

Date:  
March 2015

# Spring Verses Fall Seeding Does It Really Matter?

*“I’ve been wrong before  
but I didn’t realize  
how wrong  
until I looked through  
this project’s data.  
Turns out grasses do just  
fine seeded in the fall  
and all this time,  
I thought it was  
better for legumes.  
It looks like legumes  
prefer spring seeding.  
Who knew!!”  
~Julie Robinson*

## Introduction

I think we all have wondered about the fall verses spring seeding dilemma. We’ve all met the person or seen the field that did awesome when... but we can’t seem to all agree on the details of how we got to AWESOME!

The Re-vegetation Project attempted to answer this question with some well timed research level plots that were spring and fall seeded. This fact sheet will review the results from two sites, one in the Farmington - Bessborough area and another on the east banks of the Pine River.



Fall (or winter) seeding Nov 2012 at Shell site near the Pine River.

Wondering what to seed,  
how much to seed or  
where to get it...  
Visit

[www.peaceforagetool.ca](http://www.peaceforagetool.ca)

Seed selection, mix calculator,  
seed suppliers

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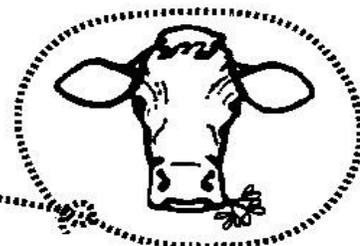
Spring 2013 seeding at Charlie Walker's site in Farmington.

## Methodology

These 2 sites were seeded Nov 7 and 15 in the fall of 2012 and June 4 and 6 in the spring of 2013. It was a wet late spring in 2013. Note: fall seeding is not seeding so early that the forage germinates and then overwinters as a seedling. These sites were **dormant seeded i.e. onto the snow**. This left us wondering if these seeds would all disappear with the snow when it melts, or would they somehow make their way to the soil?

The snow sure helped us to see seeding rates and distribution in the winter plots. We targeted 70 to 80 seeds per sq ft per species. Where we weren't able to achieve that, we made sure the rates were comparable from fall to spring seeding.

Peace River Forage Association  
of British Columbia



### So What Happened?

As you can see in the photos and Chart 1 below only 3 legumes performed better when seeded in the spring: **Algonquin alfalfa**, **cicer milkvetch** and **red clover**. Some of this variation could have been due to varying seed quality and age of seed.

Some species did perform better as spring seeded, while others such as **birdsfoot trefoil**, **multi-foliate alfalfa** and **white Dutch clover** showed no advantage to either seeding time.



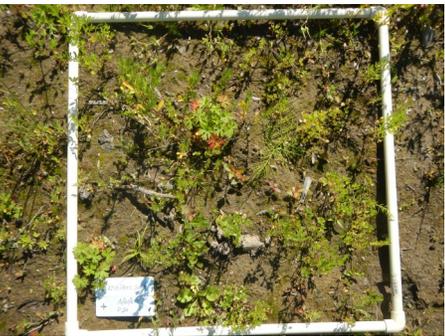
Above photo is **Anik alfalfa seeded fall 2012**. Picture taken **July 31, 2013**. Frame is 1/4 m².



Above photo is **Anik alfalfa seeded fall 2012**. Picture taken **July 17, 2014**. Frame is 1/4 m².



Above photo is **cicer milkvetch seeded fall 2012**, photo taken **July 17, 2014**. Frame is 1/4 m².



