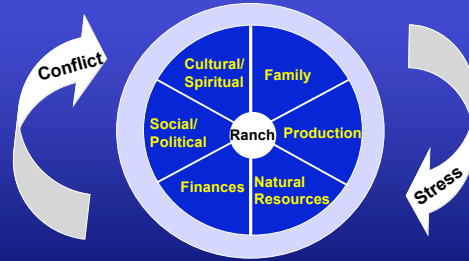


Benefits of Weaning Calves at Younger than Traditional Ages

Trey Patterson, Ph.D.

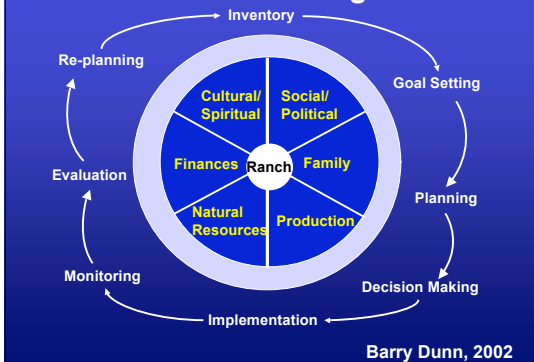


The Ranch Wheel



Barry Dunn, 2002

IRM Decision Making Process



Barry Dunn, 2002

What is Early Weaning?

- 1) Weaning before the start of the breeding season (45-90 d)
 - Can improve reproduction
 - Greater effect if cattle are thin
 - Increased management of calves

- 2) Weaning during or towards the end of the breeding season (90-150 d)

Whittier, 1995

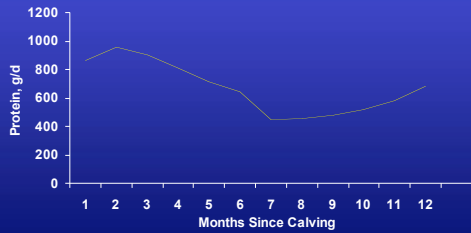


“If ample forage is available for grazing, milk production is likely the key factor in managing body condition during late summer and fall.”

Don Adams, 2005

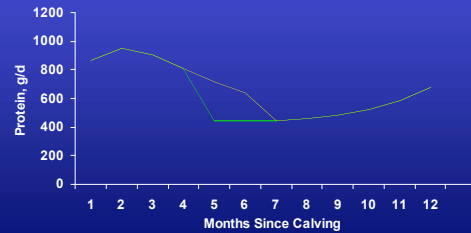


Annual Cow Requirements



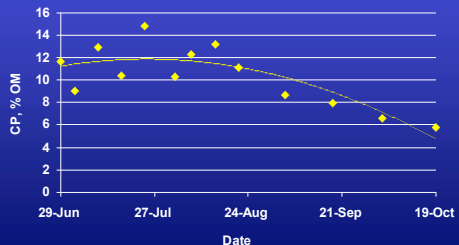
NRC, 1996

Annual Cow Requirements



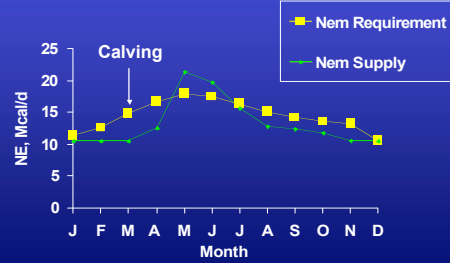
NRC, 1996

Crude Protein Content of Diets Buffalo, SD



Patterson and Johnson, 2001

March Calving



Will This Cow Re-breed?

What are costs of wintering this cow?

