Cow herd management and costs

Dr. John Popp
Farm Production Extension - Beef
Manitoba Agriculture, Food and Rural Initiatives

Cost of production - $/lb calf weaned

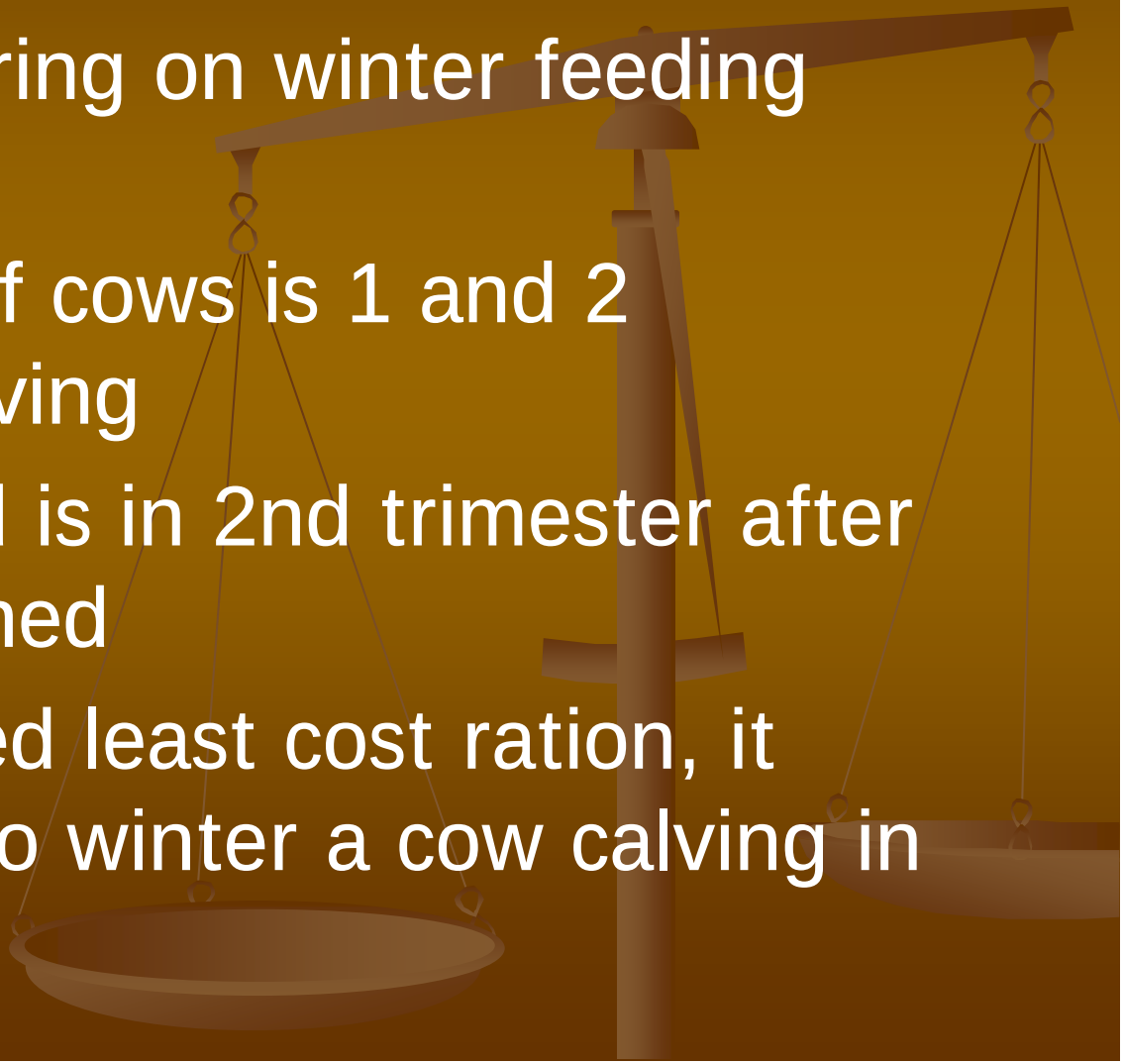
- Calving season
- Feed inputs
- Ration balancing
- Cow size
- Cow condition
- Records
- Pastures / Grazing season
- Supplements / Implants
- Health management
- LABOR and MANAGEMENT input

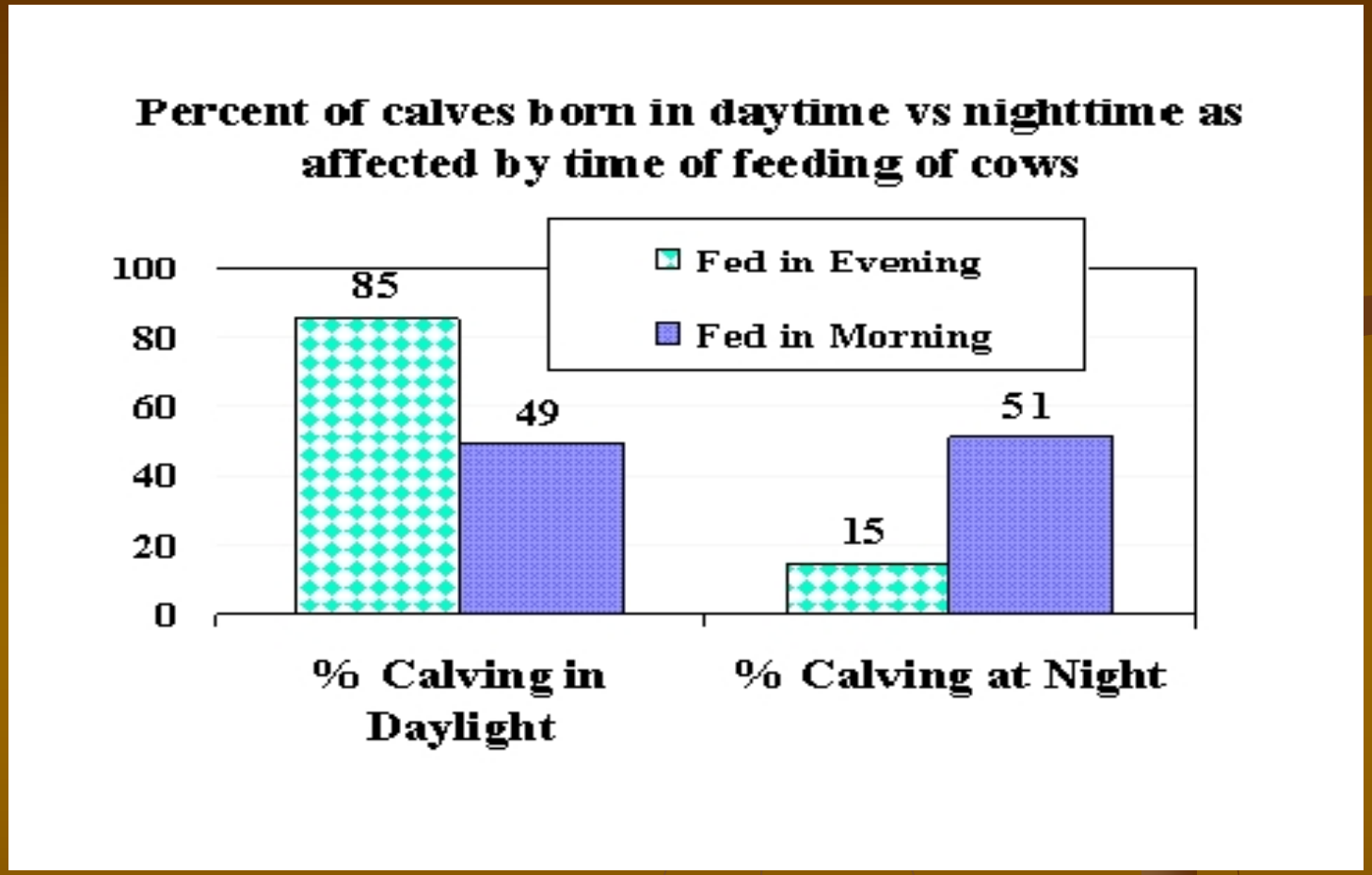
Price premiums - Reputation selling

- Production practices
  - castration / dehorning / condition / health
- Uniformity / Consistency / Predictability / Performance
- Muscle / Conformation / Soundness / Hair
- Calving season length
- Breeding programs/strategies/AI
- Breeding season length
- Records
- Maternal vs. Terminal Sires

Calving season

- Stage of production of cows has substantial bearing on winter feeding costs
- Peak demand of cows is 1 and 2 months postcalving
- Lowest demand is in 2nd trimester after calves are weaned
- Using a balanced least cost ration, it costs $35 less to winter a cow calving in May vs. March



