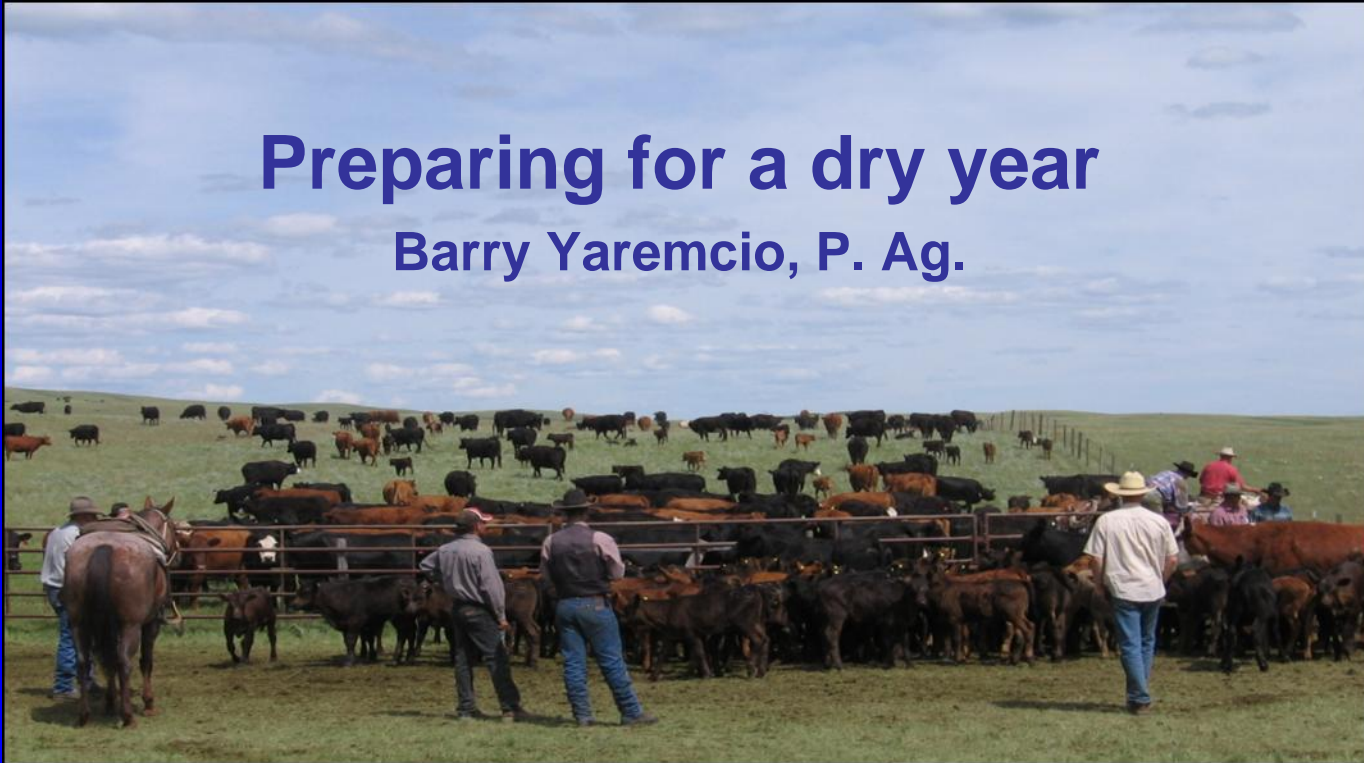


Forage and Livestock Management

Preparing for a dry year

Barry Yaremcio, P. Ag.



Outline

- Today's Agricultural Challenges
- Grazing and Forage Plans
 - Estimating Requirements
 - Grasshopper Situation
 - Stand Management & Alternatives
- Livestock Management
 - Spring & Summer
 - Fall & Next Winter

2010 Context: Challenges faced by agriculture

- Weak North American demand
- A strong Canadian dollar
- Slow foreign market uptake
- Unknown feed grain prices



