

# Cereal Rye Cultivar Trial - Preliminary Data

## Cereal Rye & Roller Crimping Field Day

### Iowa State University Horticulture Research Station

#### Why a Cultivar Trial?

The purpose of this research is to determine recommendations for cereal rye to be utilized by growers for roller crimping. As we assist growers in the adoption of the rolled cereal rye strip-tillage production system, it is important to provide recommendations on which cultivar of rye will perform best in Iowa. Currently, many growers are planting 'VNS' (Variety Not Stated) or Wheeler rye. Our study is examining the performance of five different cultivars planted on two dates (September 16 and October 13, 2015) for a total of 10 plots replicated 4 times.

We are comparing the following cultivars:

- Aroostook
- Elbon
- Prima
- Wheeler
- Wrens Abruzzi

#### Planting the Cereal Rye

All plots were tilled and cultimulched prior to planting. On both September 16 and October 13, 2015 all five rye cultivars were broadcast at a rate of 110 lbs/acre using a Gandy drop spreader. The seed was then incorporated by tilling at a 2" depth. Several continuous days of rain after the September planting date gave those plots a clear growing advantage, but plots from both planting dates were well established going into the winter months.



Cereal rye plots at heading stage on May 5, 2016 .



Cereal rye plots at anthesis (flowering) stage on May 21, 2016 .



The Gandy drop spreader was used to drop seed all plots at a rate of 110 lbs/acre.

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## Percent Winter Kill and Date of Anthesis

To determine the effect of seeding date on rye plant establishment, plant counts were taken from two subsamples on November 11, 2015 and again on March 17, 2016 to determine the average percent winter kill. With the exception of Prima, it appears the September planting date resulted in a lower percent winter kill for the remaining cultivars.

One of the most important purposes of this study is to determine the date of anthesis for each cereal rye cultivar. Rye cannot be successfully terminated with roller crimping until the rye has reached the reproductive stage (anthesis). It is good to note that planting date, which is important for rye establishment prior to winter, does not have a significant effect on the date of anthesis. Our first year of research is showing that Aroostook reached anthesis the earliest of the five cultivars.

Rye Cultivar	Planting Date	% Winter Kill	Date of Anthesis
Aroostook	September 16, 2015	8%	May 17, 2016
	October 13, 2015	4%	
Elbon	September 16, 2015	5.5%	May 19, 2016
	October 13, 2015	9%	
Prima	September 16, 2015	11%	May 21, 2016
	October 13, 2015	3.5%	May 22, 2016
Wheeler	September 16, 2015	3.5%	May 21, 2016
	October 13, 2015	8.5%	May 22, 2016
Wrens Abruzzi	September 16, 2015	5.5%	May 18, 2016
	October 13, 2015	6%	May 19, 2016



Aroostook



Elbon



Prima



Wheeler



Wrens Abruzzi

## Ongoing Research

This research is ongoing, and we will also be analyzing the biomass and carbon to nitrogen ratio of each rye cultivar, the effect of cultivar on soil coverage and soil temperature, the percentage of each cultivar successfully terminated with roller crimping, and the biomass of weeds that emerge in the rye after roller crimping.

**For more information about this trial please do not hesitate to contact us. Also, please consider attending the Fruit and Vegetable Field Day at the ISU Horticulture Research Station on August 15, 2016.**

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