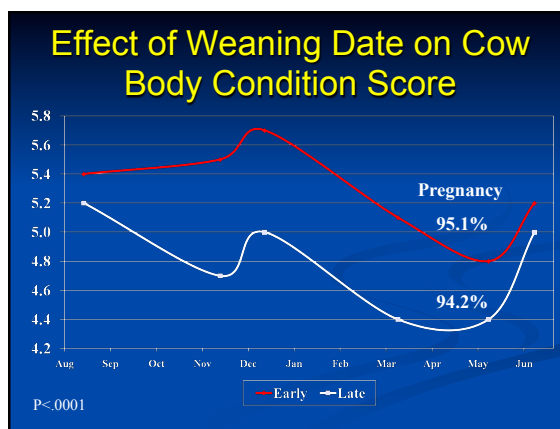


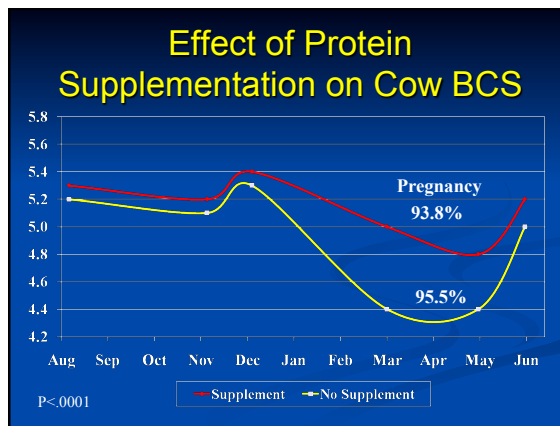
- ### Weaning and Supplement Treatments for March Calving Cows
- August weaning**
1. No protein supplement during winter grazing
 2. Protein supplement during winter grazing
- November weaning**
1. No protein supplement during winter grazing
 2. Protein supplement during winter grazing



Winter Supplementation

Net Energy (NE) Requirement for a 1200 lb March Calfing Cow with 23 Lbs/day Peak Milk Production

Crude protein in cattle diets on Sandhills range



No Protein Supplement

November Wean

August Wean

Protein Supplement

NOV Wean, Winter Supplement

NOV Wean, NO Winter Supplement


August November
432 518

Calf Weaning Weight, lb

Protein No Protein
397 382

Calf Weaning Weight, lb

Steer Feedlot Performance




	AUG WEAN SUPP	AUG WEAN NO SUPP	NOV WEAN SUPP	NOV WEAN NO SUPP
Out wt, lb	1,276	1,254	1,310	1,204
ADG, lb	3.4	3.4	4.0	3.7
HCW, lb	796	780	814	747

Costs and Net Revenues After Finishing


	August Wean Supp.	Wean No Supp.	November Wean Supp.	Wean No Supp.
Costs, \$/hd				
Calf	471	449	474	451
Feed	326	301	269	249
Yardage	74	74	59	59
Trucking	2	2	3	3
Processing	25	25	25	25
Total Cost	898	851	830	787
Revenue, \$/hd				
Steer	872	858	877	810
Net/cow exp	-9	3	22	11

Winter

No Protein Supplement




Protein Supplement




Spring

Meadow



Hay



Objectives

Determine if supplemental protein during late gestation or early lactation plane of nutrition of cows influences future growth or reproductive performance of their heifer calves.

