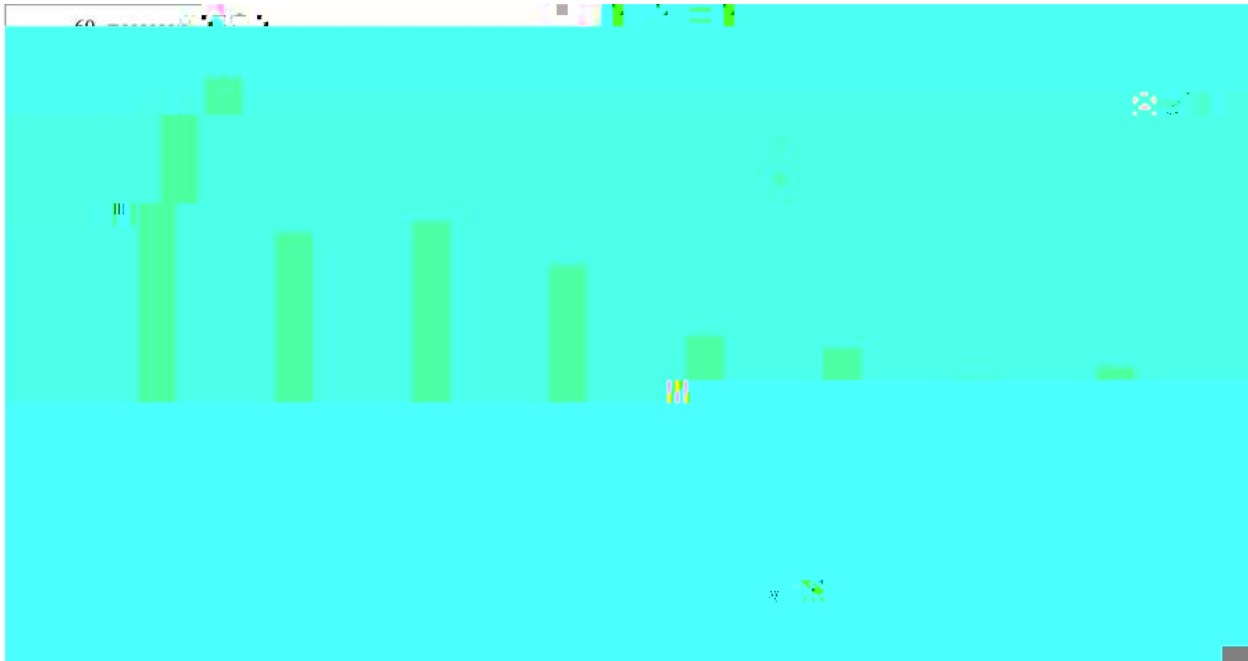
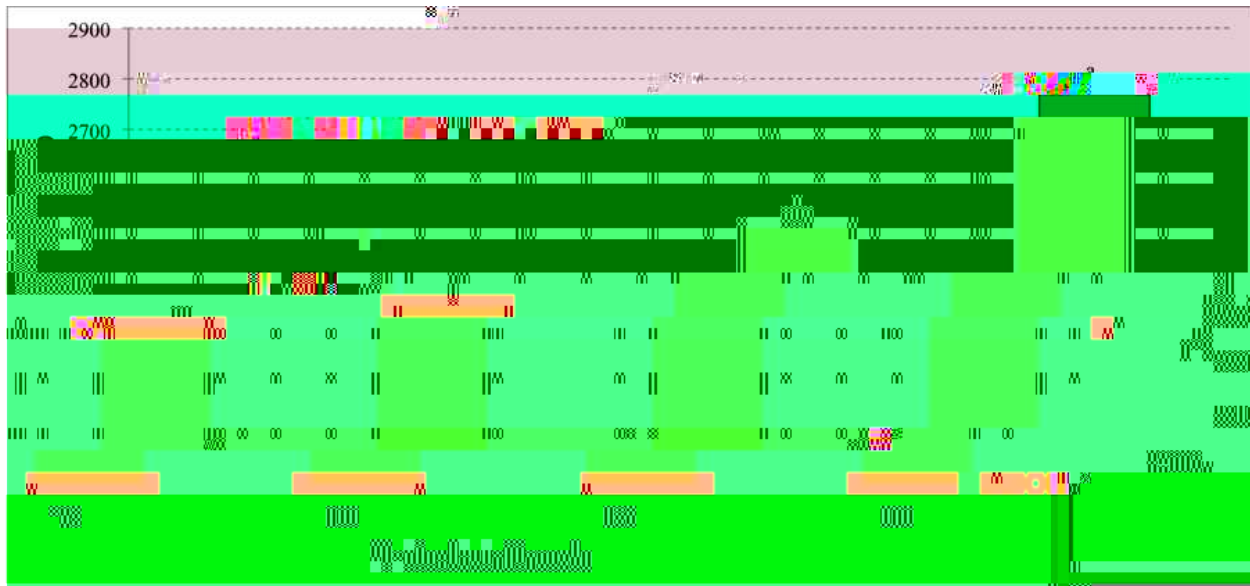


Figure 2. Effect of planting date on winter rye height on two dates, April 1 and April 22. Lower case letters



**Figure 3. Effect of seeding rate on winter rye dry matter yield per acre. Values with the same letter did not perform significantly differently ( $P < 0.10$ ).**

## CONCLUSION

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 the cover crop. If combined with planting shorter season corn, data from this trial suggests that planting cover crops in Sep. can provide significant cover to the soil surface as well as scavenge very high amounts of nitrogen. If planting with a grain drill the seeding rates can be reduced to as low as 75 lbs per acre. Although not evaluated in this project higher seeding rates may be required if broadcast seeding winter rye. Higher seeding rates would also be warranted as the planting date moves into the mid to late Oct. and winter rye has less time to produce biomass and additional plant tillers to provide cover of the soil surface.

## ACKNOWLEDGEMENTS

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