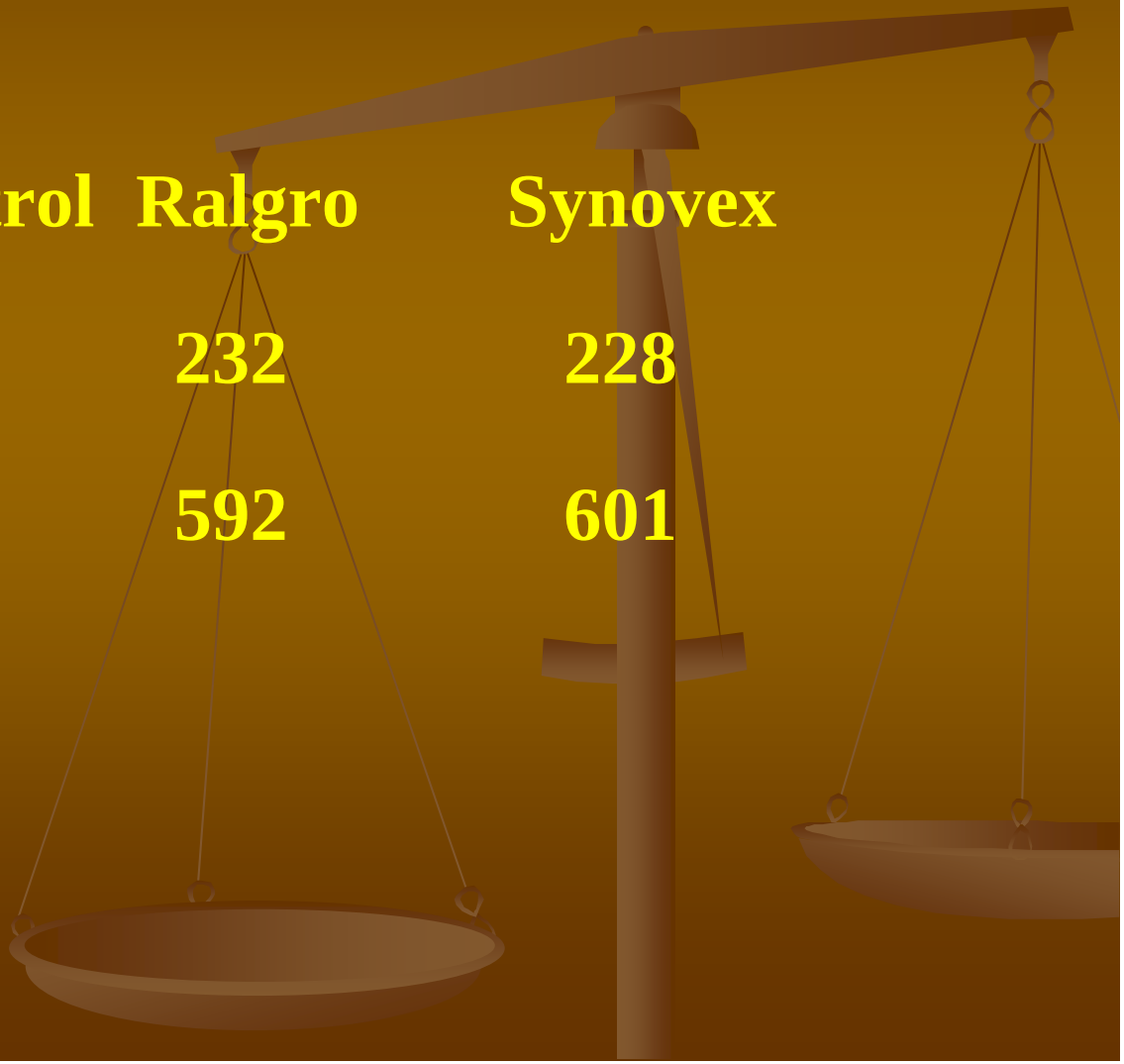


A study from Iowa utilizing 1300 cows

Strategy - if too many to feed at dusk..feed heifers late

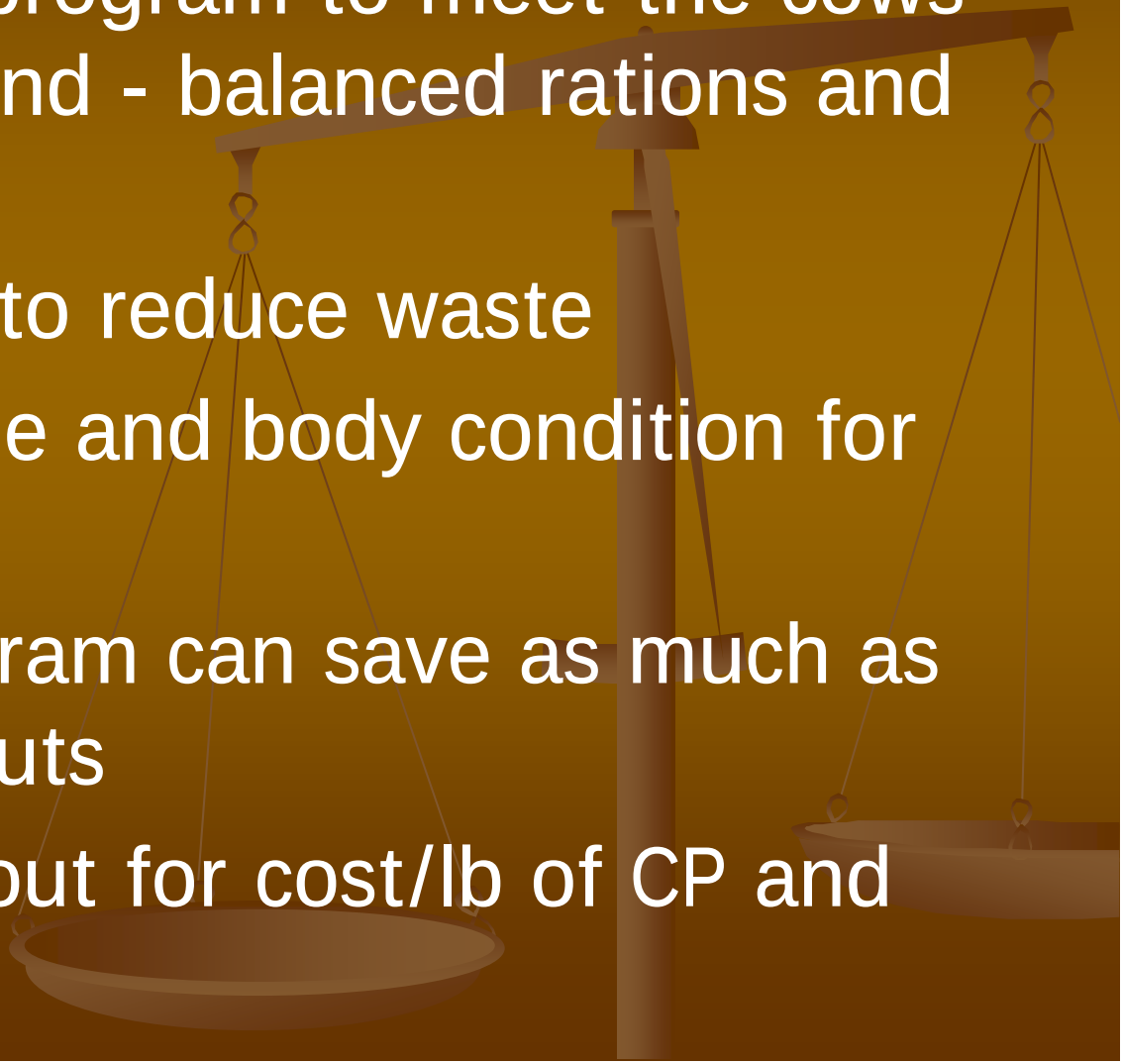
Implanted calves

	Control	Ralgro	Synovex
Initial weight	**230**	**232**	**228**
Final weight	**570**	**592**	**601**



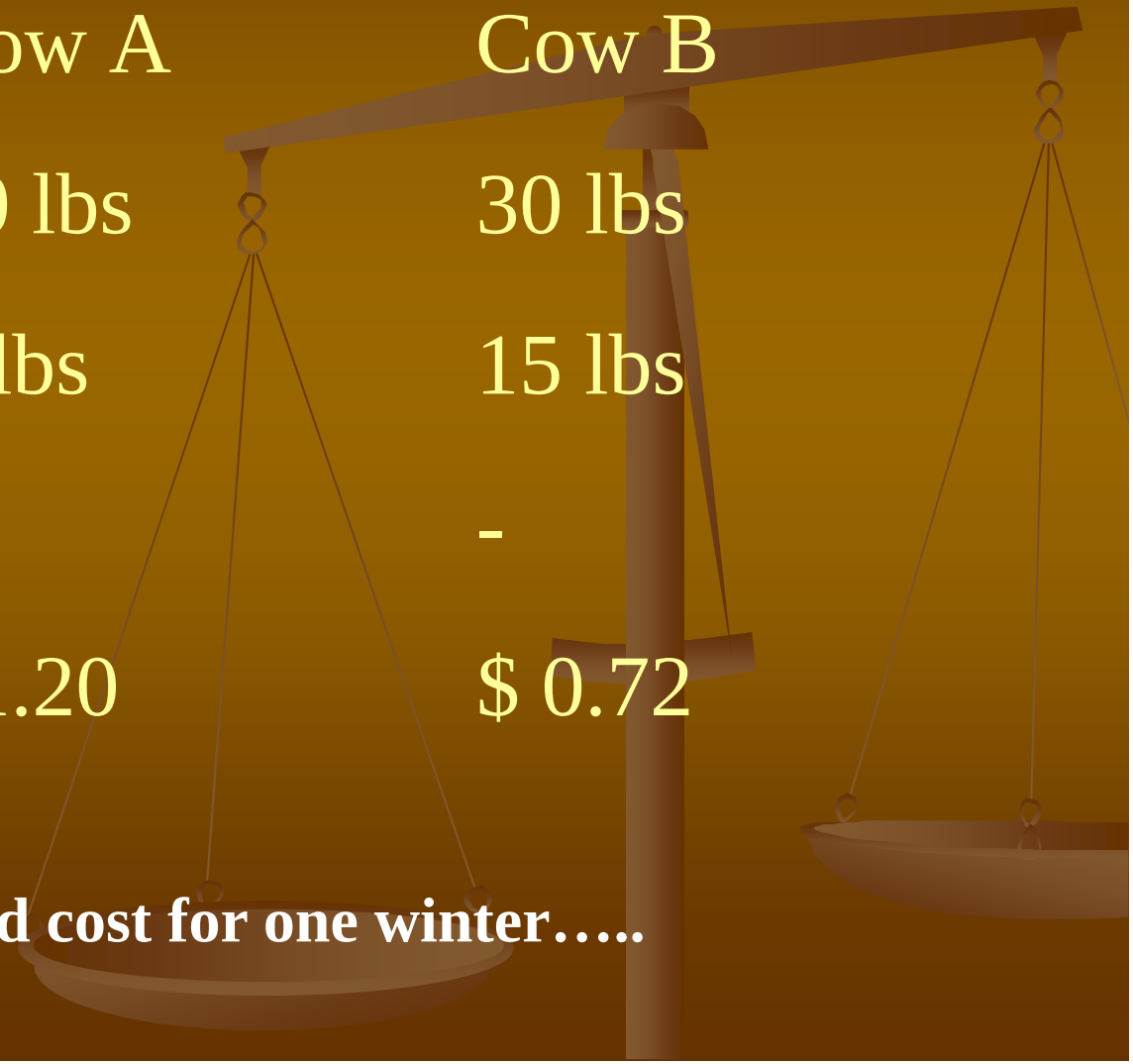
Balance rations for CP and TDN

- Match the feed program to meet the cows nutritional demand - balanced rations and supplements
- Limit feed cows to reduce waste
- Sort cattle by age and body condition for wintering
- A balanced program can save as much as 10% of feed inputs
- Price your feed out for cost/lb of CP and TDN



Example

	Cow A	Cow B
Hay	60 lbs	30 lbs
Straw	5 lbs	15 lbs
Grain	-	-
Cost/day	$1.20	$ 0.72



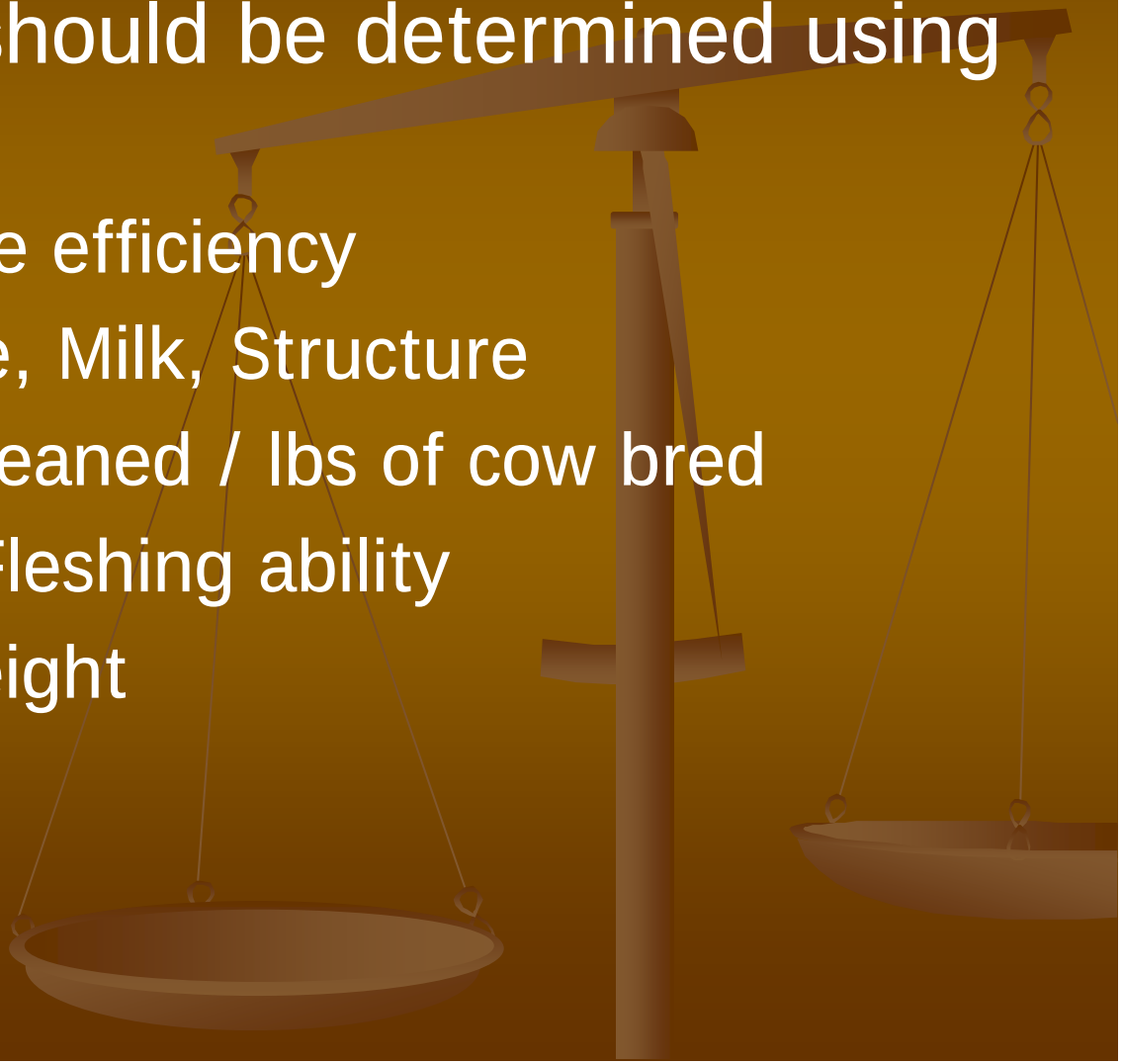
$96 difference in feed cost for one winter…..