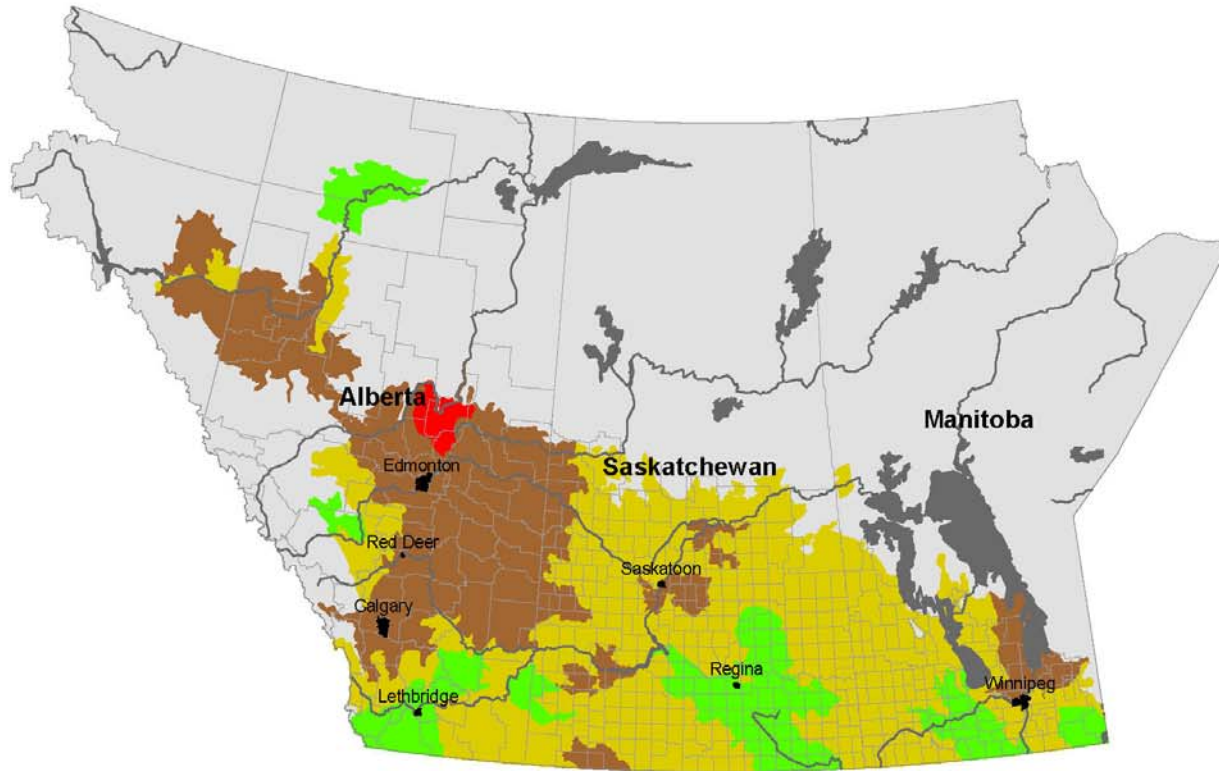
Building Realistic Expectations

- Economics have been a challenge for cow-calf.
- North American cow numbers continue to decline.
 - Most herds have cut back from last years numbers due to high feed prices and lack of forage supply.
- Prices are expected to remain volatile for all types of livestock.
- Moisture reserves are low in many parts of Alberta
 - forage production capacity may be limited for 2010.



Forage Supply

November 1, 2009



Forage Supply

- Severe forage shortages occurring
- Forage shortages occurring
- Forage shortages anticipated
- No forage shortages anticipated
- Insufficient data/
non-agricultural areas

The map may not be accurate for all regions due to data availability and localized conditions.

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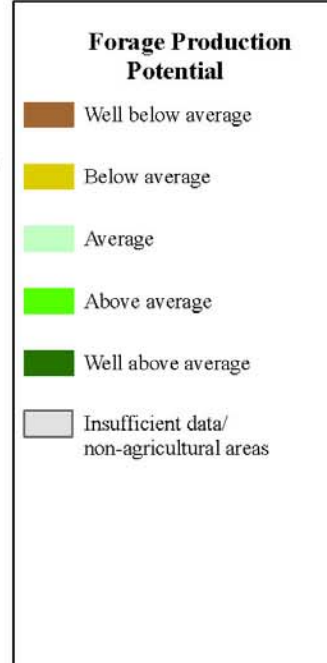
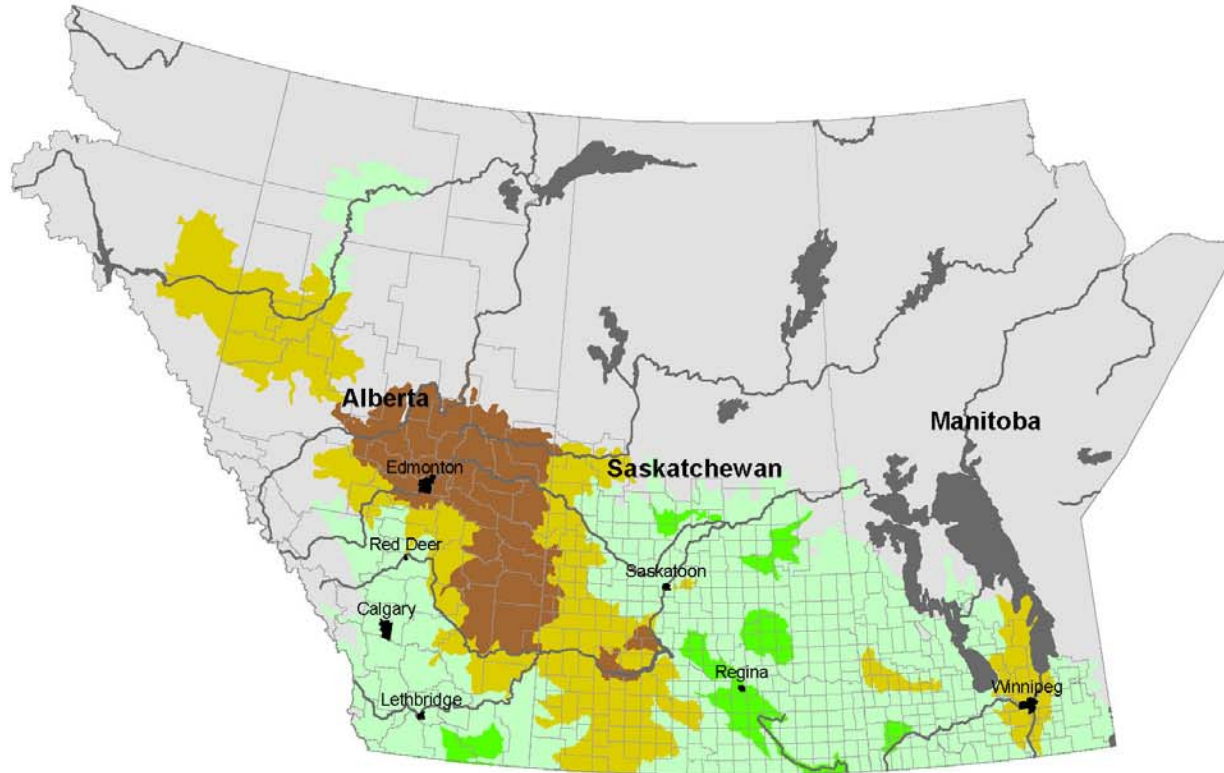
Prepared by Agriculture and Agri-Food Canada's National Agroclimate Information Service (NAIS). Data provided through a network of producers, Agri-Environment Services Branch (AESB) staff and Agribusiness representatives across the Prairies

