PEACE COUNTRY BEEF & FORAGE ASSOCIATION

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Forage Focus

Surviving Winterkill! Alfalfa

This winter has not been "typical" for the Peace region. It has been warmer than usual and from what everyone is telling me, there is a lot less snow than what producers are used to. For some aspects of grazing and feeding cattle, this is a welcomed change, but what does it mean for the forages themselves? Freezing rain and minimal snow cover has made survivability a little more challenging, especially for that of alfalfa. Winterkill looks to be an issue for producers across the Peace this coming spring. The following points will hopefully help to address issues relating to the risk of winterkill, assessing plants, pastures and any possible rejuvenation requirements.

Winterkill

Winterkill can have quite an effect on alfalfa growth. It can result in lower quality feed, shortages of feed, disruption of the grazing rotation and additional costs related to reseeding lost stands. The two main causes of winterkill that can be attributed to this winter season include: 1) smothering due to ice sheet formation and 2) heaving caused by freezing and thawing. Some forage species are obviously hardier than others. Alfalfa tends to be of most concern in these conditions. Other legumes such as birdsfoot trefoil, red clover, wild white clover and alsike tend to tolerate adverse winter conditions better. Grasses such as timothy, reed canarygrass, bluegrass and bromegrass rarely experience winterkill. Orchard grass and ryegrass are more likely to be killed in icy or low temperature conditions.

Risk of Winterkill

Stand Age. As the age of the alfalfa stand increases, the ability of it to survive through the winter declines. Stands that are 3-4 years old have a much greater risk of winterkill and suffer greater winter injury than those that are 1-2 years of age.

Variety. Alfalfa varieties differ in their winter hardiness. Preliminary observations at the Fairview and High Prairie forage plots have seen that ***Anik*** tends to recover faster after the winter season.

Soil Potassium Level. A low soil potassium level will reduce the ability for alfalfa roots to store carbohydrates which purpose is to help develop a state of winter hardiness. This is particularly true of loam and sandy loam soils compared to clay soils, which generally have a much better time supplying adequate potassium.

Soil drainage. If there is poor drainage and the plant is subject to high soil moisture conditions, there is a good chance the plant will not survive. This in turn makes the plant much more susceptible to frost heaving and subsequent damage. Excess surface moisture can lead to the formation of ice sheets which smothers the plant and reduces soil temperature rapidly. A fall soil moisture content of below 50% of the field capacity is favorable to ensuring alfalfa winter survival.

Harvest management, number of cuts per season and the fall rest period are also factors that contribute to the risk level of alfalfa winterkill.

As you can see there are a number of controllable and uncontrollable factors that contribute to winterkill. Controllable factors include: management—seed variety, soil fertility and harvest time. Uncontrollable factors include: snow cover, temperature and temperature fluctuations. Management can greatly offset the risk of alfalfa winter injury. The following table outlines a method that can help you to gauge the risk of winterkill on your operation. You can enter the scores for the answers which best describe the field situation and the management tools being implemented on your farm. This will help to **roughly** assess the risk of winter damage to alfalfa.

Table 1. Risk of Alfalfa Winter Injury

	Points	Your Farm (fill in the blanks)
Years Harvested for Forage		
1 year 2 year 3 year	1 2 3	
Disease Resistance (R=resistance, HR=highly resistant)		
R or HR to all diseases R or HR to both vehicillium and bacterial wilt R or HR only to bacterial wilt	2 3 4	
Potassium Soil Test		
High (above 150) Medium (80-150) Low (less than 80)	1 2 3	
Soil Drainage		
Excellent (eg. sandy loam) Good Moderate Fair (clay loam-no tile)	1 2 4 6	
Cutting Schedule		
1 cut, last cut prior to critical fall harvest period 2 cuts, last cut prior to this period 2 cuts, last cut during this period	1 1 2	
GRAND TOTAL		

Source: Adapted from Ontario Ministry of Agriculture, Food & Rural Affairs

7 points or less = low risk
8-12 points = medium risk
13-16 points = high risk
17 points or more = very high risk

REMINDER:
Renew your PCBFA membership for 2012 today for only $25.

2011 memberships are coming to end March 31!

Please mail payment to:
Box 3000, Fairview, AB T0H 1L0

Assessing Winter Survival

As the snow melts and you have an opportunity to walk your fields, assessing them for potential problems can help you to plan your grazing strategies for the upcoming year. The first question to answer is "was there any winter injury to my fields containing alfalfa?" Some of the following tips can help you in answering this.

Slow Green Up. Once dormancy breaks, the field is generally slow to start growing. This is due to the fact that the first few inches of growth are from the carbohydrate root reserves of the plant. In the event there is winter damage, the root system will be working inefficiently and/or ineffectively.