Monitor Cow BCS

- Assess body condition of the cow herd periodically...feed to meet the demands of 65-70% of the cowherd....don't base your decision on the bottom 10% of cows that are skinny...they are usually the harder fleshing types...select against them
- Have a neighbor look at your cows once a month...they don't need to be at BCS 6 all winter...maybe just for calving, breeding and lactation?

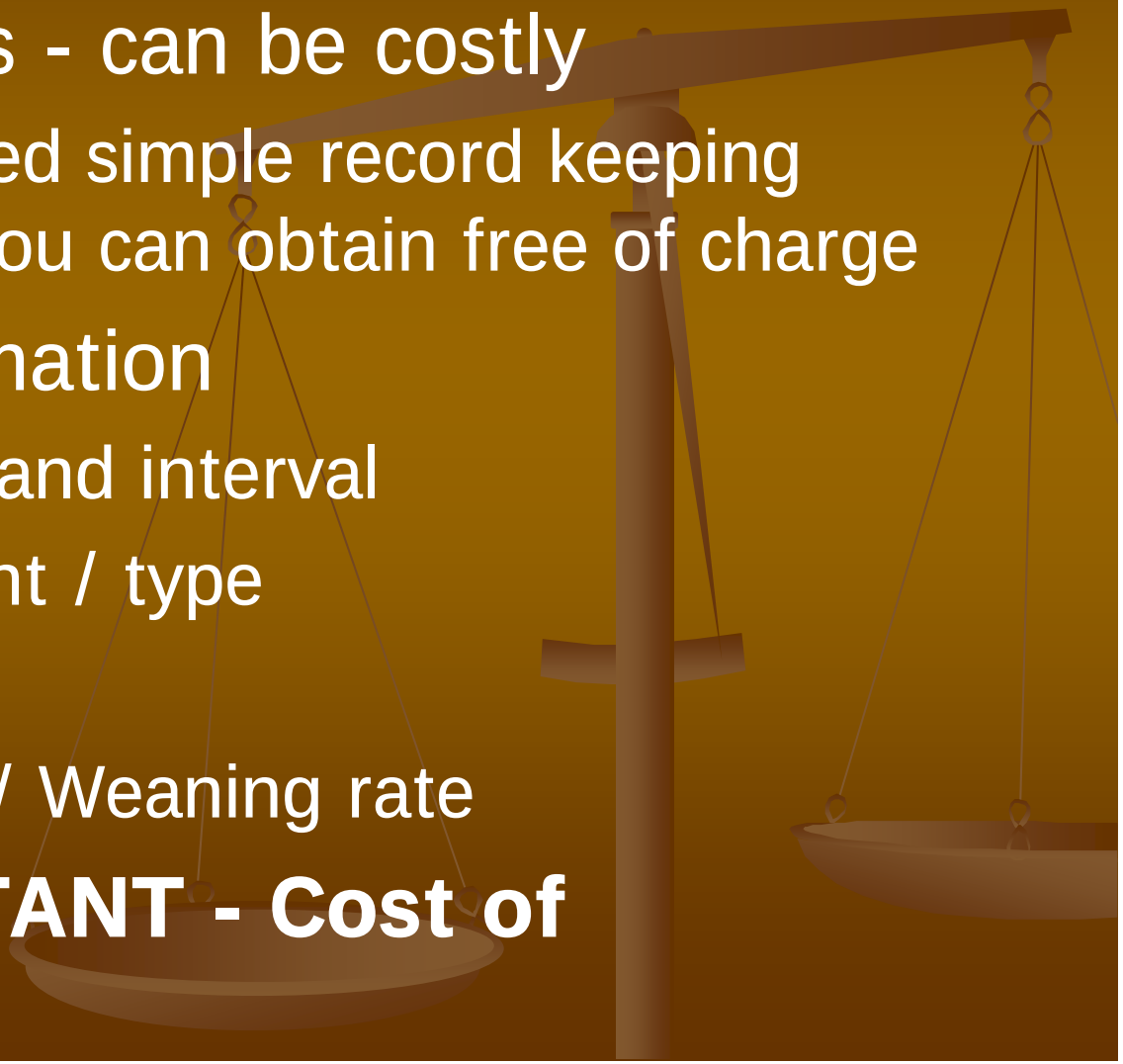
Cow efficiency

- Cow efficiency should be determined using these priorities:
  - 1) Reproductive efficiency
  - 2) Calving ease, Milk, Structure
  - 3) lbs of calf weaned / lbs of cow bred
  - 4) Longevity/ Fleshing ability
  - 5) Weaning weight



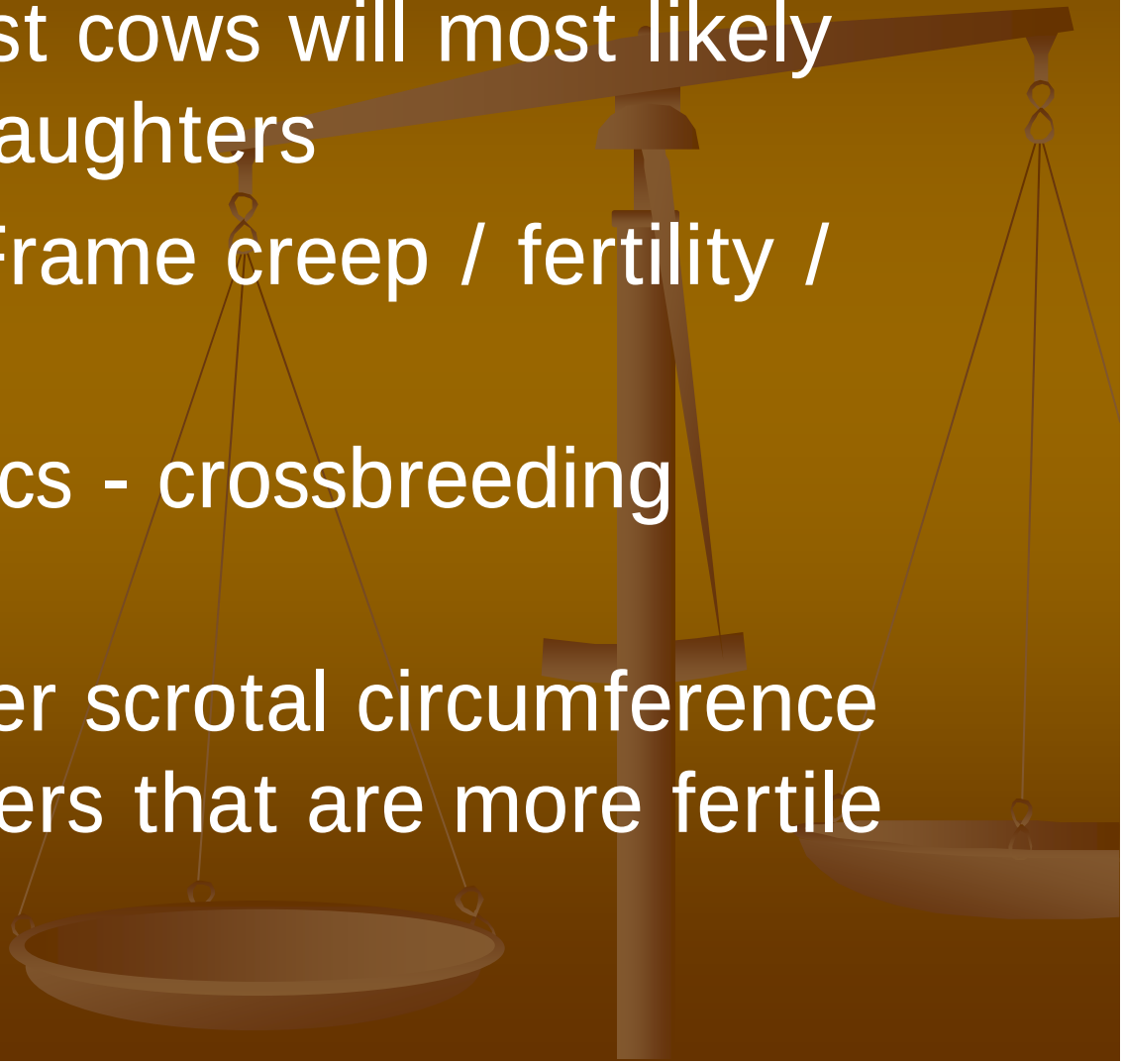
Records

- Keep records and USE them
- Software options - can be costly
  - MAF has designed simple record keeping programs that you can obtain free of charge
- Important information
  - Calving records and interval
  - Cow size / weight / type
  - Weaning weight
  - Pregnancy rate / Weaning rate
- **MOST IMPORTANT - Cost of production...**



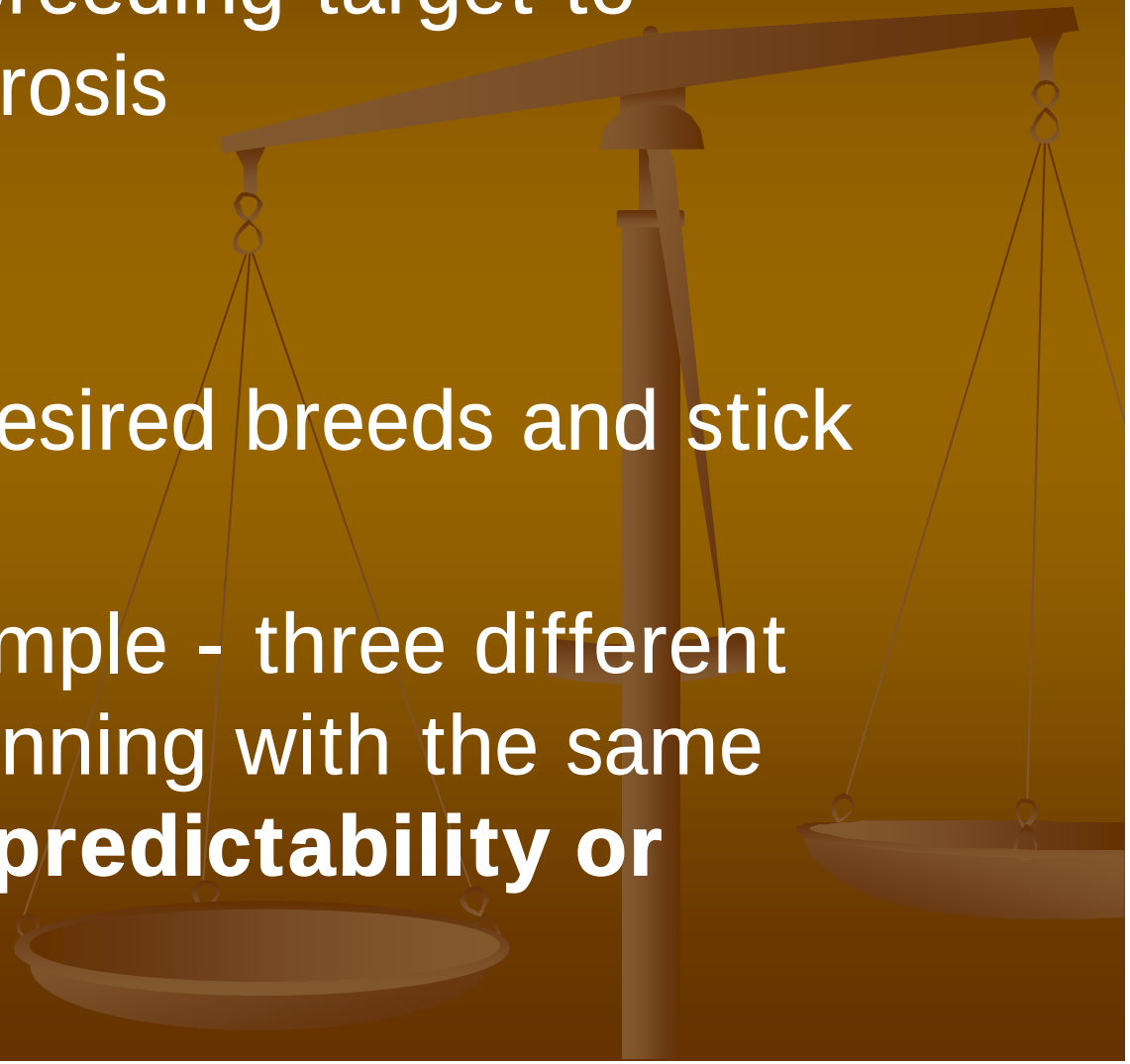
Replacement heifer selection

- Breed type - best cows will most likely produce good daughters
- Top gainers.....Frame creep / fertility / milk
- Targeted genetics - crossbreeding programs
- Bulls with greater scrotal circumference produce daughters that are more fertile