Created: 11/05/09
www.agr.gc.ca/drought



Forage Production Potential Outlook for Spring 2010

November 1, 2009



The map may not be accurate for all regions due to data availability and localized conditions.

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Prepared by Agriculture and Agri-Food Canada's National Agroclimate Information Service (NAIS). Data provided through a network of producers, Agri-Environment Services Branch (AESB) staff and Agribusiness representatives across the Prairies

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Freedom To Create. Spirit To Achieve.

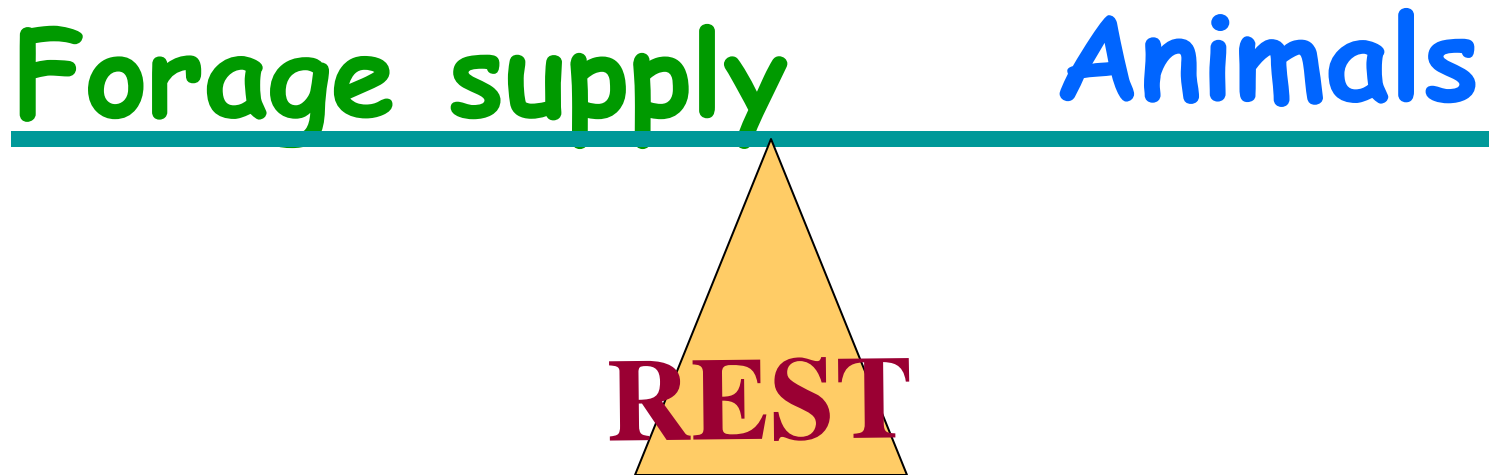
Grazing & Forage Plans



Cowboy math

- What do cows consume?
-
- How to measure/estimate
 - ½ of a small square bale / day
- Waste due to trampling and defecation loss
- Productivity loss of pasture 10 – 20% due to last year's over grazing
- Evaluate options