N

Materials & Methods

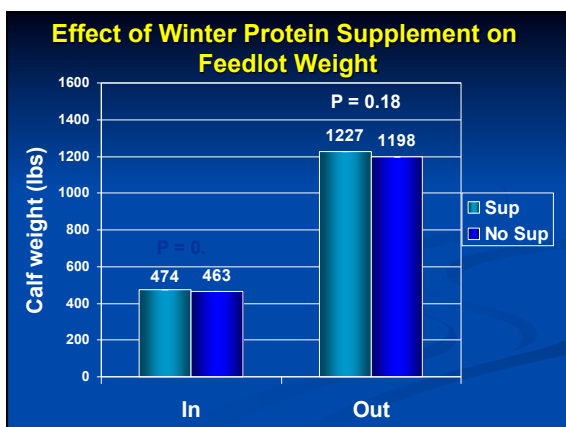
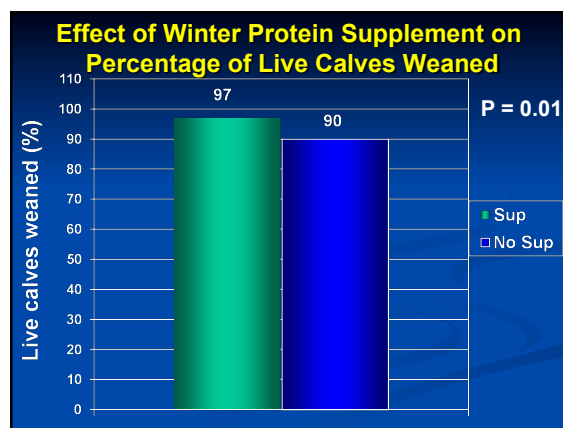
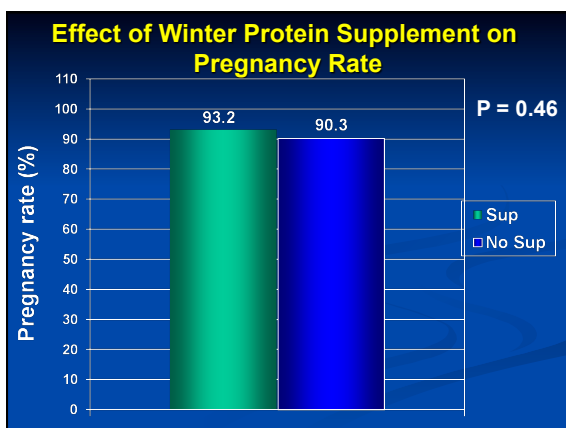
- Gudmundsen Sandhills Laboratory, Whitman, NE
- Red Angus x Simmental Cows
 - 3 to 5 yr of age
 - Calving season March 1 to April 20
- Natural service breeding

N

Materials & Methods Supplementation

- Treatments applied to dam
 - Last trimester of gestation:
 - 1 lb/d of 42% CP cake delivered 3 times per week
 - No supplement
 - Early lactation
 - Dams grazed meadow or fed meadow hay after calving
- No further treatment applied to heifers

N



Heifer data

- Protein supplementation of spring-calving cows grazing dormant Sandhills range:
 - Increases adj. 205 d wt
 - Differences maintained through 2 yr of age
 - Increased first service conception rate, overall pregnancy rate, and greater proportion calved in initial 21 d of calving
 - No difference age at puberty, cycling before breeding season
 - No difference in gain:feed
 - Interaction for RFI *Martin et al., 2007*

Effect of Prepartum Nutrition on Heifer Development

3-yr	No Supplement	Supplement
BW	77	79
WW	455	469
ADJ 205d Wt	480	499
Preg Check Wt	851	882

Pregnancy and Calving Data

3- yr	No Supplement	Supplement
Age at Puberty	334	339
Cycling (%)	67	61
Calved 1 st 21 d (%)	49	77
Final Preg, %	80	93
Calving Date	75	71

Effects of winter grazing system and supplementation on beef cow and progeny performance

R. N. Funston , J. L. Martin, D. C. Adams,
and D.M. Larson



Corn crop residue provides a reasonably priced alternative to grazing dormant winter range



Objectives

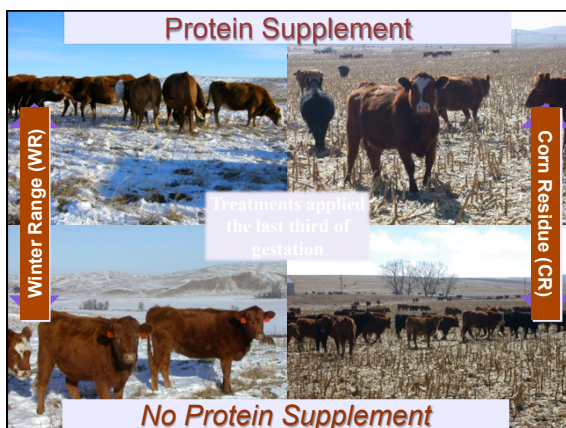
- Determine if supplementing beef cows grazing range or corn residue during the last third of gestation affects cow or progeny performance.