Breed for consistency

- Have a cross breeding target to maximize heterosis
  - 2 breed cross
  - 3 breed cross
- Choose your desired breeds and stick with them!!
- The worst example - three different breed types running with the same cowherd....no **predictability or uniformity**

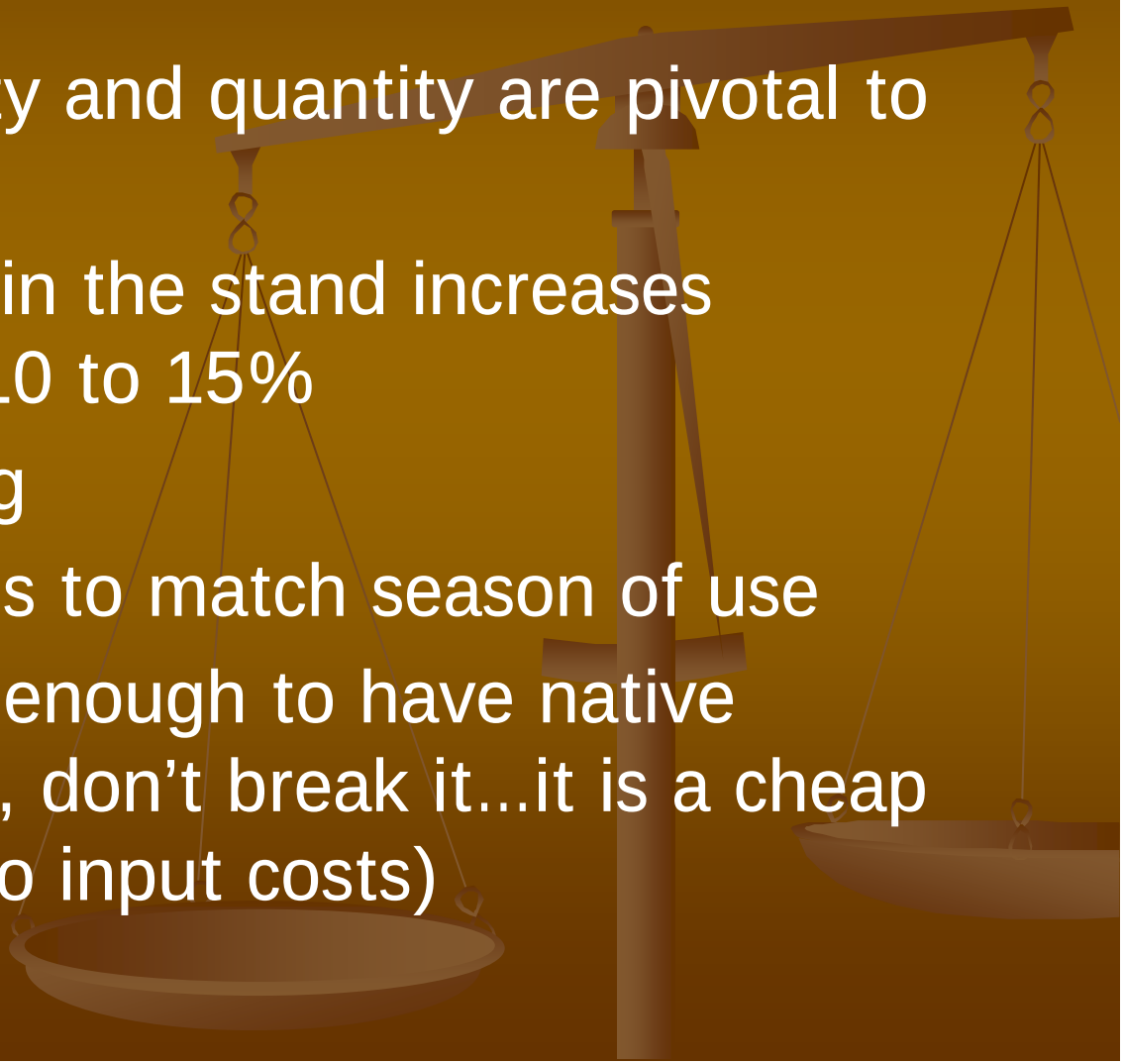


The bull battery

- Performance - growth, milk, reproduction, *carcass quality*
- Type - same breed - different type??
- Predictability - EPD's
- Maternal vs. Terminal breeding strategies
- Cow - bull ratios
- Bull age
- Breeding season length
- Artificial insemination - genetic improvements

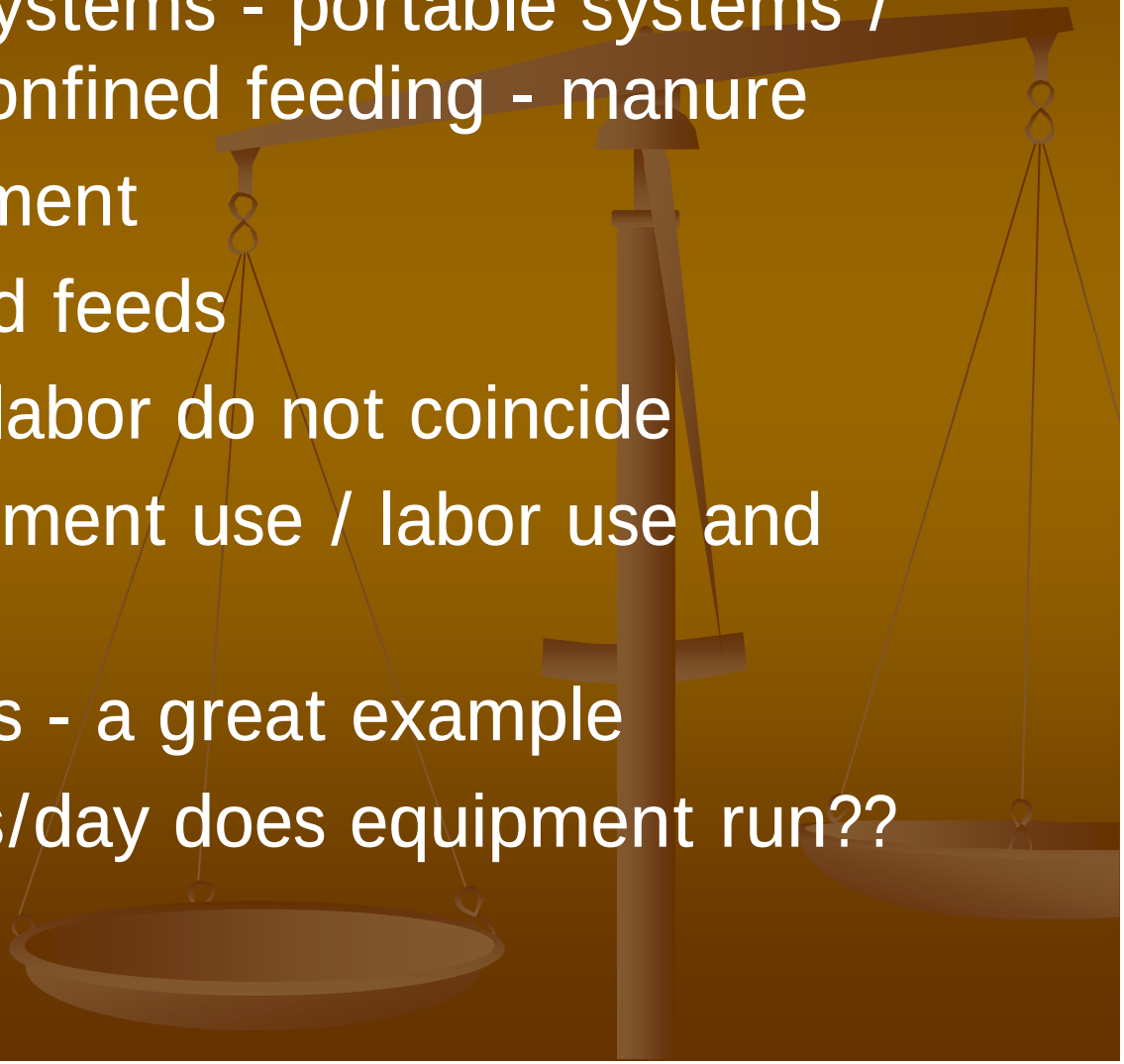
Your grass…..

- 83% of the diet of a finished beef animal is FORAGES.....
- Pasture, its quality and quantity are pivotal to your profitability
- Legumes - 30% in the stand increases performance by 10 to 15%
- Rotational grazing
- Grasses / legumes to match season of use
- ..if you are lucky enough to have native grass...manage it, don’t break it...it is a cheap source of feed (no input costs)



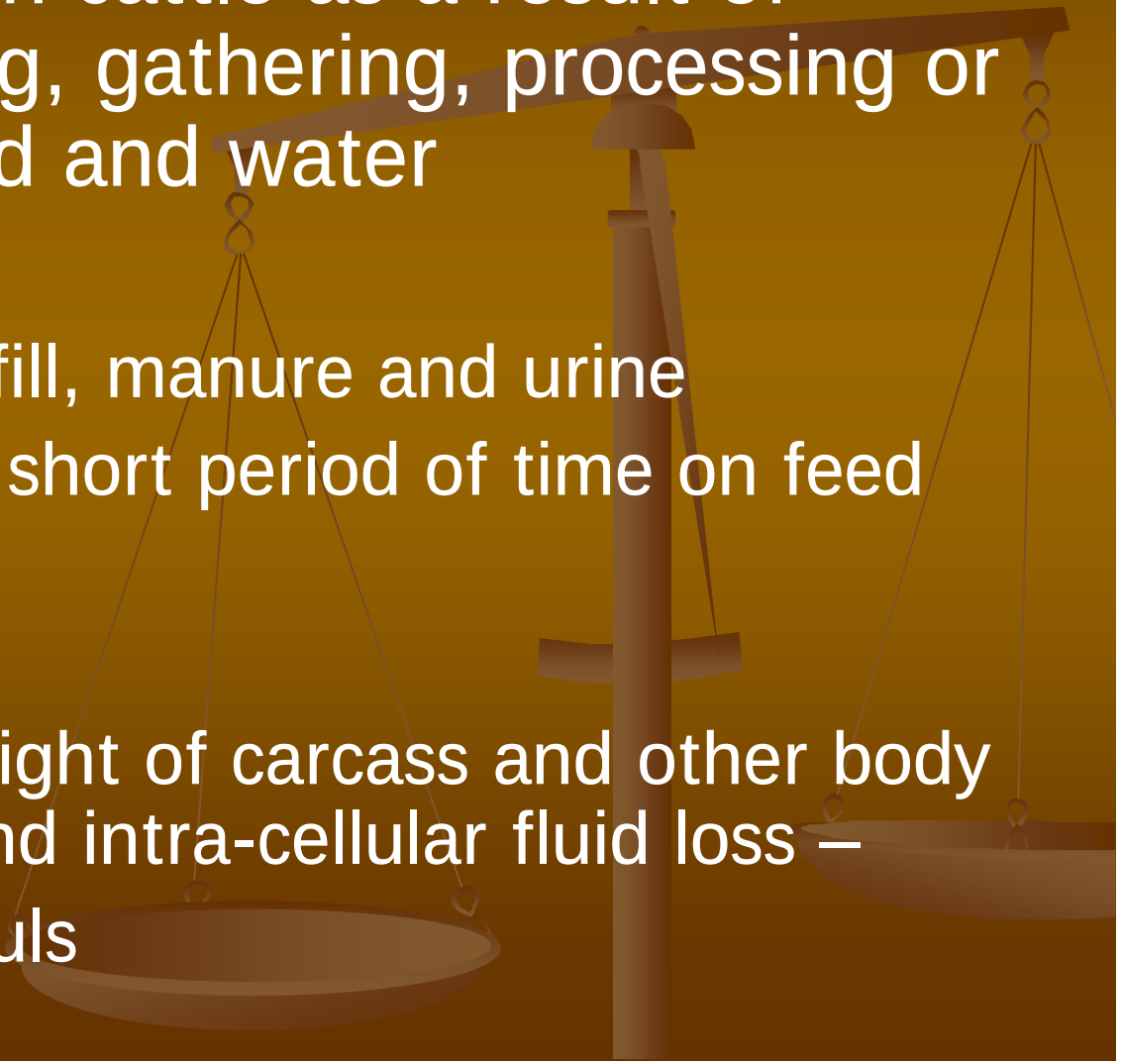
Your management

- Labor intensive vs. extensive
- Winter feeding systems - portable systems / open fields vs. confined feeding - manure
- Calving management
- Harvesting stored feeds
- Heavy blocks of labor do not coincide
- Records of equipment use / labor use and efficiencies
- Handling facilities - a great example
- How many hours/day does equipment run??