Grazing Plan Basics

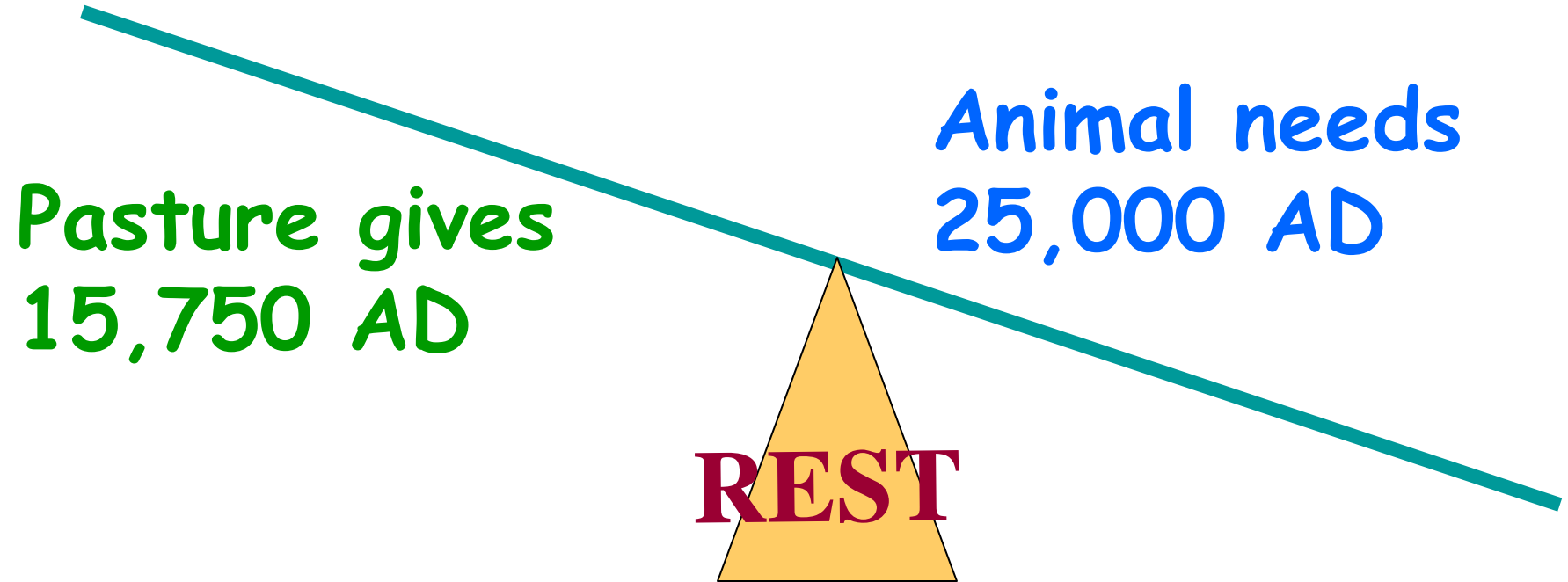


- Overgrazing reduces pasture productivity in long term

Cathie Erichsen-Arychuk, Drought Team 2003.



Carrying capacity



Overgrazing reduces pasture productivity in long term

Cathie Erichsen-Arychuk, Drought Team 2003.

Drought can have long term effects on pasture

Impact depends on:

- Health of stand before drought
- Grazing management during drought
- Growing conditions after drought



Cathie Erichsen-Arychuk, Drought Team. 2003.

Impact of grazing and recovery on roots



Source: Johnson, Canadian Journal of Plant Science, v41 p 615-622

Snow- Water- Soil- Plant

Sandy soil	1 foot wet to field capacity	1 inch of water
(Medium) Loam clay soil	1 foot wet to field capacity	1 ½ inches
Clay soil	1 foot wet to field capacity	2 inches

10 inches of snow = 1 inch of water

Source: J. S. Henry, Retired Professor, University of Saskatchewan, Grainews, January 11, 2010 pg. 26-27.



Alberta

Freedom To Create. Spirit To Achieve.



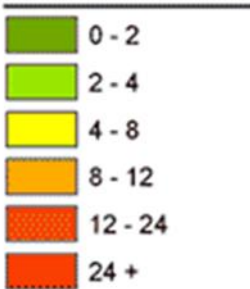
Grasshopper Forecast

Government
of Alberta

Alberta Grasshopper Potential

Grasshopper Forecast for 2010

Grasshoppers in August, 2009 (adults per sq.m.)

