

Date:
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Re-vegetating Berms & Cover Crops

Re-vegetation Plots

The re-vegetation project consists of a range of plots on berms, roadways and pipelines in the B.C. Peace Region.

There are 2 kinds of plots:

1. **Replicated research trials** which are side by side on the same berm, roadside or pipeline. They are scientifically measured to compare the growth and plant populations of each treatment.
2. **Demonstration plots** to test different species, seeding techniques or fertilizer formulations. The results of these demos influence the direction of future research trials in terms of seeding mixes of grasses and legumes, fertilizer formulations and seeding techniques for this environment.

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Introduction

This forage fact focuses on the results of two cover crop demo plots seeded in 2012, and how they have shaped the next cycle of research plots. Two plots are described here.

Plot # 1 Details

- ◇ 12 – 15 – 77 – 15 – W6 (south of Dawson Creek)
- ◇ Cut slope, sub soil berm
- ◇ 3 cover crops: fall rye, oats and perennial ryegrass seeded in 2012
- ◇ under seeded crop was fowl bluegrass, seeded at 20 lbs / ac



The table on this page shows the results of cover crop growth. With all 3 cover crops, the fowl bluegrass did not have enough moisture to germinate.

Crop	Seeding Rate	Results of Cover Crop Growth
Fall Rye	70 lbs/acre	<ul style="list-style-type: none"> ◇ The fall rye showed poor germination, but produced better results than the oats. ◇ The plants showed stress caused by drought and lack of soil fertility.
Oats	70 lbs/acre	<ul style="list-style-type: none"> ◇ The oats showed very poor germination. ◇ The plants showed severe stress caused by drought and lack of soil fertility.
Perennial Ryegrass	70 lbs/acre	<ul style="list-style-type: none"> ◇ Perennial ryegrass germinated well in areas where the moisture was held, such as equipment tracks, but did not germinate in other drier areas. ◇ The plants showed severe moisture and soil fertility stress and most plants died.

Plot # 2 Details

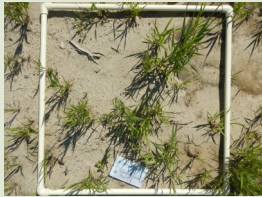





- ◇ 13 – 18 – 79 – 18 – W6 (west of Alaska hwy NW of Dawson Creek)
- ◇ south berm, sub soils
- ◇ 1 cover crops: fall rye seeded 2012
- ◇ under seeded crop was smooth bromegrass

- ◇ Seeded at 2 rates: 20 lbs / ac and at double rate of 40 lb/ac
- ◇ Fertilized at 2 rates: 0 and 50 lb/ac

The table on the next page of this forage fact summarizes the results of cover crop demo plot #2.

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Crop	Seeding Rate	Photos	Results of Bromegrass Growth in 2013
Smooth Bromegrass Regular Seeding Rate No Cover Crop	Regular Seed Rate 20 lbs/acre No Fertilizer		<ul style="list-style-type: none"> ◇ Generally there was poor germination without fertilizer . ◇ The plants with no fertilizer application are sparse and short. ◇ Even though the application of fertilizer was at a low level, it made a very large difference in the density of the smooth bromegrass crop. ◇ Fertilizer application resulted in low to acceptable plant populations, but they were better than with a cover crop.
	Regular Seed Rate 20 lbs/acre Plus Fertilizer 27-16 - 8		
Smooth Bromegrass Double Seeding Rate No Cover Crop	Double Rate 40 lbs/acre No Fertilizer		<ul style="list-style-type: none"> ◇ There was very little difference evident in the plant populations with regular verses double seeding rates. ◇ However, the application of fertilizer showed a very large improvement in the plant germination, vigour and population for both regular and double seeding rates.
	Double Rate 40 lbs/acre Plus Fertilizer 27-16 - 8		
Smooth Bromegrass Regular Seeding Rate With Cover Crop of Fall Rye	Regular Seed Rate 20 lbs/acre No Fertilizer		<ul style="list-style-type: none"> ◇ Generally poor germination without fertilizer. ◇ The plants with no fertilizer application are sparse and short. ◇ Even though the application of fertilizer was at a low level, it made a very large difference in the density of the smooth bromegrass crop. ◇ Fertilizer application resulted in lower plant populations, that were less than without cover crop.
	Regular Seed Rate 20 lbs/acre Plus Fertilizer 27-16 - 8		

**Forage Fact Series
About Re-vegetation**

This forage fact is one of a series that are being produced as part of the Re-vegetation Project. For more info see Forage Fact #71-75 and #78-82.

Where to from here?

The results of these demo plots influenced the next cycle of plots seeded in 2013 in several ways. Using fall rye as a cover crop was clearly a disadvantage in establishing the bromegrass, even after adding fertilizer. Thus the variety of cover crops seeded in the spring of 2013 was increased to include annual ryegrass, Dahurian wildrye, triticale, perennial ryegrass, fall rye and oats. Fertilizing was based on soil test recommendations rather than a standard recipe rate to ensure cover crop and grass crop are not competing for nutrients.



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