Shrink Defined

- Loss of weight in cattle as a result of handling, sorting, gathering, processing or withholding feed and water
- Fill shrink
  - Loss of rumen fill, manure and urine
  - Recovered in a short period of time on feed and water
- Tissue shrink
  - Decrease in weight of carcass and other body tissues/extra and intra-cellular fluid loss –
  - >24 + hour hauls



Example on Fill Shrink

Shrink on wheat pasture cattle

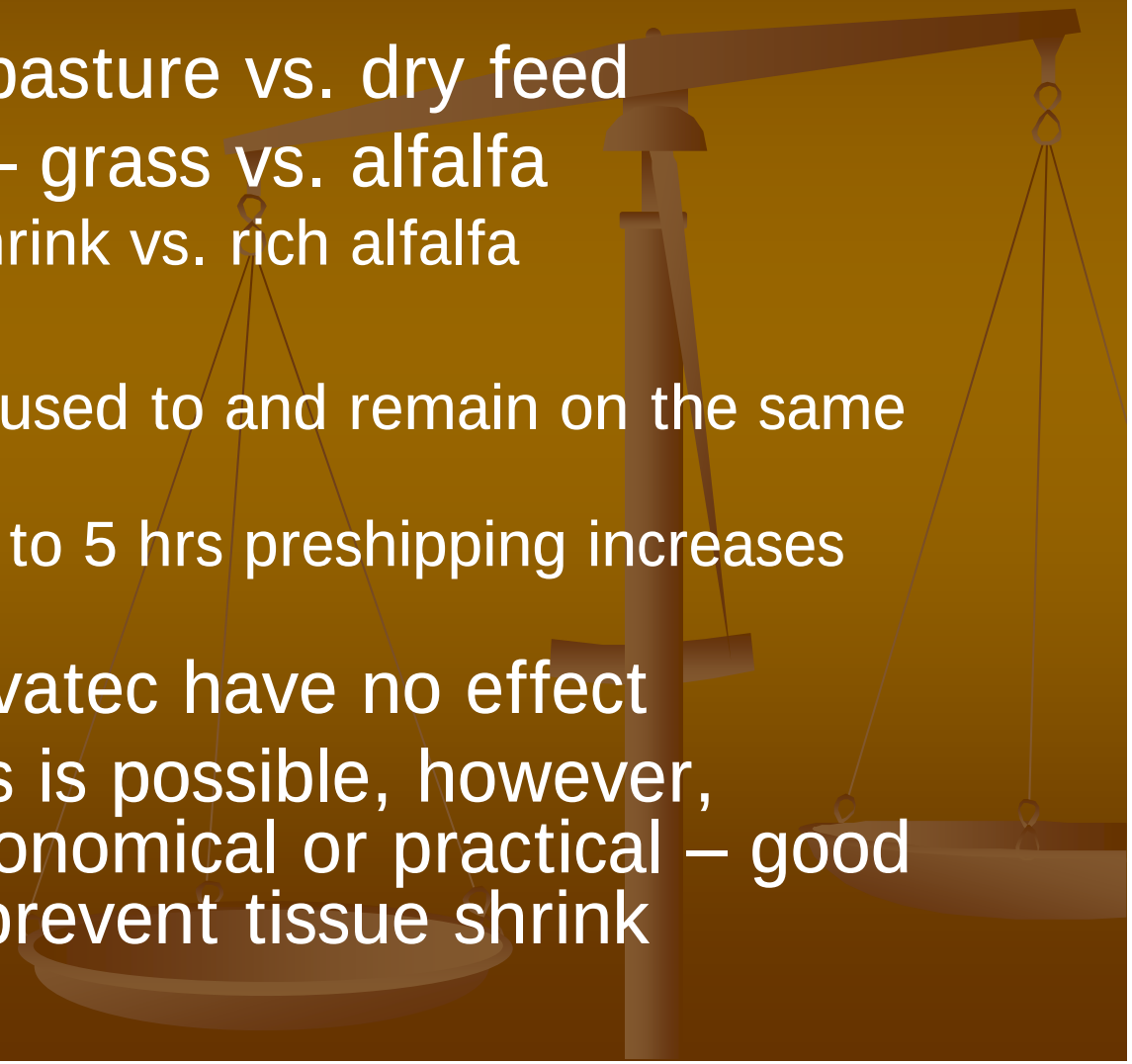
Hours off pasture	Weight	% shrink
0	688	
5	661	4
10	650	5.6
17	640	7.1
24	633	8.1

Hrs back on wheat – fill shrink recovered w/in 6hr

6	687
25	694

Source – Cravey et al. 1991

Factors Affecting Shrink
Type of Feed

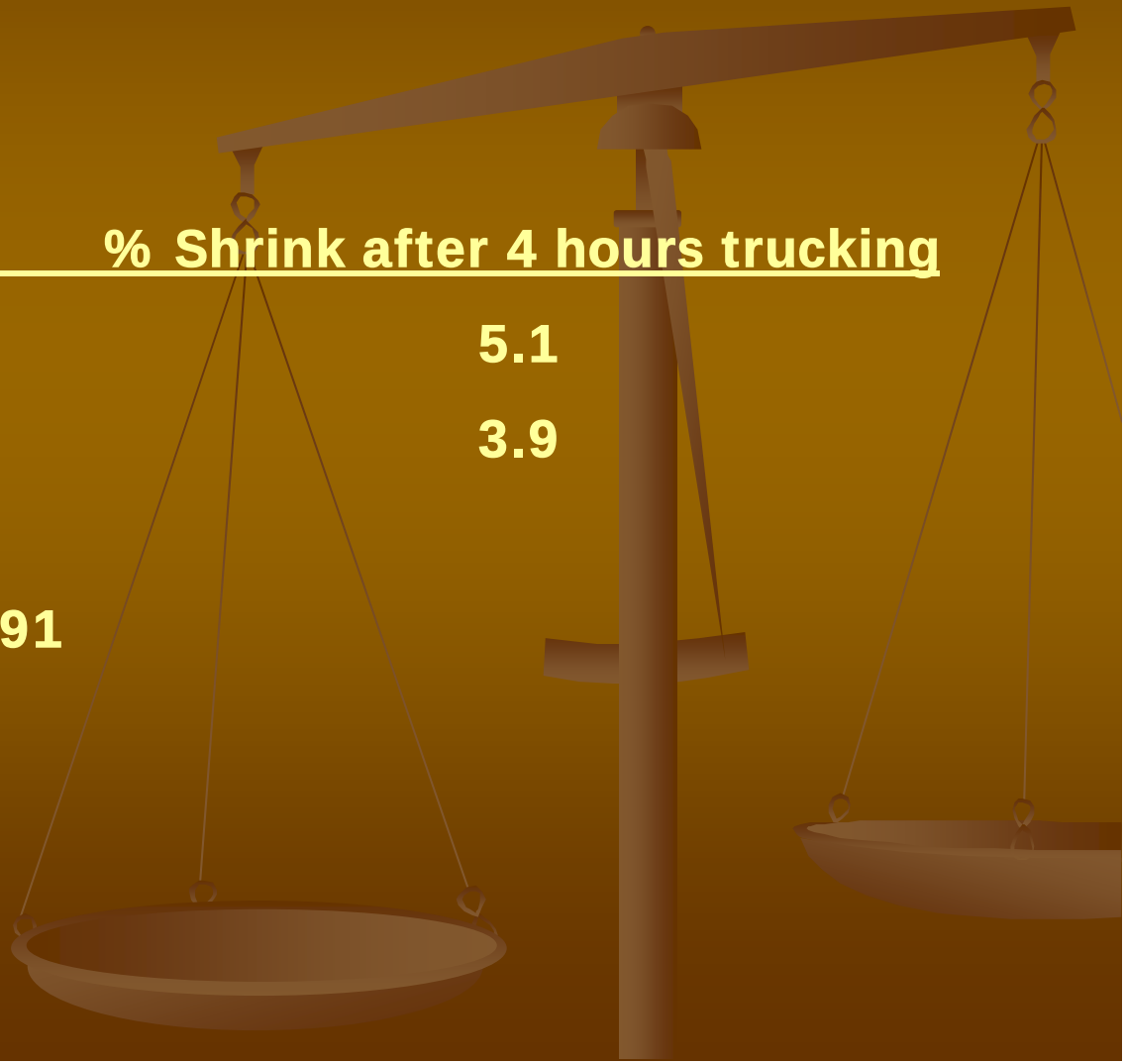


- Feed type – lush pasture vs. dry feed
- Type of dry feed – grass vs. alfalfa
  - Grasses reduce shrink vs. rich alfalfa
- Diet adjustments
  - Cattle need to be used to and remain on the same diet
  - Abrupt changes 3 to 5 hrs preshipping increases shrink
- Rumensin and Bovatec have no effect
- Use of electrolytes is possible, however, sometimes not economical or practical – good for long hauls to prevent tissue shrink

Shrink on wheat pasture when returned to wheat or maintained for 24 hrs in drylot with hay and water access

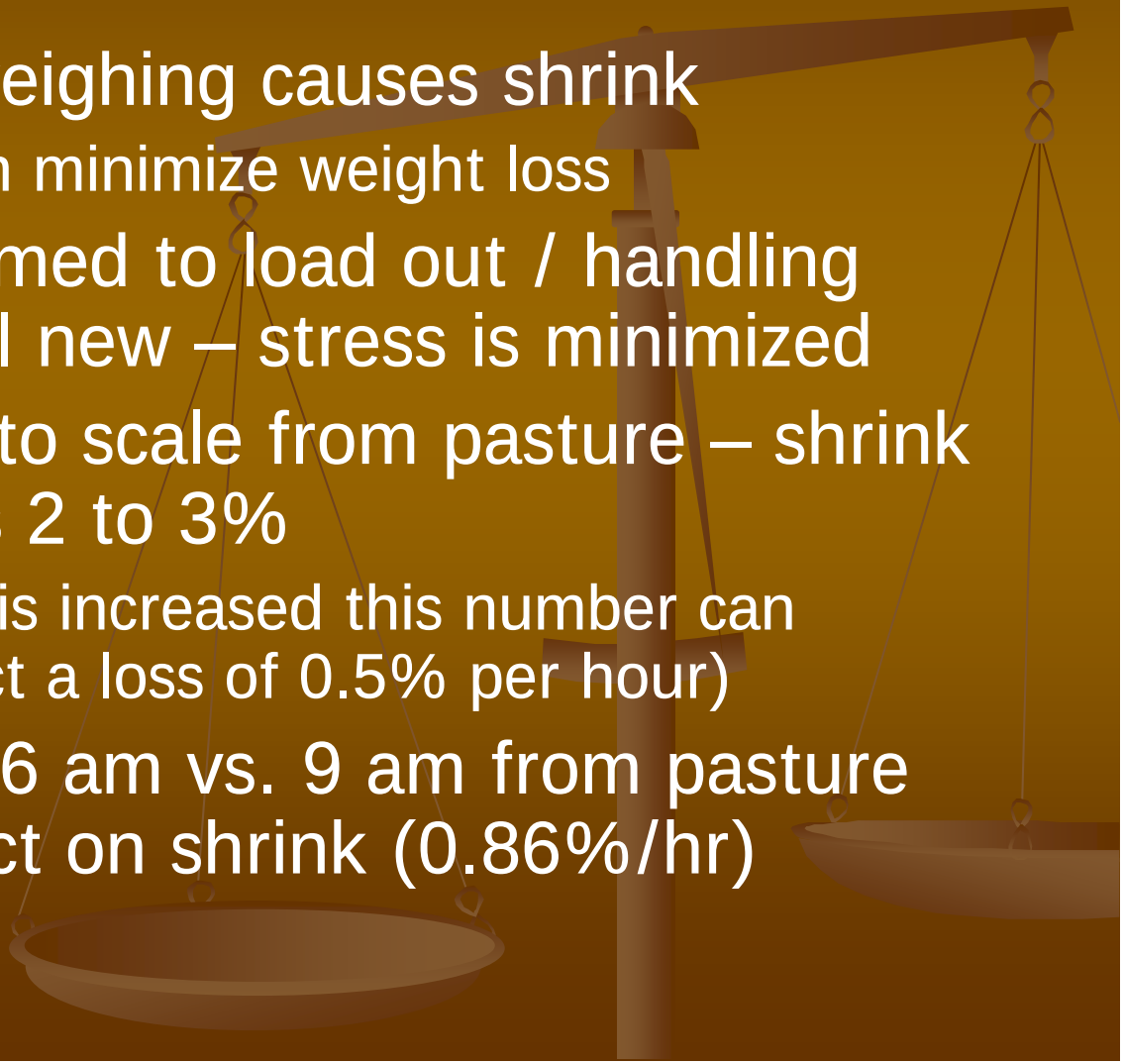
Treatment	% Shrink after 4 hours trucking
Control, wheat pasture	5.1
Drylot, hay – fed	3.9