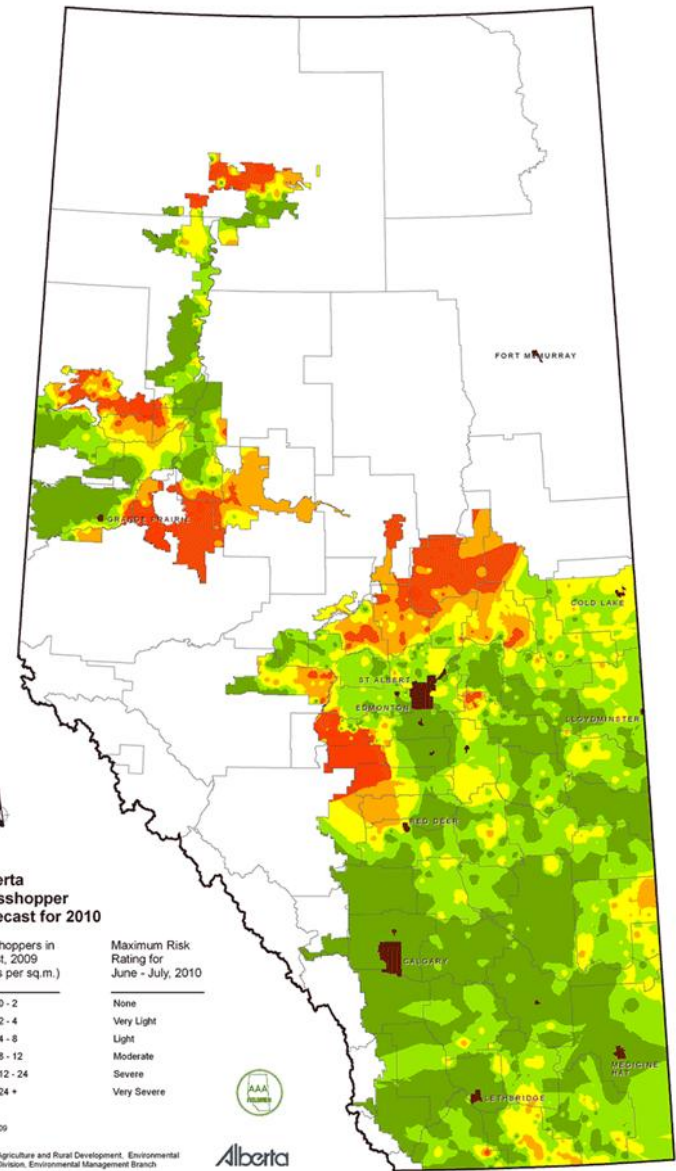


Maximum Risk Rating for June - July, 2010



December 2009

Compiled by Agriculture and Rural Development, Environmental Stewardship Division, Environmental Management Branch





Grasshopper Management

- 10 grasshoppers/m² consume 16-60% of available forage
- Vigorously growing plants better able to withstand grasshopper damage
 - Seed early
 - Fertilize if possible
- Spray ditches to prevent movement into field and have buffer strips at edge of field



Freedom To Create. Spirit To Achieve.

Stand Management & Alternatives

Stand Productivity

- Need to make management decisions that increase plant health and vigor
- Vigorous stands have a shorter recovery time
 - Healthier root system
- Younger stands recover faster than older stands
 - More vigorous plants



Fertility

- Optimal fertility improves vigor and stand recovery
- Improves production if nutrients are limiting
- Benefits dependent on moisture conditions
- Consider N, P, K and S
 - For both root and shoot growth
- Know what's there
 - sample, work with your local fertilizer dealer



When to Start Grazing

- Spring growth could be delayed by 4 weeks or more in 2010
- Wait until plants have at least 3 full leaves prior to turning animals onto pasture
- Delaying grazing by 1 day in the spring adds 3 grazing days in the fall