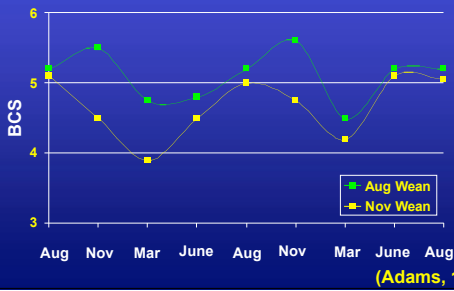


Extended grazing systems have been shown to improve cow-calf returns



Adams et al, 1994

Weaning Effects on BCS



Weaning Two-Year-Old Cows

Performance Between September and November

Item	Wt X, lb	BCS X
Sept Wean	92	0.0
Nov Wean	-28	-0.4

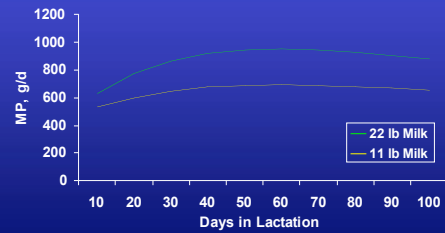
(P < .01) (Lamb et al., 1996)

Milk Production and Weaning

- 21 lb milk: **Lost 1 BCS from August to September**
- 15 lb milk: **Maintained BCS from August to September**

Adams et al., 1993

Protein Requirements: 1200 lb cow



NRC, 1996

3-State Time of Weaning Project

SDSU

- Roger Gates
- Trey Patterson
- Pat Johnson
- Ken Olson
- Scott Fausti
- Marty Beutler
- Bill Epperson
- Robin Salverson

UW

- Steve Paisley

NDSU

- Doug Landblom

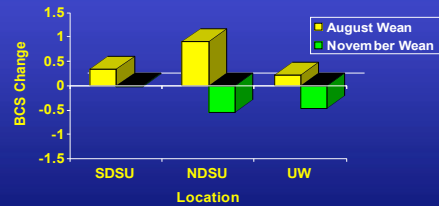
3-State Time of Weaning: Cow Production and Management

- March/April Calving Cows at 3 locations
- Two weaning dates (2003-2004):
 - 140 days (mid-August)
 - 215 days (early-November)
- Weights and BCS taken at each weaning date
- Calves backgrounded for 50-60 d and then finished

Forage Measurements



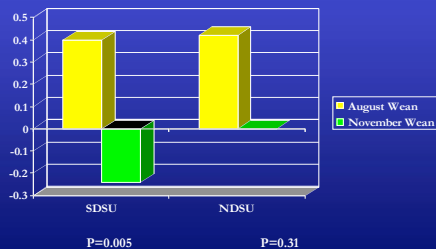
Body Condition Score Change from Aug to Nov (2003-04)



P < 0.01 at SDSU and NDSU

Landblom et al., 2006

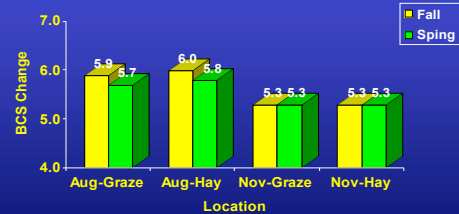
Body Condition Score Change from Aug to Nov (2005-06)



P=0.005

P=0.31

SDSU Winter Body Condition Score Across Two Systems



P < 0.01 for Aug vs Nov

3 - State Weaning Project Backgrounding Performance

Item	NDSU		SDSU		UW	
	Early	Normal	Early	Normal	Early	Normal
DOF	53	53	49	54	50	51
Start Wt., lb ^a	412	578	414	600	487	686
End Wt., lb ^a	593	743	568	765	602	820
ADG, lb ^b	3.44	3.15	3.15	3.05	2.27	2.67
F:G, ^c	4.85	6.72	5.09	6.75	5.93	6.90

^aTreatments at all locations differ (P<.10)

^bTreatments at NDSU differ (P<.01)

^cTreatments at NDSU and SDSU differ (P<.01)

Landblom et al., 2006

Weaning Weights and Calf Gain

Location	Aug	Nov	ADG
SDSU	403	582	2.2
NDSU	397	467	1.0

Fall Calf Gains

- Gains affected by:
 - Forage quantity
 - Forage quality
 - Milk production of the cow
- Greater advantage to early weaning when calf gains are reduced

3-State Time of Weaning: Finishing Performance

- August-weaned calves finished
 - 32 days younger
 - 51 days longer on feed
- August-weaned calves more efficient from SDSU and NDSU (12%)

Landblom et al., 2006

Forage Utilization: Aug-Nov

	Aug	Nov
Forage Use, lb/acre	717	990

P = 0.15

Dry cows used 72% the amount of forage

Landblom et al., 2006

1000 acres; stocked with 175 cows:

- An additional 29 days of grazing (5 animal unit days/acre)



What about Economics?