Source: Cravey et al., 1991



Gathering and Sorting

- Mere process of weighing causes shrink
  - Quiet handling can minimize weight loss
- Get cattle accustomed to load out / handling area – if it's not all new – stress is minimized
- If cattle are close to scale from pasture – shrink can run as little as 2 to 3%
  - If handling/stress is increased this number can quickly rise (expect a loss of 0.5% per hour)
- Gathering time at 6 am vs. 9 am from pasture has profound effect on shrink (0.86%/hr)



Effects of gathering time of yearling steers on shrink and sale value

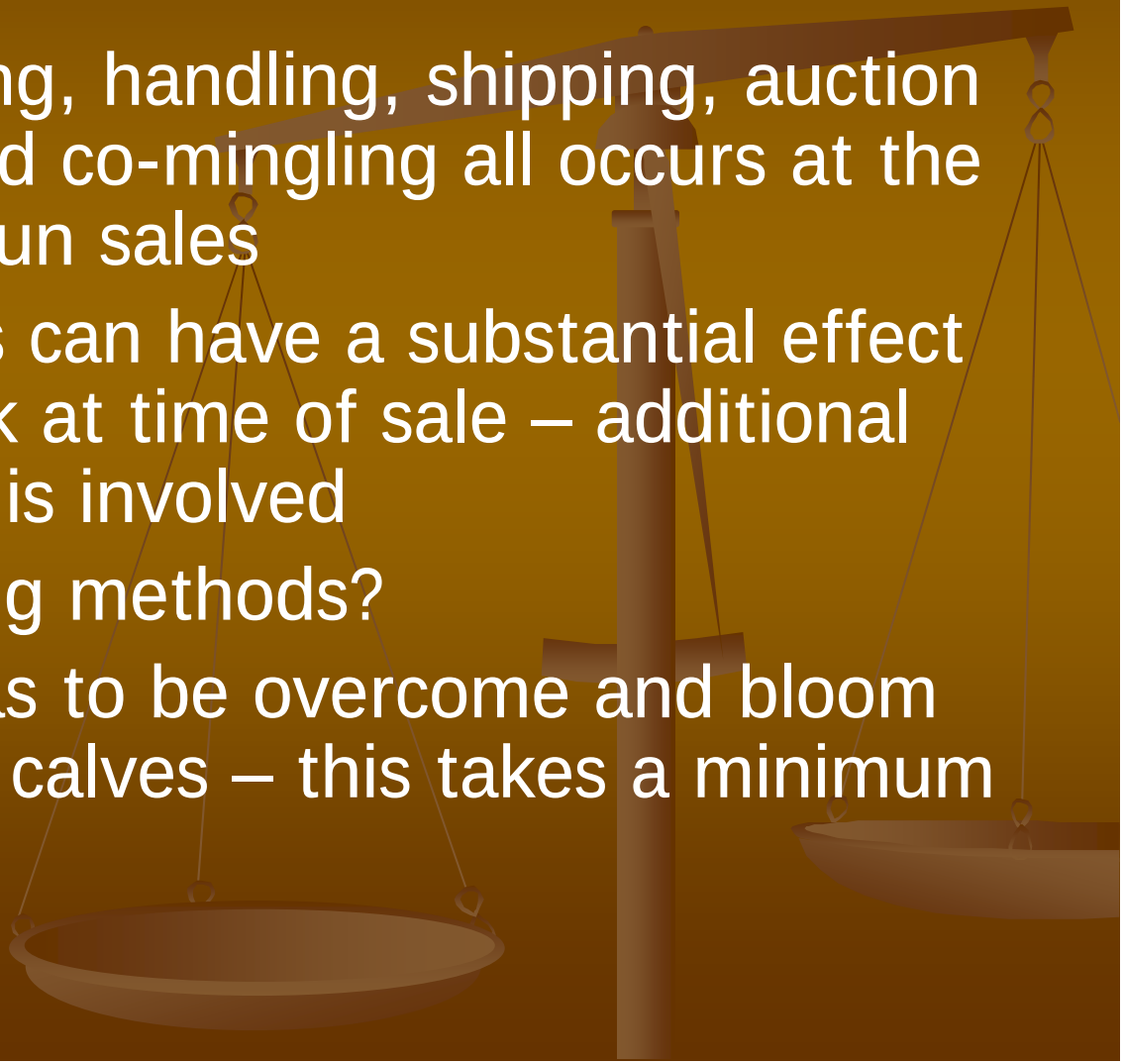
	Gathering time			
	6am	7am	8am	9am
Off pasture weight, lb	681	684	687	695
Shrink to 3pm, %	6.2	5.9	5.0	3.3
Sale weight, lb	639	644	653	672
Added value, $, head	-	2.75	7.70	18.15

*Added value calculated at $0.55 times pounds of added weight

Source: Coffey et al. 1997

Weaning

- Most cases weaning, handling, shipping, auction sorting, fasting and co-mingling all occurs at the same time in fall run sales
- Preweaning calves can have a substantial effect for reducing shrink at time of sale – additional cost and handling is involved
- Low stress weaning methods?
- Weaning stress has to be overcome and bloom has to be back on calves – this takes a minimum of 21 days



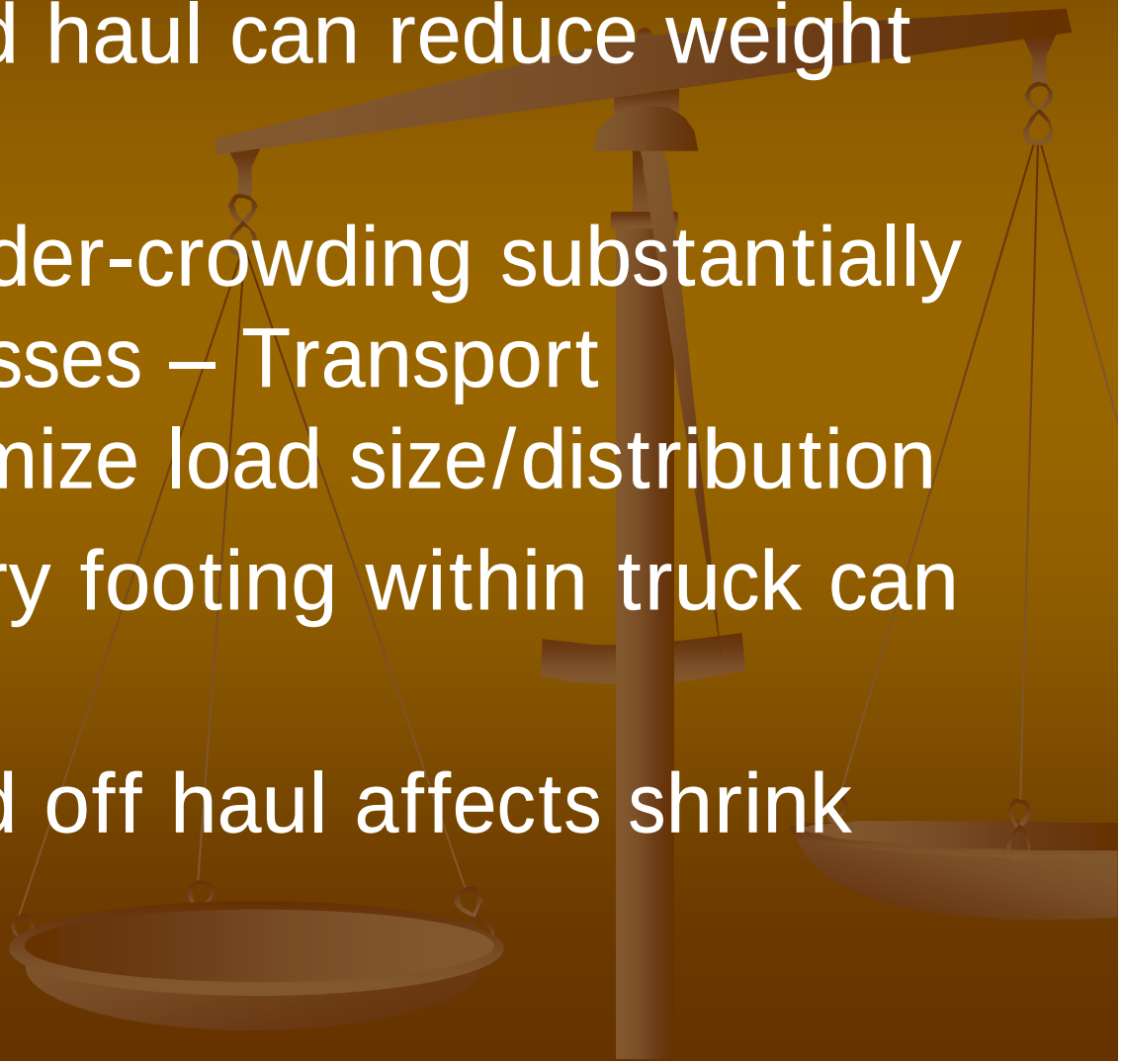
Weight changes of calves that were preconditioned, or weaned and overnighted prior to sale, or weaned the day of sale

Item	Weaned 22 d b/f sale	Weaned day b/f sale	Weaned day of sale
22 day gain	43	35	33
Previous afternoon to sale morning (3pm to 9am)	-1	-16	-2
Weight change – morning (9 am to 1:30 pm) sale time	-11	-10	-15
Total loss	-12	-26	-17
Shrink (% Body weight)	2.3	4.9	3.4