Perennial Forages

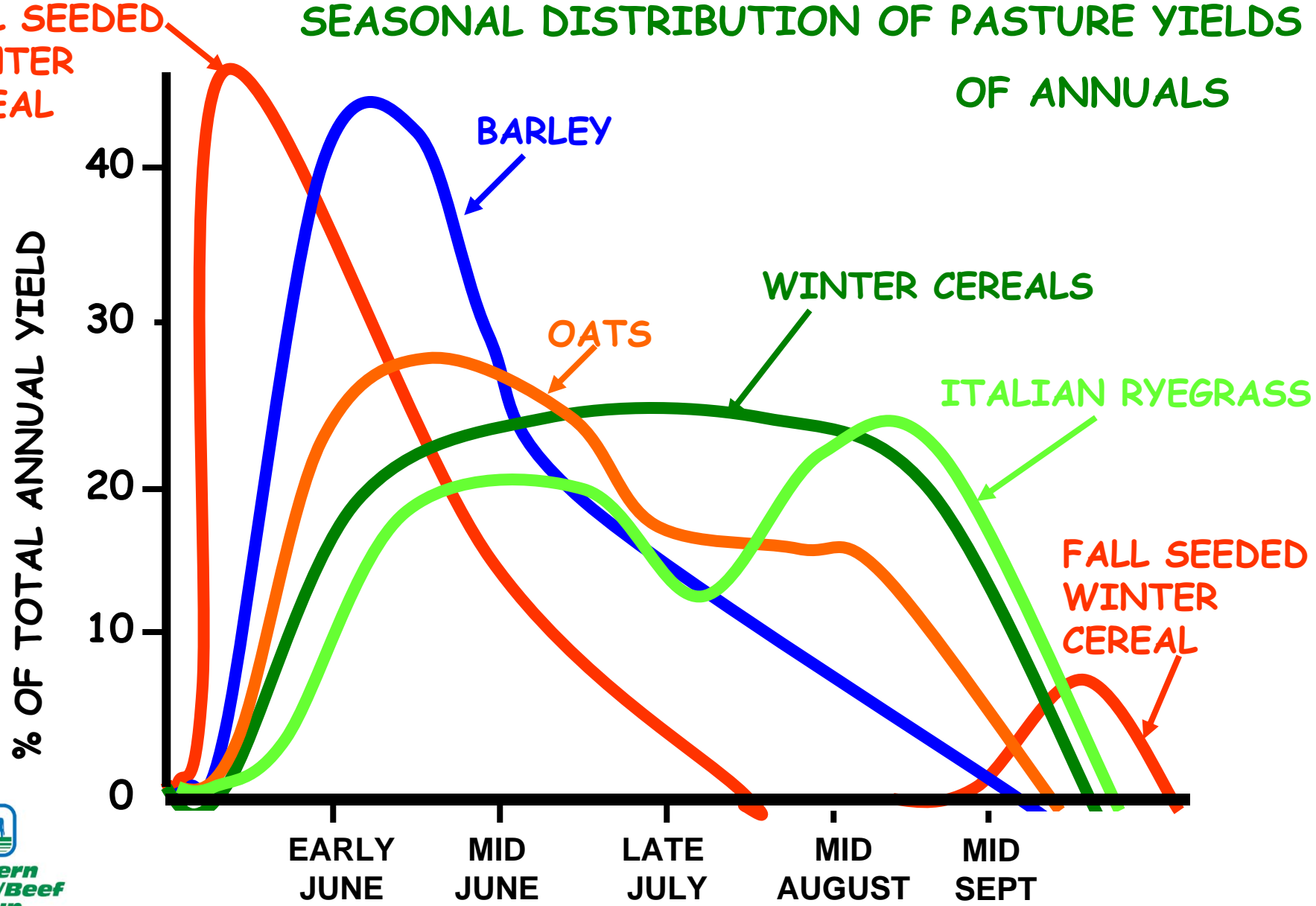
- As much as 80% of perennial forage production occurs by July 1
 - Heavily dependent on spring moisture
- Deep rooted plants handle and recover from dry conditions better
- Thatch shades the soil and helps increase water retention and infiltration along with reducing evaporation losses
- No cut, no grazing period in fall.



Annual Forages

- Cereals can be seeded for use as pasture, green feed, silage or grain
 - Spring cereal alone, or spring/winter mix
 - Seed early to capture spring moisture
 - Use high grain yield varieties for forage production
 - Will be ready to graze in 6 to 8 weeks
- Allows perennial pastures chance to rest longer
 - Improves yield of perennial pasture

SEASONAL DISTRIBUTION OF PASTURE YIELDS OF ANNUALS



Western Forage/Beef Group



Strategies to increase forage availability:

- Arrange flexible rent of pastures
- Check community pasture availability
- Fertilize higher production pastures
- Feed stored forages longer into spring
- Graze all crop land before seeding
- Grow spring/winter annual mix
- Pick pasture to sacrifice
- Each time you feel stressed-sell animals
- Plan early with neighbors for crop land residual use



Check community pasture availability

- Community pasture contacts by region
 - SE- Medicine Hat- 403-529-3677,
 - SW- Drayton Valley- 780-542-6616,
 - NE- St. Paul- 780-645-6336,
 - NW- Fairview- 780-835-7525



Millets

- Foxtail (German or Siberian) or Proso millet
 - Proso has a 40 to 60 day growing season
 - Good for grazing or swath grazing
 - Proso millet more competitive than other millets. Lowest water requirement of any cereal crop
 - German millet has highest yield
 - Millets hard to dry, No re-growth after cutting
- August rain needed to help increase yield



Corn

- More tolerant to heat and moisture stress than other cereal crops
- Can be cut for silage or used for grazing
- 50% of yield is from the cob – maturity?
- Higher cost for seed than cereal crops
 - TUA?
- Higher fertilizer requirements to get crop yields

Livestock Management : Spring & Summer



Salt and Water on Pasture

- Animals drinking out of a water system rather than dugout or stream
 - May increase calf gain by 20 pounds
- Using a fortified trace mineral salt year round
 - May increase calf gain by 20 pounds
- Improved cow reproductive performance and overall health

Matching forage supplies to needs

Feed to Need

Matching Your Forage Supplies to Needs

Print

This calculator is designed to estimate changes required in the number of head fed over the winter to stay within available forage supplies.

Amounts required are based upon feeding a predominantly forage-based diet. A daily Dry Matter (DM) intake of 2.5% of body weight, using good quality forage, is a reasonable target. If higher levels of concentrate are substituted into the ration, forage DM necessary can be reduced to as much as 1.5% of body weight... but higher levels of management will be necessary!

Ensure the ration(s) you anticipate feeding are properly balanced before using this calculator.