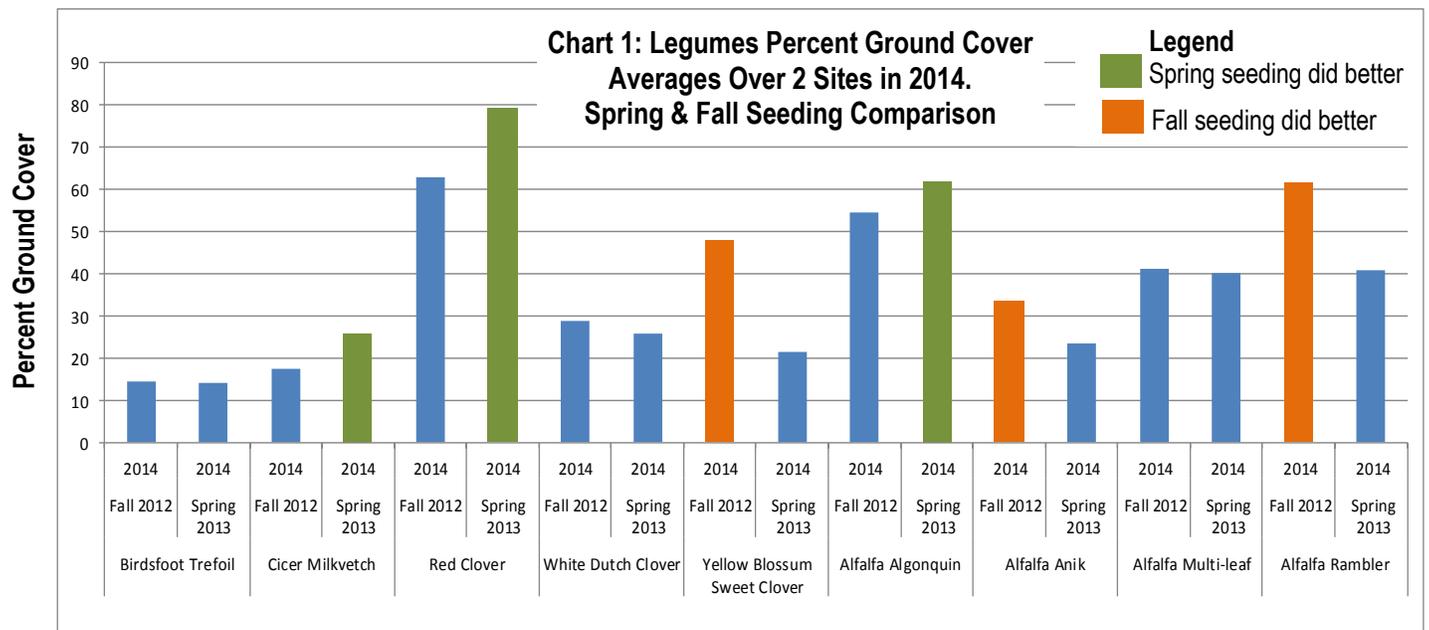
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Above photo is **cicer milkvetch seeded spring 2013**, photo taken **July 17, 2014**. Frame is 1/4 m².



## Most Grasses Responded Positively to Fall Seeding

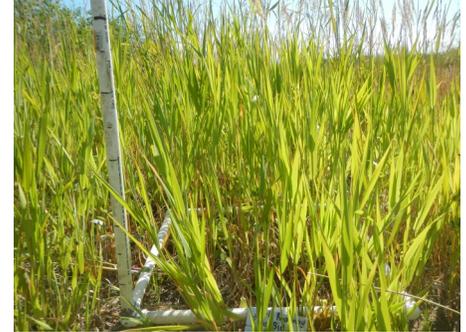
Fall seeding seemed to be the way to go with the grasses as you can see in Chart 2 below. Only with **reed canarygrass**, was there a significant advantage to spring seeding. Surprisingly grasses like **timothy** that were thought to be better suited to fall seeding showed no advantage. In contrast, **smooth bromegrass** (which had previously been thought to be the least likely to do well with a winter/fall seeding) seemed to respond well. Definitely some food for thought here!



