

Date:  
April 2014

# How Important is Timing of Seeding?

## Contacts:

Bill Wilson  
(250) 782-2866  
Murray Clark  
(250) 219-0006  
Julie Robinson  
(250) 787-3241

## Comparing Timing of Seeding

In the oil & gas industry timing of seeding occurs 365 days a year. In nature there are four different times: spring, summer, dormant and frost seeding. Each time has associated advantages and disadvantages.



Fall seeded Anik Alfalfa on pipeline

## Spring Seeding (Re-veg Project)

Advantages	Disadvantages
<p>Favorable moisture conditions for seeds to germinate and emerge</p> <p>Provides adequate time for legumes to establish before winter as they require an adequate root system and sufficient nutrient reserves</p> <p>An optimum time to add fertilizer for newly emerging plants</p>	<p>Snow melt and saturated soils can delay entry into fields or create ruts</p> <p>Heavy weed pressures as they germinate early and have a short life cycle</p> <p>Cool soil temperatures can delay emergence</p>

## Summer Seeding (other situations)

**Timing:** August or early September.

Very risky time to seed as available moisture is variable and legumes need 5-6 weeks to establish before the onset of winter. If winter comes before forage plants adequately establish then there can be high instances of winterkill. This time of year has fewer weed pressures than spring seeding.

## Dormant Seeding (other situations)

**Timing:** Late fall just before the ground freezes.

Seed is broadcast or banded when soil temp is lower than 2° C to prevent germination. Seeding rate needs to increase 25-30% for risk of seed and seedling mortality when subject to frost. Seeds will be present when soil warms in the spring and moisture is plentiful.

## Fall (Frost) Seeding (Re-veg Project)

Advantages	Disadvantages
<p>Seeds are incorporated into the surface layer via the freeze-thaw cycle</p> <p>More moisture is present when seeds germinate than when equipment can get into the field</p> <p>Germinated seeds are present early to compete with undesirable species</p>	<p>Germinated seeds are susceptible to frost</p> <p>Legumes are usually more successful than grasses as their seeds have a hard, smooth seed coat that works into the soil well</p> <p>Seeds can be subject to depredation</p>

Published by  
P.R.F.A. of BC:

For more Forage Facts  
visit our website:

[www.peaceforage.bc.ca](http://www.peaceforage.bc.ca)

Peace River Forage Association  
of British Columbia



*“Fowl bluegrass established poorly in our spring seeded research plots but exceptionally well in the fall seeded plots.”*  
 Carmen Schneider,  
 Summer Technician



Spring seeded fowl bluegrass on pipeline



Fall seeded fowl bluegrass on pipeline

### Fall vs Spring Comparison

The re-vegetation project aims to demonstrate that timing of seeding is an important consideration when it comes to establishing forage stands. A demonstration of spring vs fall seeding was done on a pipeline to

compare emergence and plant survival. Fall seeding occurred in 2012 and spring seeding in 2013. This site is located near a natural spring and tree line which provides a moist growing environment.

	Emergence		Plant Survival		Table Legend
	Fall	Spring	Fall	Spring	
<b>Timothy</b>	Good	Good	Fair	Fair	Emergence (plants/ft <sup>2</sup> ): 0-20 = poor 20-40 = fair 40-60 = good 60-80 = excellent  Survival (% plants covering the ground): 0-15% = poor 15-30% = fair 30-45% = good 45-60% = excellent
<b>Smooth bromegrass</b>	Fair	Fair	Fair	Poor	
<b>Meadow bromegrass</b>	Fair	Good	Fair	Fair	
<b>Crested wheatgrass</b>	Fair	Excellent	Poor	Poor	
<b>Slender wheatgrass</b>	Good	Good	Fair	Fair	
<b>Fowl bluegrass</b>	Excellent	Fair	Good	Poor	
<b>Creeping red fescue</b>	Good	Good	Fair	Poor	
<b>Anik alfalfa</b>	Poor	Fair	Poor	Poor	
<b>Birdsfoot trefoil</b>	Poor	Poor	Fair	Fair	
<b>White Dutch clover</b>	Poor	Good	Good	Good	

**Note & Reference**

In the re-veg project the term fall seeding is used for simplicity but the type of seeding being done is frost seeding.

Timing of seeding definitions are referenced from the *Sod Seeding* publication written by Orla Nazarko in June 2008.

### Seeding Summary

Each timing of seeding has its own pros and cons. Spring seeding provides a lower level of risk, more opportunities to incorporate seed into the soil and adding fertilizer. As seen in the re-vegetation demo most forage species emerged better in the spring but

plant survival was higher in the fall seeded plots. Fall seeding allows forage seeds to take advantage of spring moisture and provide more competition to weed species. Fowl bluegrass performed well at this site in terms of both emergence and plant survival.



Agriculture and Agri-Food Canada

Agriculture et Agroalimentaire Canada



Investment Agriculture Foundation of British Columbia

*Funding for this project has been provided by: Agriculture and Agri-Food Canada through the Canadian Agricultural Adaptation Program (CAAP). In British Columbia, this program is delivered by the Investment Agriculture Foundation of BC.*

**Compiled by:** Bill Wilson & Talon Johnson in January 2014.

**With Contributions from:** Erwin Rehl, Julie Robinson, Sandra Burton.

**Funding Partners of the Re-vegetation of Disturbed Areas by Oil & Gas Activities Project:**  
 Peace Region Forage Seed Association, Encana Corporation, Shell Canada