Daily DM Intake at: 2.50 % of Body Weight

Estimated Feeding Season: 200 days

Current Head On-Hand:

Cattle Type	Head	Avg. Weight	Lbs. DM/Head/day	Tons Total DM Req'd
Bred Heifers	250	1400	35	875.0
Bred Heifers	50	1100	28	140.0
Bulls	10	2200	55	55.0
R. Heifer Calves	65	750	19	123.5
				0

Total Tons of Dry Matter Required -> 1193.5

Alternate Scenario:

Cattle Type	Head	Avg. Weight	Lbs. DM/Head/day	Tons Total DM Req'd
Bred Cows	200	1400	35	700.0
Bred Heifers	50	1100	28	140.0
Bulls	5	2200	55	27.5
				0
				0

Total Tons of Dry Matter Required -> 867.5

Forages Available:

Forage Type	Number	Unit Weight	Percent Moisture	Tons DM Available
Hay (bales)	200.0	1400.0	12.0%	123.2
Greenfeed (bales)	400.0	1500.0	15.0%	255.0
Barley Silage (tons)	1500.0	2000.0	65.0%	525.0
Barley Straw (bales)	50.0	900.0	15.0%	19.1
				0.0
				0.0

Total Tons of Feed (DM) Available -> 922.3

Projected Forage Surplus (Deficit)

	DM Tons
Current Head On-Hand ->	-271.2
Alternate Scenario ->	54.8

9. "Print" Button

4. Daily DM Intake - % of Body Weight

1. Estimated Feeding Season - days

3. Current Head on Hand

5. Forage DM Req'd - Current Scenario

7. Alternate Feeding Scenario

2. Detail of Forage Supplies - on hand & anticipated

6. Forage Surplus (Deficit) - DM tons - Current Situation

8. Projected Forage Surplus (Deficit) - DM tons - Alternate Scenario

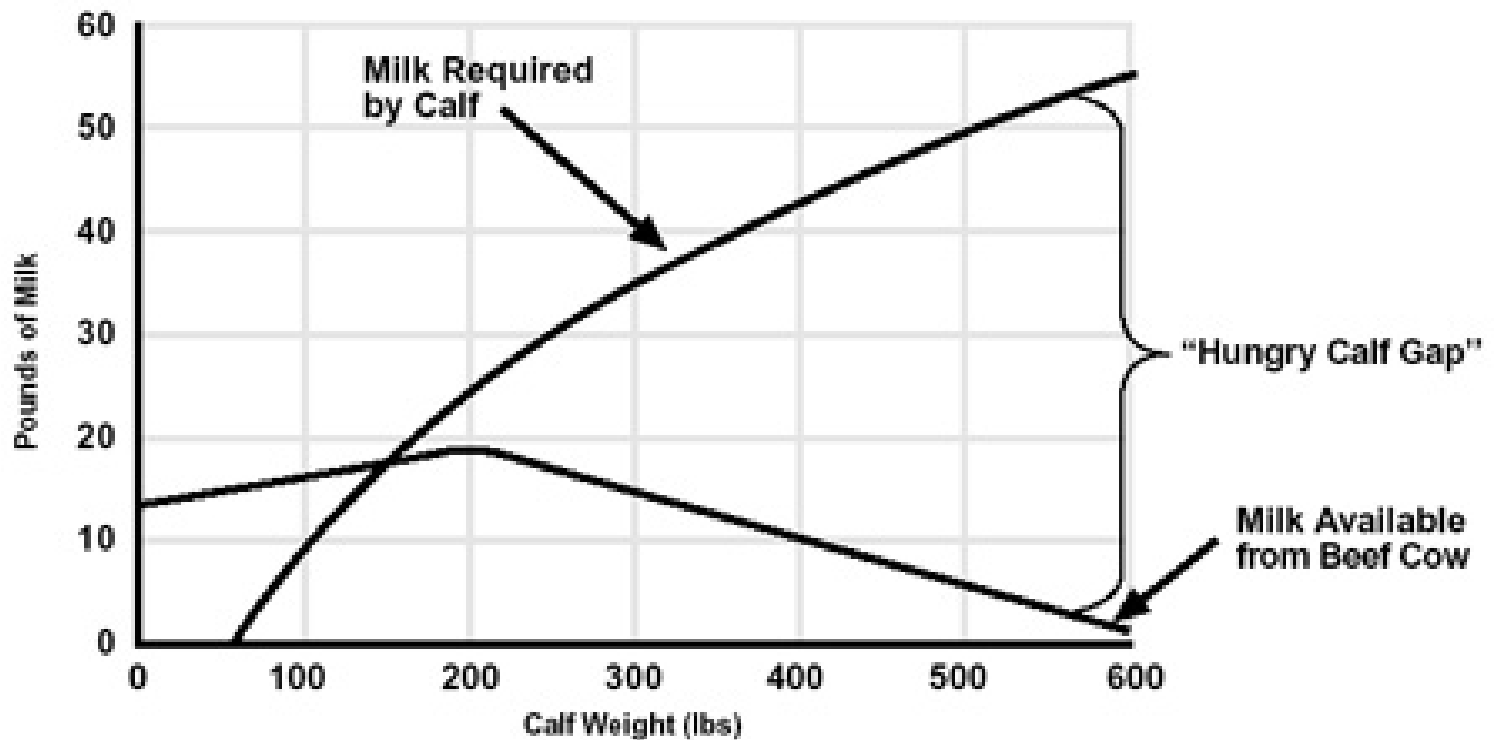
Reducing Forage Demand: Creep feeding calves

- Calf rumen
 - full function at 120 days of age.
 - Can handle grains at 65 – 70 days.
 - Grain helps the rumen to develop faster
- High energy, high protein ration required
 - Improves gain and marbling score
- Reduces sickness by 90% when entering feedlot



When to creep feed

Figure 2. Milk yield of a typical beef cow vs nutrient requirements of a nursing calf.