* Barnes et al. 1990

Conditions of Haul

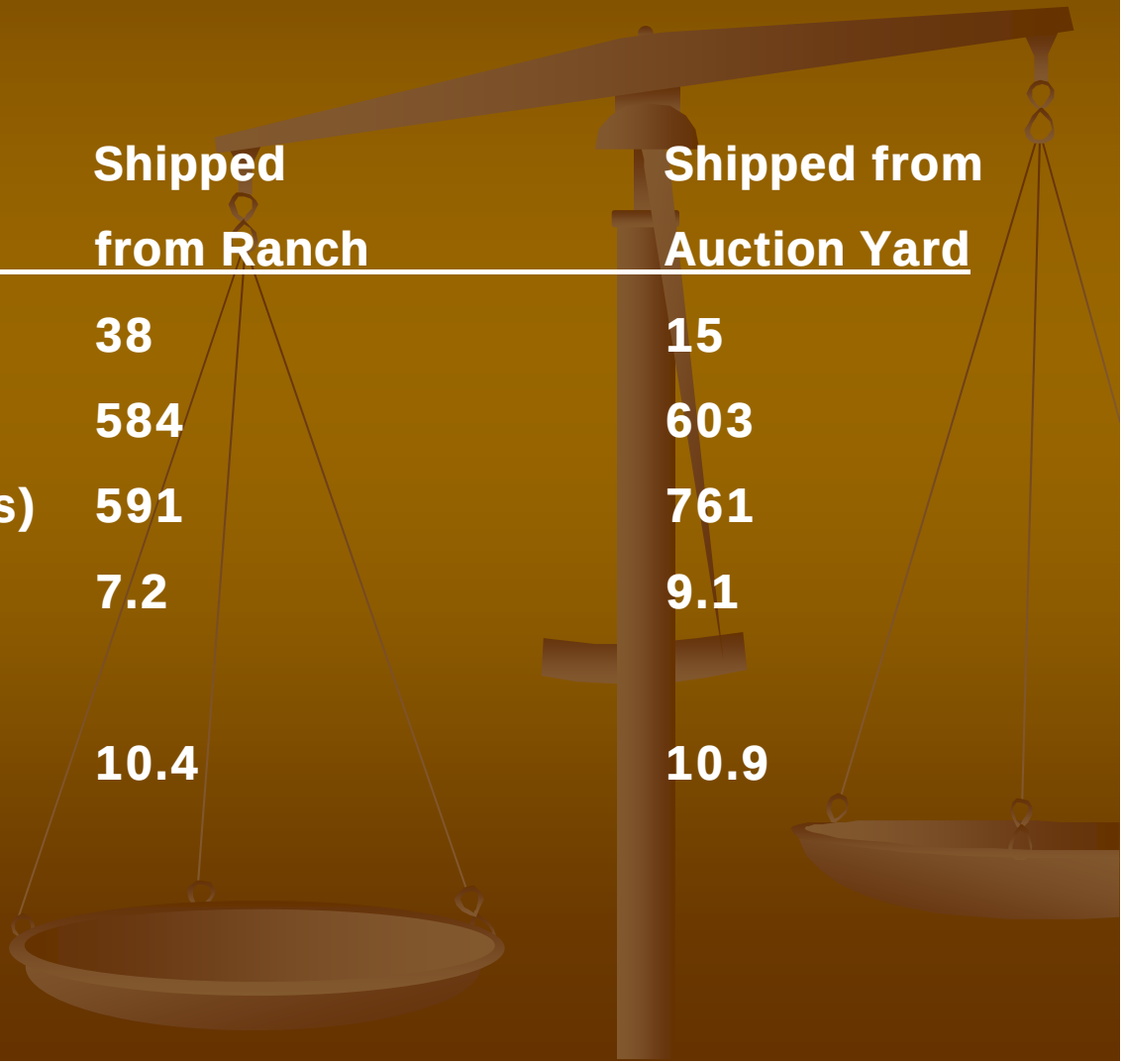
- A short load and haul can reduce weight by 3%
- Over and/or Under-crowding substantially add to shrink losses – Transport companies optimize load size/distribution
- Poor and slippery footing within truck can increase shrink
- Handling on and off haul affects shrink



Shrink and recovery time for cattle shipped directly from ranches or auction yards

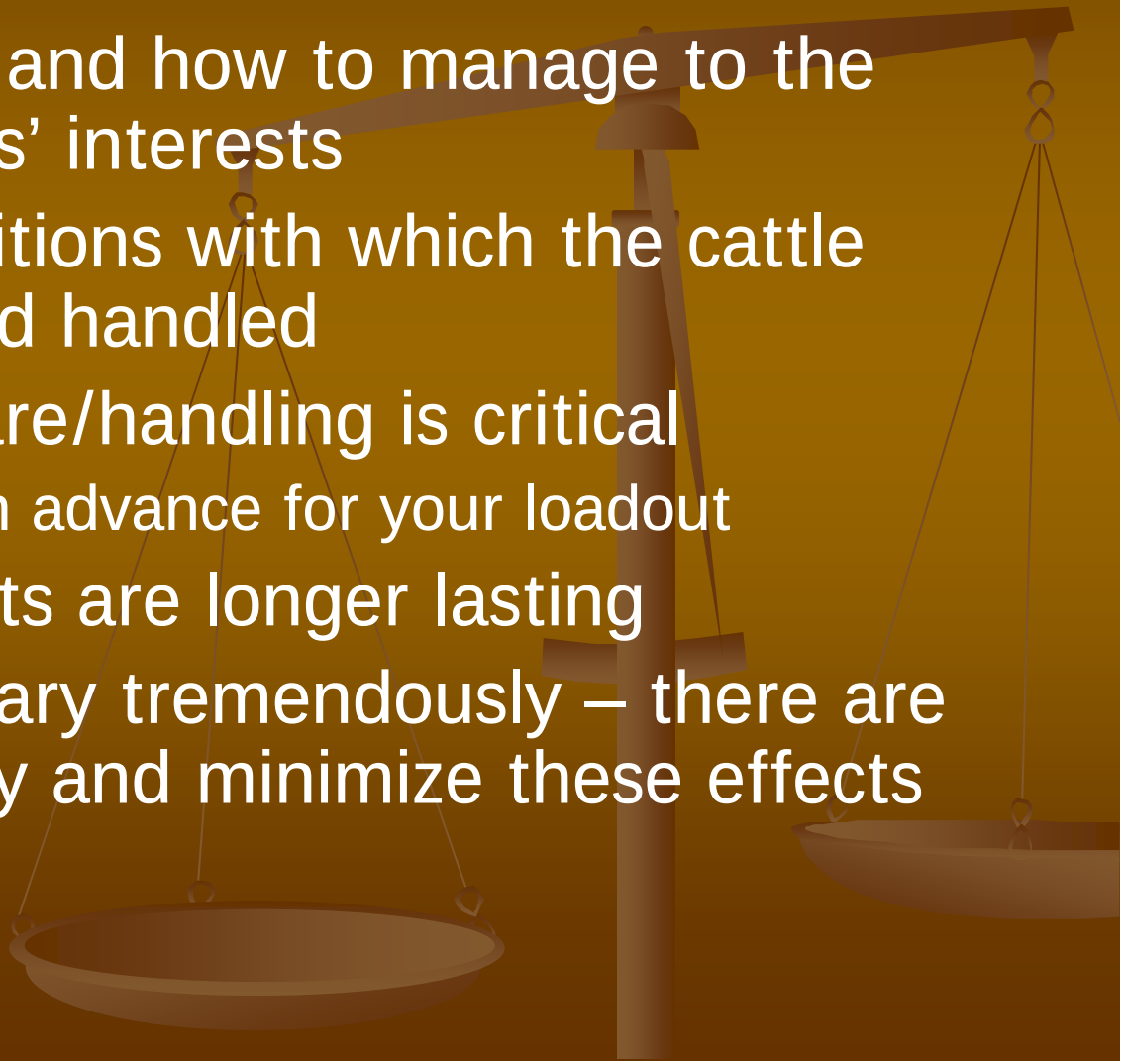
Item	Shipped from Ranch	Shipped from Auction Yard
Number of truck loads	38	15
Avg. shipping weight (lbs)	584	603
Avg. distance shipped (miles)	591	761
Avg. shrink, %	7.2	9.1
Days to recover to shipping weight	10.4	10.9

*Self and Gay 1972



Conclusion

- Understand shrink and how to manage to the best of both parties' interests
- Agree on the conditions with which the cattle will be weighed and handled
- Cattle health/welfare/handling is critical
  - Be prepared well in advance for your loadout
- Tissue shrink effects are longer lasting
- Cattle shrink can vary tremendously – there are many options to try and minimize these effects

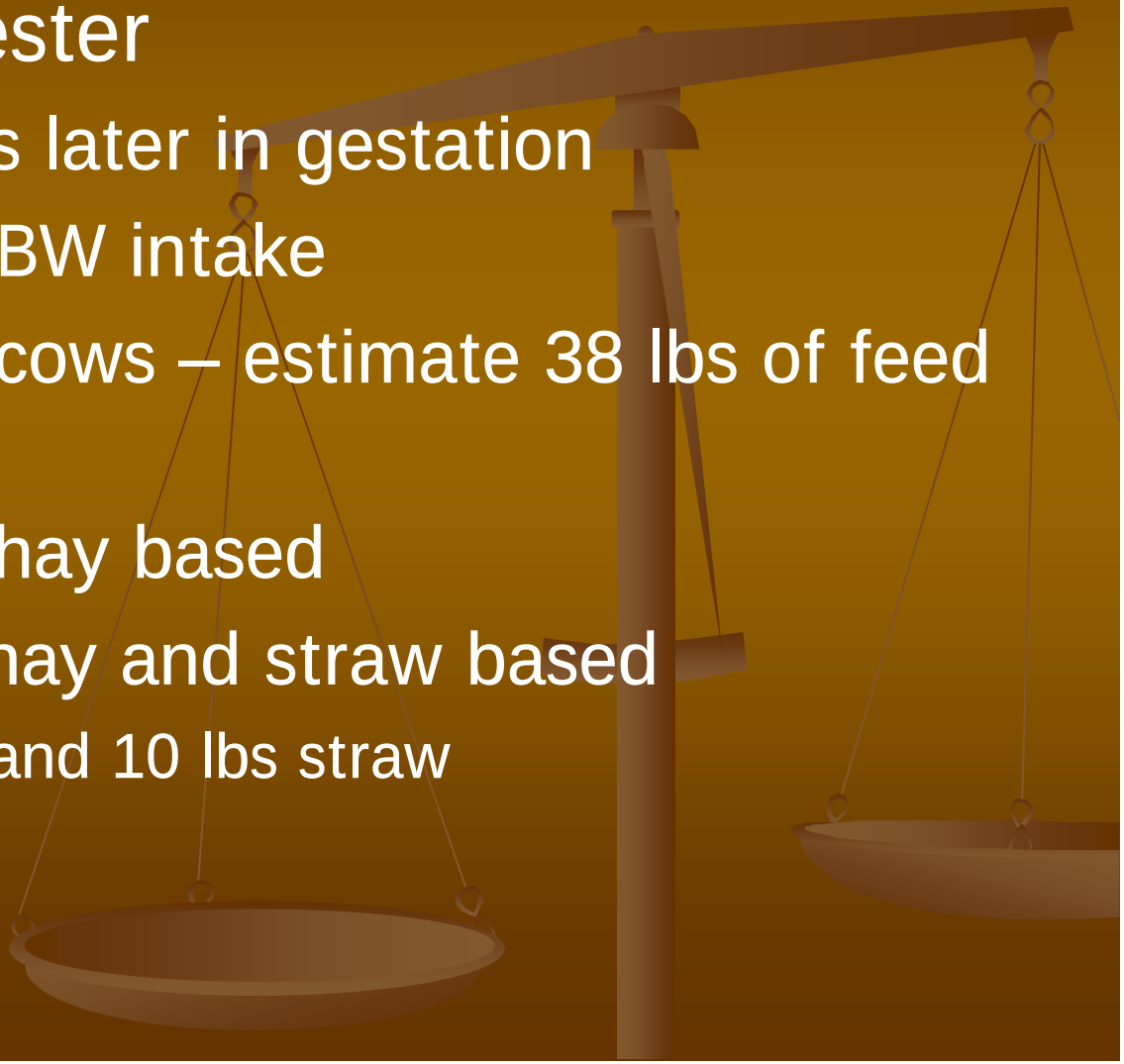


Winter feeding ideas – Bale grazing – does it work?