Uniform Growth. Have a look over the plants and asses whether there is uniform growth from all sides of the plant. If there is a possibility of part of the root being injured or killed, the plant will exhibit uneven growth.

Uneven New Growth. It is a good indicator that the crown has experienced some damage if the new growth is uneven and the new buds of the plant have had to form in the spring.

Roots. The last and best way to determine the extent of any possible winter damage is to examine the roots. In order to determine the health of the crown and roots, it is advisable to dig up several plants. Healthy crowns are large and symmetrical and have many shoots. Cut a root lengthwise. Roots that are healthy will be white or creamy in color on the inside. They are also firm and resistant to peeling when scratched with a thumb nail. Plants that are dying will have a discolored crown and the root will be spongy in texture. Also check for bud or new shoot vigor. Plants that have been subjected to heaving, which results in a broken taproot, may green up in the beginning of the season, but die later on. Plants that have experienced slight heaving, may still survive, but the quality and yield are sure to be reduced over the long term.

Yield Estimates

Future yield potential can be determined by conducting a plant count. This is done by determining the number of plants or stems per square meter. Identifying the health of the crown and roots is an extremely important step. Stem counts are more accurate than plant counts, but in the spring, it may only be possible to count the number of crowns. Be prepared to replace a stand if there are less than 43 plants/m^2 (4 plants/ft^2). The following table gives recommendations on desirable alfalfa plant count numbers.

Table 2. Desirable Alfalfa Stand Plant Count

	Plant Count	
	Plants per meter^2	**Plants per foot^2**
New Seeding	215	20 +
Year 1	129-215	12-20
Year 2	86-129	8-12
Year 3 or older	54	5

Source: Ontario Ministry of Agriculture, Food & Rural Affairs

EVENTS

Water Workshop
Mar 13 @ Fairview—Fairview Campus 144 Admin Building (lunch included)
10:30am-3:30pm
- dugout design & construction
- water quality troubleshooting and treatment options
- dugout biology
- dugout aeration
- in house treatment of surface water
- PLUS! life size teaching cow and calf to be looked at during lunch
$10 members; $15 non
RSVP by Mar 9 to Morgan @ 835.6799

Growing Forward Energy Efficiency Program Info Session
@ Spirit River
Details TBA (late Mar)

Social Media/EFP/ Age Verification Workshops
@ Valleyview, Grande Prairie & Fairview
Details TBA (late Apr)

Another method to determine survivability of an alfalfa stand is to use density measurements. When alfalfa is 15 cm (6 in) in height, density can be measured using stems/m^2 (stems/ft^2). Stem density of 590 stems/m^2 (55 stems/ft^2) indicates good yield potential. There may be some yield loss when stem counts are calculated to be 431-539 stems/m^2 (40-50 stems/ft^2). Replacing the stand should be considered if there are less than 430 stems/m^2 (40 stems/ft^2) and the crown and root health are poor. Other considerations to keep in mind when deciding whether or not to replace a stand include determining what are the forage inventories and requirements, alternative forage options, how much grass is left in the stand, rotational requirements and weed pressure.

A One Time Only & Must Attend Workshop!!

JOEL SALATIN

A third generation alternative farmer from Virginia's Shenandoah Valley. His farm Polyface Inc services his local community with salad bar beef, pastured poultry, eggmobile eggs, pigaerator pork, forage-based rabbits, pastured turkey and forestry products.

Topics Include:

The Sheer Ecstasy of Being a Lunatic Farmer *Polyface Inc vs. today's farm*

Relationship Marketing *Empowering marketers to explore different marketing venues*

Local Foods to the Rescue *Building an aromatic and aesthetic local foods production model*

Salad Bar Beef *How-to talk on pasture finished cattle*

Forgiveness Farming *Building resiliency into your farm while experiencing vulnerabilities*

Folks This Ain't Normal *Using technology to re-establish historical normalcy*

Pastured Poultry Profits *Pastured based poultry enterprise (centerpiece at Polyface Farm)*

Friday March 23
Dunvegan Motor Inn, Fairivew
10am—5pm (9:30 registration, lunch included)

$35 members, $55 farm unit
$50 non-members, $75 farm unit

March finds Jaime leaving us to have a baby! We wish her and Chris all the best and look forward to seeing her out and about with the bambino at PCBFA events!!

Morgan will be taking over as Manager, continuing out of the Fairview office. Until an Extension Coordinator is hired for the High Prairie office, she will be in that office every Monday 9am-5pm, when schedules permit, to ensure services continue for area producers. So don't be shy and feel free to swing by for a visit!

Join us on our Facebook Group!
http://www.facebook.com/#!/groups/pcbfa/

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