

Feeding Options



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Strategies

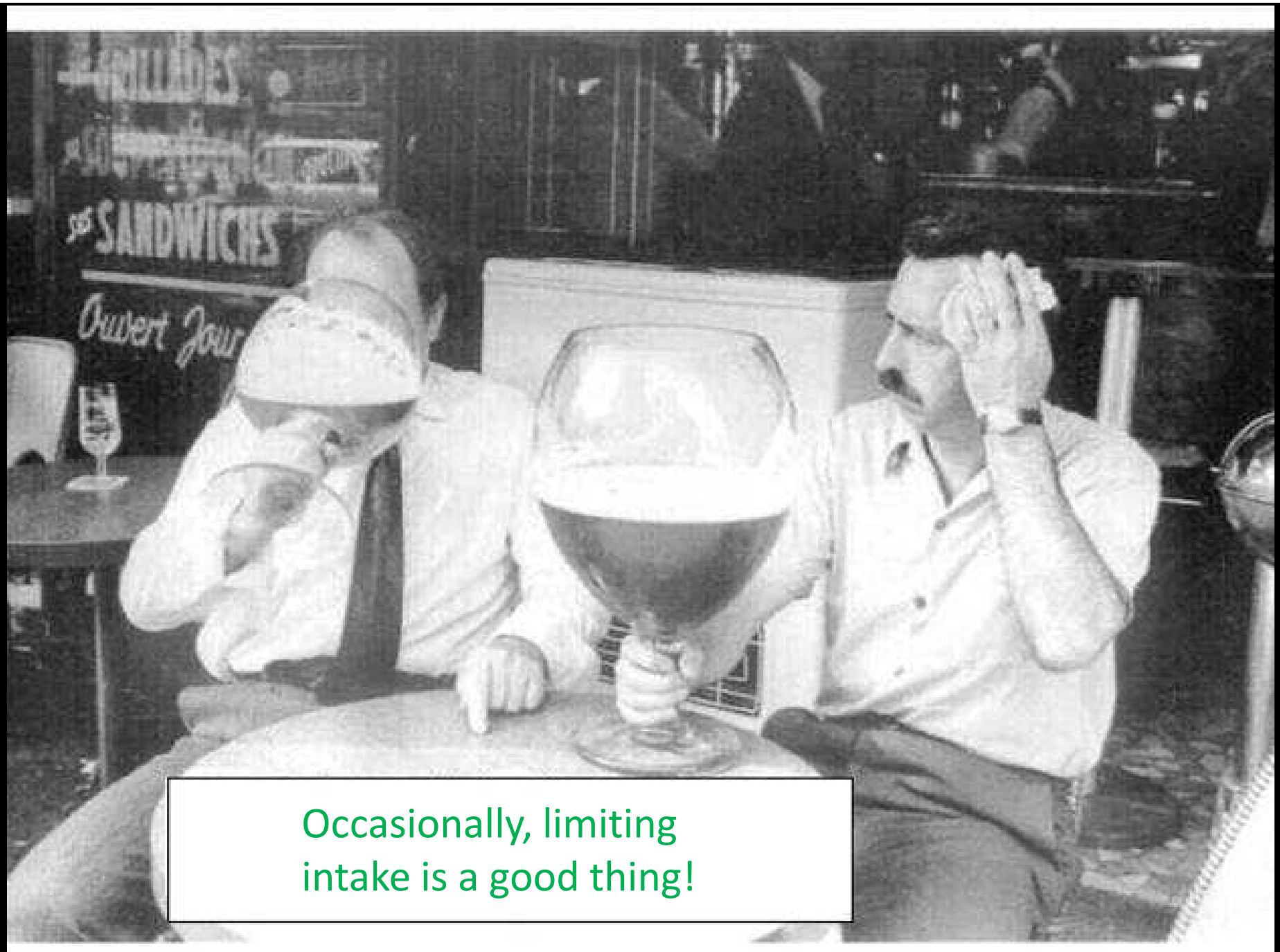
- Culling
- Early Weaning
- Limit feeding concentrate instead of hay
- Limit feeding hay instead of free-choice
- Using better hay feeders
- Use an ionophore (feed additive)
- Ammoniating low quality roughage

Early Weaning



Limit Feeding Concentrate





Occasionally, limiting
intake is a good thing!

Limit Feeding Cows

- Viable option due to feed costs?
- Reduce forage intake by 70%-80% by limit feeding higher levels of grain
 - .5% BW hay/day
- See OSU F-3028 for details

Limit Feeding Cows - What would it cost?

- 1200 lb cow example:
 - 9 lbs corn @ \$0.125/lb = \$1.13
 - 2 lbs protein supp @ \$0.15/lb = \$0.30
 - 6 lbs hay @ \$0.075/lb = \$0.45
 - **Total cost per day = \$1.88**

(Mineral supplementation not included in estimate)

Limit Feeding Hay



Strategies

Reduce hay intake = reduce waste and increase digestibility

- Roll out : feed predetermined amount
- Limit access to bales

Limiting Access to Hay Minnesota

Item	Access Time per Day			
	6 hr	14 hr	24 hr	P
Hay DM intake, lb	21.2	24.4	27.4	< 0.01
Cow BW change, lb	27.3	36.5	51.2	> 0.10
Jaderborg et al., 2011 University of Minnesota				

Limiting Access to Hay

Illinois Exp 1

Item	Access Time per Day			
	6 hr	9 hr	24 hr	P
Hay DM intake, lb	24.5	29.3	34.2	< 0.01
Cow BW change, lb	161	192	207	0.03
Miller et al., 2007 University of Illinois				