John Popp, Ph.D.
Livestock Knowledge Center
Manitoba Agriculture, Food and Rural Initiatives

Winter nutrition for cows

- 2nd vs. 3rd Trimester
  - Higher demands later in gestation
  - Allow for 2.5% BW intake
  - Eg. for 1350 lb cows – estimate 38 lbs of feed available
  - Calving early – hay based
  - Calving later – hay and straw based
    - Eg. 27 lbs hay and 10 lbs straw

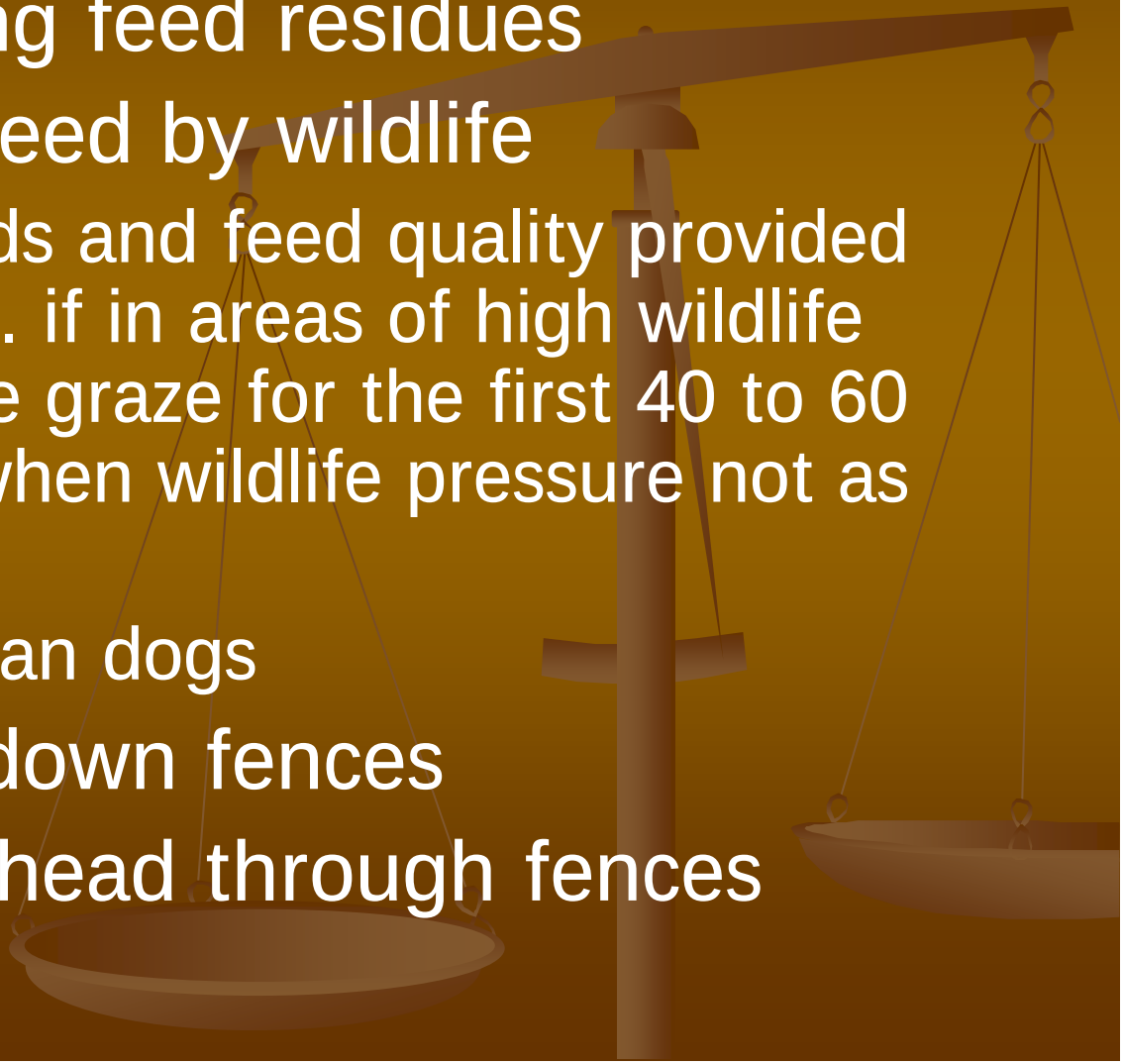


Managing bale grazing

- University of Saskatchewan data
  - Tighter rotation will result in less feed lost
  - Need at lease 1 bale for every 20 cows on rotation
  - If feeding hay only can rotate every 2 to 3 days
  - If feeding hay/straw ration rotate every 3 to 4 days

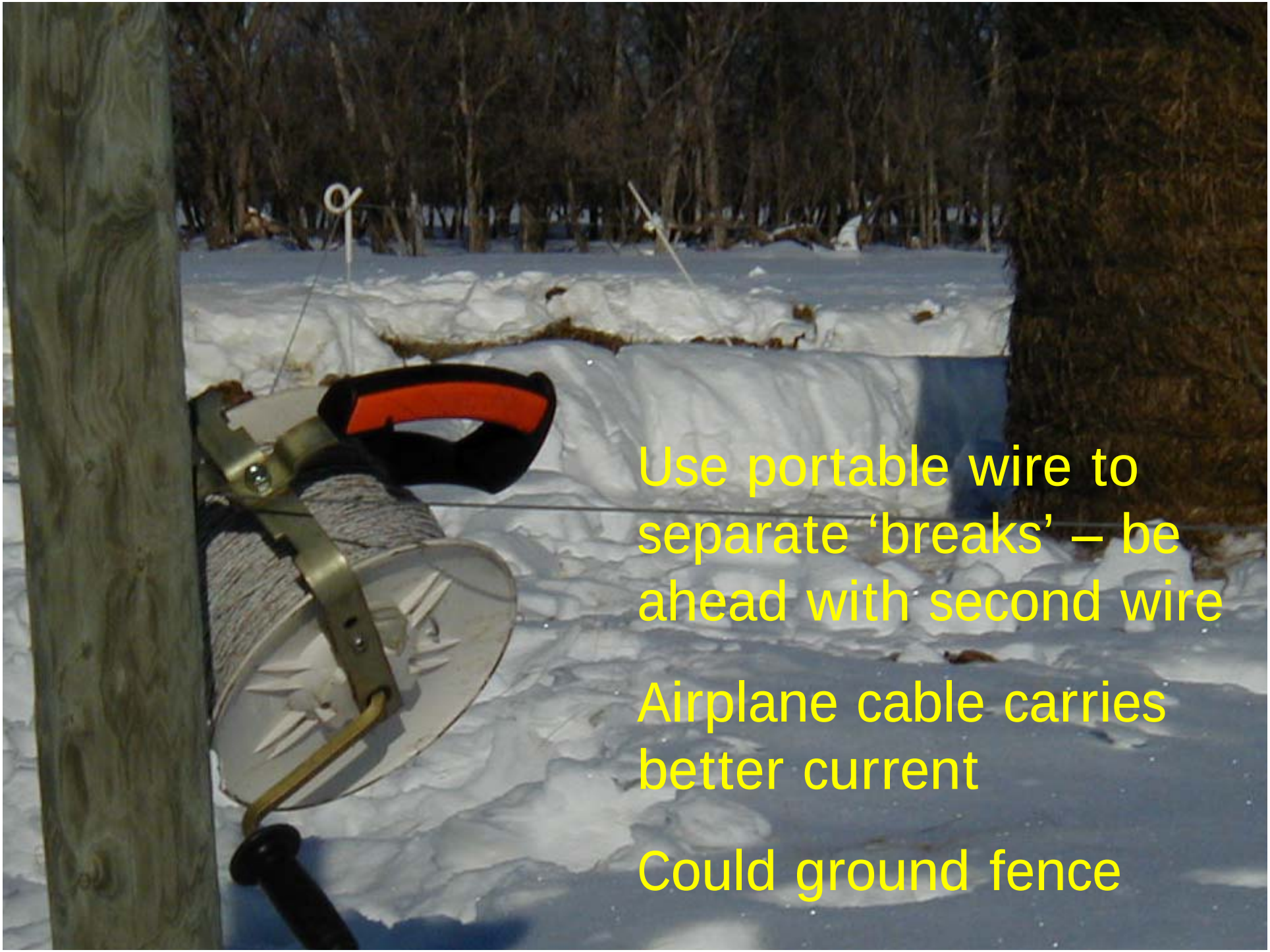
Bale grazing problems

- Feed loss / Spring feed residues
- Depredation of feed by wildlife
  - Manage the feeds and feed quality provided to the cattle (eg. if in areas of high wildlife density only bale graze for the first 40 to 60 days of winter when wildlife pressure not as high)
  - Livestock guardian dogs
- Wildlife tearing down fences
- Cattle pushing ahead through fences




Bale placement – minimum 15 feet between bales / 20 feet on breaks (rotations)

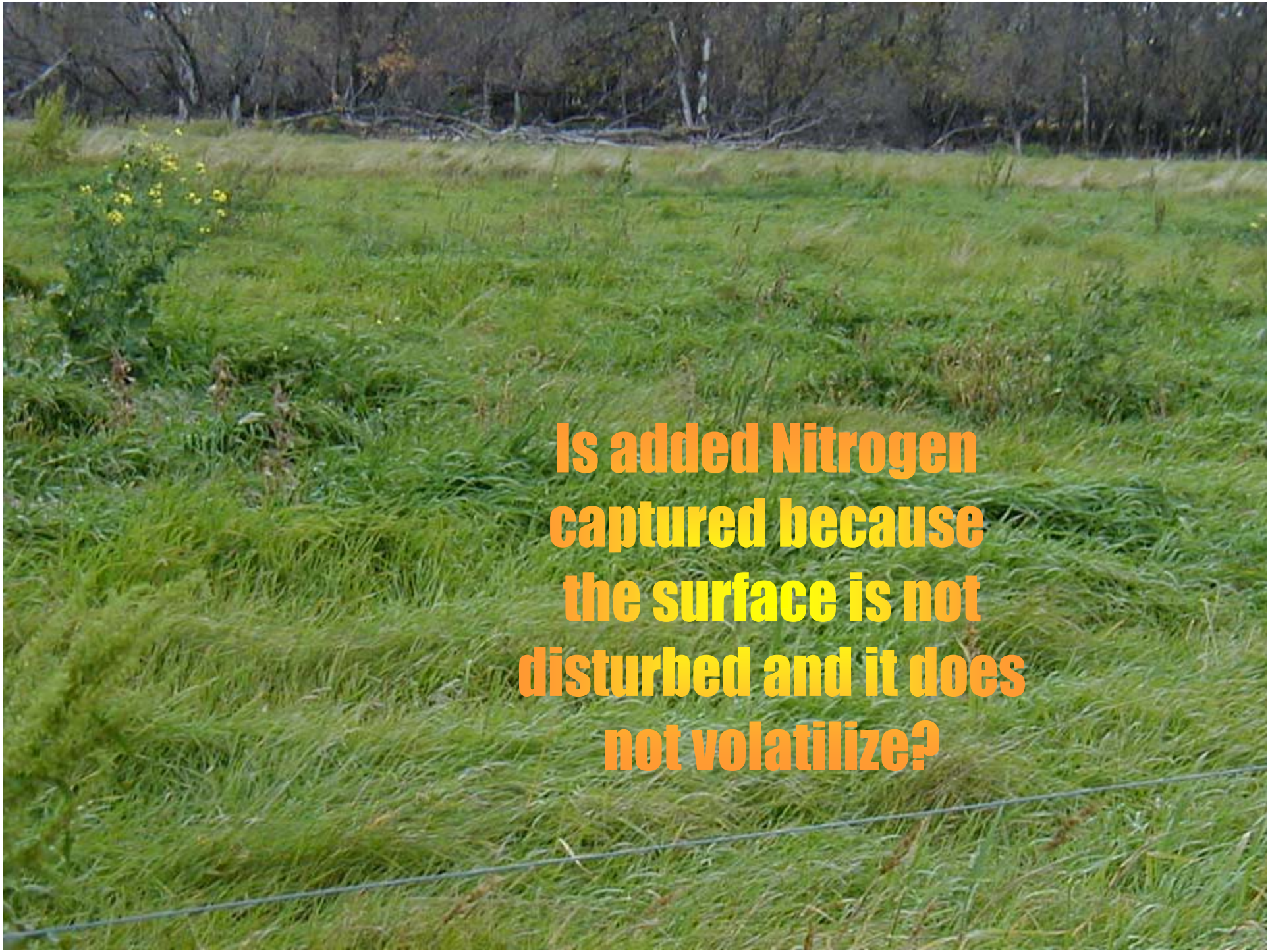
Pull twine in fall – use a chain or rope with a hook – pull out….its quick


Use portable wire to separate ‘breaks’ – be ahead with second wire
Airplane cable carries better current
Could ground fence


5 foot fiberglass rods with pigtail ends


WHAT DOES IT COST DAILY TO FEED A COW WITH A WIRE AND BALES VS. A BALE PROCESSOR?
WHAT DID IS COST TO MAKE THE FEED AND PUT IN FRONT OF THE COW?


Studies at UofS show
a 4 to 6% loss of hay
when bale grazing


Is added Nitrogen captured because the surface is not disturbed and it does not volatilize?


Because it sure
makes the grass
grow....

Bale grazing

- Try to see if it works within your management system
- If wildlife is a problem, then perhaps a 2 day system is the only option
- Whether the feed is fall placed or in the stackyard – you can still do this
- Results don't appear to show any additional feed loss and the grass does grow on the sites without having to harrow or redisturbe
- First year grass has more weeds that clear out in the second year