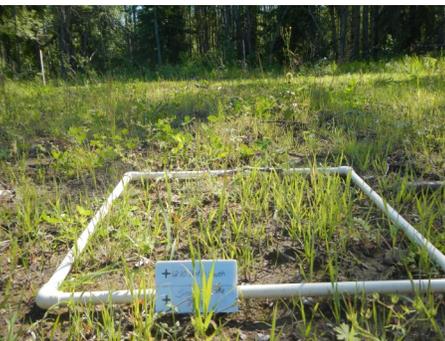
Above is **smooth bromegrass seeded fall of 2012**. Picture taken **July 31, 2013**. Frame is  $\frac{1}{4}$  m<sup>2</sup>.



Above is **smooth bromegrass seeded fall of 2012**. Picture taken **July 17, 2014**. Frame is  $\frac{1}{4}$  m<sup>2</sup>.



Above is **reed canarygrass seeded fall of 2012**. Picture taken **July 17, 2014**. Frame is  $\frac{1}{4}$  m<sup>2</sup>.



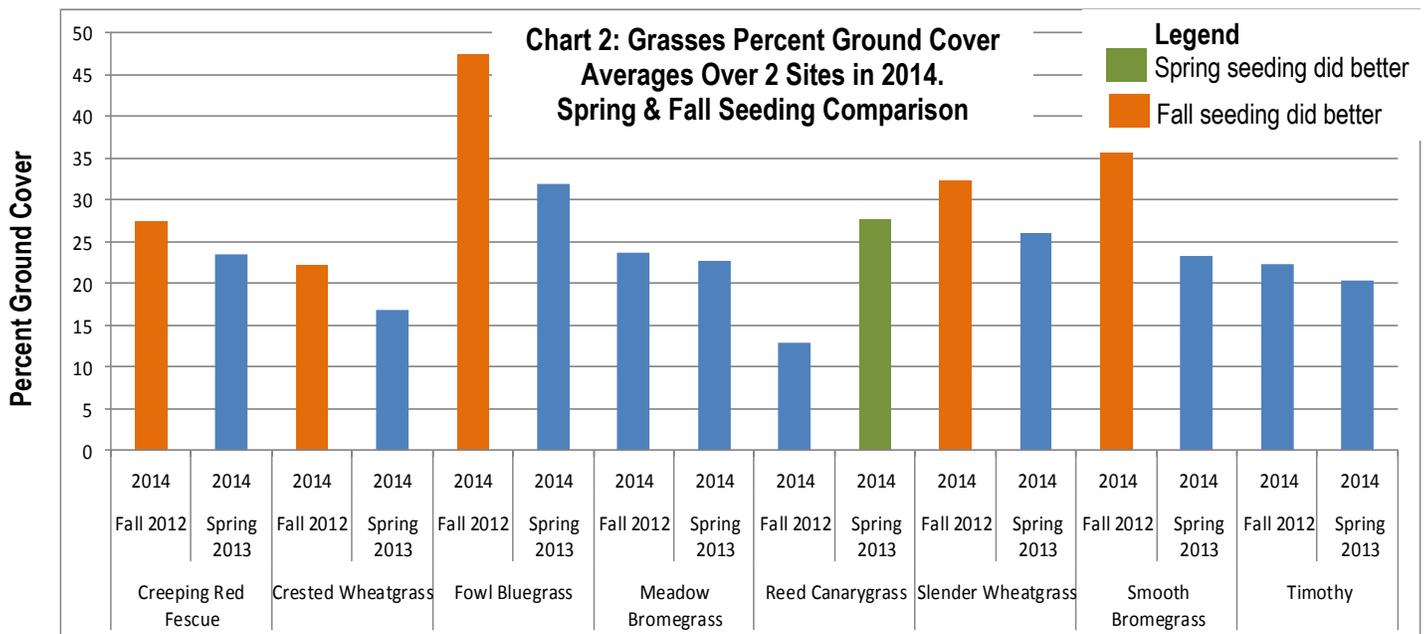
Above is **smooth bromegrass seeded spring of 2013**. Picture taken **July 31, 2013**. Frame is 1 ft<sup>2</sup>



Above is **smooth bromegrass seeded spring of 2013**. Picture taken **July 17, 2014**. Frame is  $\frac{1}{4}$  m<sup>2</sup>.