Possible Creep Rations

- Meet protein requirements of the calf.
 - 400 lb calf – 18%
 - 600 lb calf – 16%
- Possible grain combinations
 - 40% barley, 40% oats, 20% DDG's
 - 30% barley, 30% oats, 40% peas
 - 30% barley, 30% oats, 40% Barley malt sprouts
- Work with your local feed supplier and nutritionist

Why wean early:

- Forage quality or quantity in short supply
- Labour, logistics and facilities
- Time to manage weaning process
- Impaired cow or calf performance





Moving cattle to feed

- Animal care agreement
- Lease agreements



Culling cows

- Pregnancy check to sell open animals
 - Open cows consume 75% of the feed of a pregnant cow / year
- Structural soundness
- Temperament
- Age and age related problems
 - Udder, feet, teeth,
- % calf weight weaned / weight of cow

Livestock Management : Fall & Next Winter



Optimize winter feed use

Alternate Feed Supplies/Extenders

- Straw or chaff rations
 - need protein and calcium supplementation
- Dried Distillers grains
- Dried distillers grains with solubles
- Barley malt sprout pellets
- Wheat midds
- Corn gluten feed



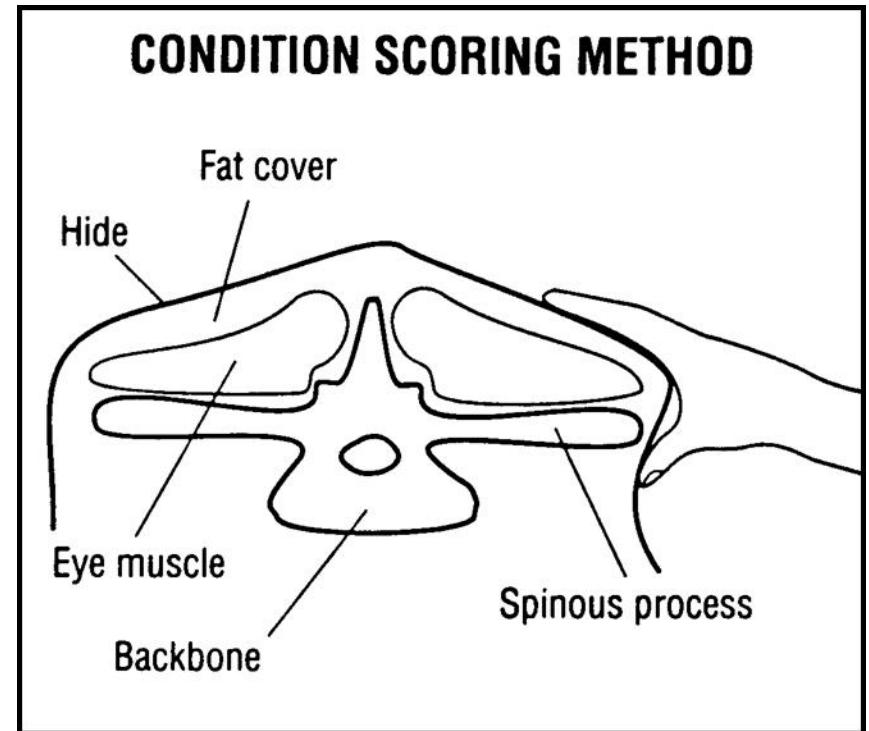


Swath grazing

- Half the cost of traditional feeding systems
- Cereals or millets can be used.
- Stage of plant development critical to maintain quality and reduce waste.
 - Limit feeding - using electric fence
- Yellow feed (glyphosate applied) to allow later cutting – prevent weather damage
- Include some winter annuals to increase yield after swathing

Body Condition Score

- BCS 3 going into calving
- 1 BCS change is a loss or gain of 100 lbs of fat
- 1 pound of fat provides enough energy to produce 7 pounds of milk





Effect of Decreased BCS on Reproductive Efficiency

<u>YEAR</u>	<u>1964-5</u>	<u>65-6</u>	<u>66-7</u>	<u>67-8</u>
WEIGHT CHANGE (lbs)	-125	+9	-24	-44
% CALF CROP THAT YEAR	80	90	89	84
% CALF CROP NEXT YEAR	65	93	70	88

Berg and McElroy University of Alberta.

More information:

References handout sheet available at the back

Ag-Info Centre 310-3276 (farm)

AFSC 1-888-786-7475

Ropin'the Web www.agric.gov.ab.ca