Limiting Access to Hay

Illinois Exp 2

Item	Access Time per Day			
	6 hr	9 hr	24 hr	P
Hay DM intake, lb	23.6	24.7	28.4	< 0.01
Cow BW change, lb	141	159	168	0.12
Miller et al., 2007 University of Illinois				

Using Better Hay Feeders



Effects of Bale Feeder Type and Supplementation of Monensin on Hay Waste, Intake, and Performance of Beef Cattle

A. J. Sexten, C. P. McMurphy, G. L. Mourer, C. D.
Dobbs, M. A. Brown, C. J. Richards, and D. L.
Lalman

Objectives

- Determine the effects of popular feeder types and supplementation of Rumensin on:
 - Hay waste
 - Hay Intake
 - Animal performance



Materials and Methods

- Supplementation
- 1.36 kg/ hd daily
- 33 % CP CSM based pellet
- Treatments
 - Control (C) = 0 mg monensin
 - Monensin (M) = 200 mg monensin (Rumensin 90; Elanco Animal Health, Greenfield, IN.)

Materials and Methods

Feeder Treatments

- Modified Cone (MCONE)
- \$525.00
- 300 lb
- Metal apron
- 9 feeding stations



Materials and Methods

Feeder Treatments

- Open bottom steel ring (OBSR)
- \$100.00
- 100 lb
- Open bottom
- 6 Feeding stations



Materials and Methods

Feeder Treatments

- Polyethylene Pipe (POLY)
- \$209.00
- 100 lb
- Open bottom
- 6 Feeding stations



Materials and Methods

Feeder Treatments

- Sheeted bottom steel ring (RING)
- \$300.00
- 222 lb
- Metal apron
- 16 feeding stations



Materials and Methods

Bale Weight



Sample Collection



Results



Effect of Feeder Design on Waste

Item	Feeder				SEM	P-value
	MCONE	OBSR	POLY	RING		
Total waste, lb	71 ^a	283 ^b	294 ^b	170 ^c	22	< 0.01
Waste, % bale wt	5.3 ^a	20.5 ^b	21.0 ^b	13.0 ^c	1.6	< 0.01

^{a,b,c}Means within a row with uncommon superscript differ (P < 0.05)



MCONE

$$h = 0$$



MCONE

$h = 48$



MCONE

$h = 72$



MCONE

$h = 96$



OBSR

$h = 0$



OBSR

$h = 24$



OBSR

$h = 96$



POLY

$h = 0$



POLY

$h = 24$



POLY

$h = 72$



RING

$h = 0$



RING

$h = 48$



RING

$h = 72$

Dry Matter Intake

Item	Feeder				SEM	P-value
	BEXT	OBSR	POLY	RING		
DMI, % BW	1.70	1.67	1.72	1.78	0.05	0.12

Item	Supplement		SEM	P-value
	Con	Rum		
DMI, % BW	1.69	1.75	0.06	0.45

Effect of Ionophore on Cow Performance

Item	Supplement		SEM	P-value
	Con	Rum		
Initial wt, lb	1083	1091	21	0.79
Initial BCS	5.15	5.21	0.10	0.70
Change in wt	35	65	10	0.04
Change in BCS	0.13	0.57	0.12	0.01
ADG, lb/d	0.62	1.12	.18	0.04

Apparent Digestibility

Item	Supplement		SEM	P-value
	Con	Rum		
Digestibility, %				
DM	53	58	1.4	0.03
OM	56	60	1.4	0.03
NDF	56	61	1.2	< 0.01
ADF	44	51	1.8	0.01
CP	51	55	1.6	0.08

How much does wasted hay really cost?

Cost/ ton, \$	Treatments			
	MCO	OBSR	POLY	RING
	\$ Wasted/ feeding period*			
40	57.19	213.43	221.04	130.63
50	71.49	266.79	276.30	163.29
60	85.78	320.14	331.56	195.94
70	100.08	373.50	386.82	228.60
80	114.38	426.86	442.08	261.26
90	128.67	480.21	497.34	293.91
100	142.97	533.57	552.60	326.57
110	157.27	586.93	607.86	359.23
120	171.57	640.29	663.12	391.89

* Assuming 120 d Feeding period, 1500 lb avg. Bale wt., feeding 2 bales/wk

Early Weaning Calves

- Wean at 45+ day of age
- Feed calves for a short period then sell –or–
- Program feed (limit feeding)
 - Very efficient, good gains
 - Feed costs ???
- OSU FS 3264 *Early Weaning for the Beef Herd*

Early Weaning

- Lactating cows require approx. 2X energy than dry COW
- Wean at 6-8 weeks of age
 - over 40 days old don't need milk replacer
- Introduce calves to feed prior to weaning
- 1st two weeks most critical for calves
- Check with veterinarian for vaccination recommendations

Early Weaning

(or when all else fails)

- Small pens with good access to water and feed
- Don't move calves from ranch
- Palatable complete ration
 - High in protein and energy
 - Include ionophore or coccidiostat
 - Sample rations are in OSU Fact Sheet

Early Weaning Calves

- Cows consume 15-20% less forage when no longer lactating
- Cows will maintain body condition and re-breed easier

Conclusions

- Fall / Winter feeding efficiency CAN be improved!
- It will require more skilled management
- Combining two or more of these strategies could reduce winter feed costs by 15 to 30%!