Above is **reed canarygrass seeded spring of 2013**. Picture taken **July 17, 2014**. Frame is  $\frac{1}{4}$  m<sup>2</sup>.



## Related Fact Sheets

#77 Emerging Re-vegetation Superstars

#75 Re-vegetation of Oil & Gas Disturbance

#74 Creeping Red Fescue and Reed Canarygrass

#73 Slender and Crested Wheatgrasses

#72 Alfalfa and Creamy Peavine

#71 Timothy and Hybrid Bromegrass

#70 Meadow and Smooth Bromegrass



This is what 80 seed per ft<sup>2</sup> looks like in dormant seeding.

## Where To Next?

- ⇒ Comparing timing of seeding throughout the growing season and fall for legumes and grasses.
- ⇒ Linking this to moisture and soil temperature.

These are a just a few of the unanswered questions that a future project could look at.

## Bridging Reveg Project & AB Ag Fall Seeding Recommendations

### Can you fall seed forages?

Seeding forages in the fall can be a viable option in successfully establishing a forage stand if proper timing and management is practiced. However, spring seeding is the preferred option as soil tillage creates an earlier and more uniform soil temperature throughout the field. This results in more uniform germination throughout the field and amongst the species that have been seeded. [Please note the spring seeding situations with Reveg Project do not involve tillage.](#)

**When should dormant seeding occur?** Late fall forages should be planted from October 15 until freeze-up when night temperatures are consistently below zero.

**Why is timing of seeding so important?** The soil temperature must be below 2 degrees Celsius so that the seed will not germinate. The soil is basically storing the dormant seeds until spring, at which time, the soil will warm up signaling the seed to germinate.

**What are the advantages of fall seeding?** This timely seeding is advantageous to areas susceptible to spring flooding or peaty areas that remain wet during the summer. This process will allow the seedlings to use good moisture from winter snow.

**Sources:** 1. Tina Stewart (nee Orom), Alberta Agriculture, 2015. [http://www1.agric.gov.ab.ca/\\$department/deptdocs.nsf/all/faq7329](http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/faq7329)  
2. Bill Wilson, PRFA Revegetation of Disturbed Areas by Oil & Gas Project, 2015.

**What are some other factors affecting the success of dormant seeding of forages?** Other practices that will successfully establish a healthy forage stand are: using quality seed, using proper seeding rates and depths, and managing for weeds. A firm seedbed will allow good seed to soil contact and result in good germination and emergence. Seeding into stubble will reduce the chance of seed movement from wind and water erosion. Because some of the seeds will die over the winter, increase your seeding rates by 20 to 30%.

**What risks are involved with dormant seeding?** Seeds will start to germinate as soil warms in the spring and they could be susceptible to damaging spring frosts. Grass crops are planted the most successfully with alfalfa having variable success and sweet clover not working at all. Sweet clover seed is scarified to improve germination allowing easy uptake of water causing it to die during winter. [Reveg project have had good success with fall seeding alfalfa and clover.](#)

**What happens if I seed too early?** If you seed before the soil temperatures are low enough, germination can begin. Then as decreasing winter temperatures take over, the seedlings will die and you will end up with a poor or no forage establishment the following spring.

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Canada

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*Agriculture and Agri-Food Canada, the BC Ministry of Agriculture and the Investment Agriculture Foundation of BC, are pleased to participate in the production of this publication. We are committed to working with our industry partners to address issues of importance to the agriculture and agri-food industry in British Columbia. Opinions expressed in this report are those of the Peace River Forage Association of BC and not necessarily those of the Investment Agriculture Foundation, the BC Ministry of Agriculture or Agriculture and Agri-Food Canada.*