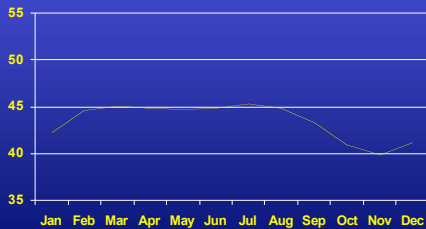
Weaning Systems (Adams, 2005)

	Aug Wean		Nov Wean	
	Sup	No	Sup	No
Grazing \$	54.26	52.91	75.16	73.37
Suppl. \$	15.77	0.0	15.77	0.0
Weaning				
Net Ret	293.01	337.17	312.91	332.50
Slaughter				
Net Ret	-9.35	3.01	21.76	10.91

Average Prices for Steers 1986-2001: NE and WY



Average Prices for Utility Cows 1986-2001: NE and WY



Value of Forage Savings

- Use example given earlier: An additional 29 days of grazing in 1000 acre pasture
- If it cost \$1.00/ day to feed: Save **\$29/head**
- If AUM priced at \$20/animal unit month: Value would be **at least \$19/head**

Avg.Calf Income / Cow Exposed

Calving season starts Weaning time	March 15 late Oct.	March 15 mid Sept.	May 1 late Oct.
1997-2000	\$429	\$384	\$399

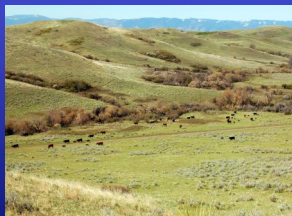
Pruitt, 2001

What is Value of Condition Score

- If cows are fleshy in the fall, likely little benefit to added condition of early weaning
- If cows are thin, added condition:
 - Allow you to not feed as heavily
 - Extend the grazing season
 - Improve subsequent pregnancy rates

Padlock Weaning

- Calve in May/June
- Weaning takes about 6 weeks
- Typically Wean Oct-Dec (100-180 days of age)
- Opportunity for added condition is earlier Fall



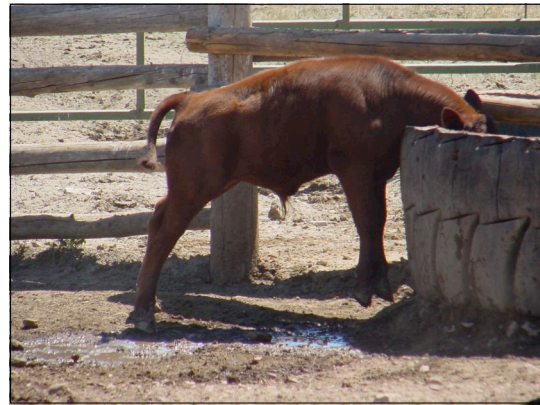
Backgrounding Rations for Calves

Ingredient	Ration		
	48D	48W	48W-2
Grass/Alf Hay	37.3	33.0	29.7
Corn Silage		10.0	20.0
Wheat Midds	25.0	23.0	20.0
Cr. Corn	26.7	24.5	27.8
Molasses	8.5	7.0	
Suppl.	2.5	2.5	2.5
Nutrient			
DM, % AF	84.8	79.0	73.8
CP, % DM	14.5	14.3	14.0
NEg, Mcal/cwt	48.0	48.0	48.0

Padlock



- Since we retain ownership, we would like calves as heavy as possible
- We use weaning to manage body condition score and available feed



Weaning is a business decision

- Based on cow condition
- Cow age
- Forage availability
- Markets (calf, culls, and feed)

Key Points

- Weaning calves earlier than normal is a great tool to manage grass and body condition score
- **There can be 0.5-1.0 difference in body condition score between Aug and Nov weaned calves**
- Milk production and forage play an important role

Key Points

- Early-weaned calf performance is good in the feedlot
- If you have a marketable size animal to sell, returns at early weaning may not be less than November weaning
- If you retain ownership on calves, it depends on forage availability, cow condition, and feed costs