N

Materials & Methods

- Completely randomized design
- 2 x 2 Factorial treatment arrangement
- Treatments applied only to dam
 - Winter grazing mid-Nov. to mid-Feb:
 - WR – winter range
 - CR – corn crop residue
 - Last trimester of gestation:
 - PS - 0.45 kg/d of 28% CP cake
 - NS - No supplement

N



Materials & Methods Cow Management

- Gudmundsen Sandhills Laboratory, Whitman, NE (GSL)
- **n = 342, 3rd yr in progress**
 - 5/8 Red Angus, 3/8 Simmental cows
 - 3 to 5 yr of age at beginning of trial
 - Within age group, stratified by previous calf WW
 - Remain on treatment throughout experiment
 - Numbers maintained by adding 3 yr old cows each fall
- Natural service breeding
 - Calving season begins March 1

Supplement Composition DM Basis

Dried distillers grains	62.0
Wheat middlings	10.6
Cottonseed meal	9.0
Dried corn gluten feed	5.0
Cane molasses	3.0
Calcium Carbonate	3.0
Urea	2.1
VTM, binder, etc.	5.4
Monensin, mg/kg	178

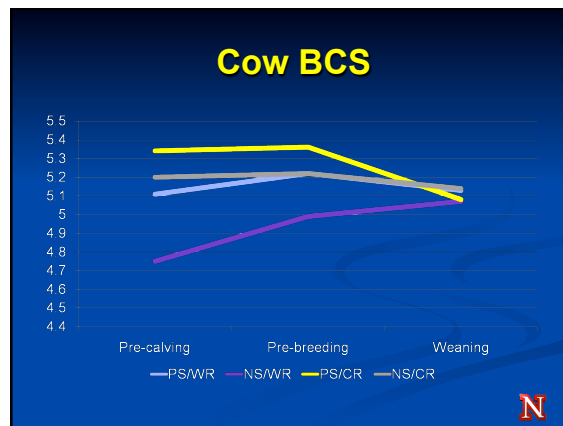
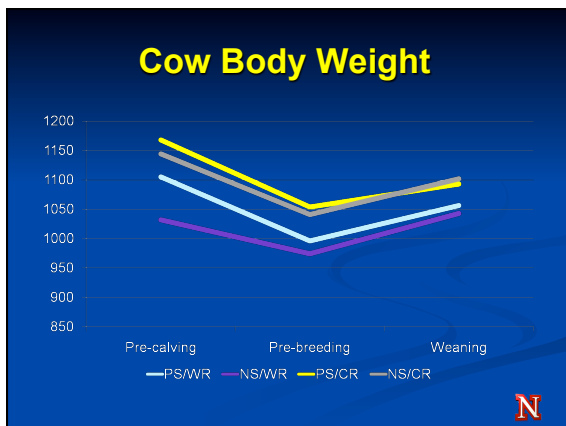
Materials & Methods Steer Progeny

- **n = 172**
 - Weaned at GSL
 - Transported to West Central Research & Extension Center, North Platte, NE (WCREC) feedlot 10 d later
 - 221 DOF

Materials & Methods Heifer Progeny

- **n = 164**
 - 3 yr reproductive data
 - 3 yr growth, FE data
- Weaned at GSL
 - Transported to WCREC 10 d later
 - Wintered in drylot
 - Heifers from WR cows individually fed
 - Heifers from CR cows pen fed
- Age and weight at puberty determined
- Transported back to GSL

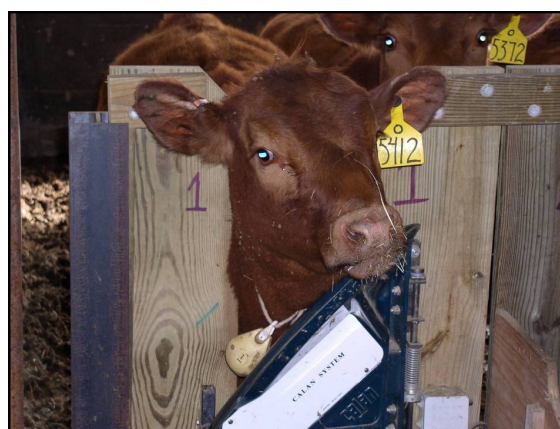
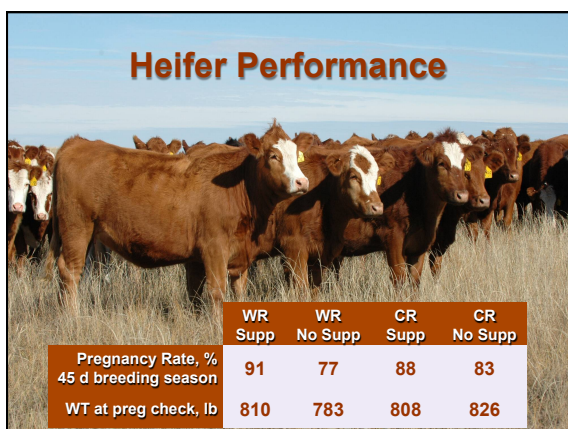
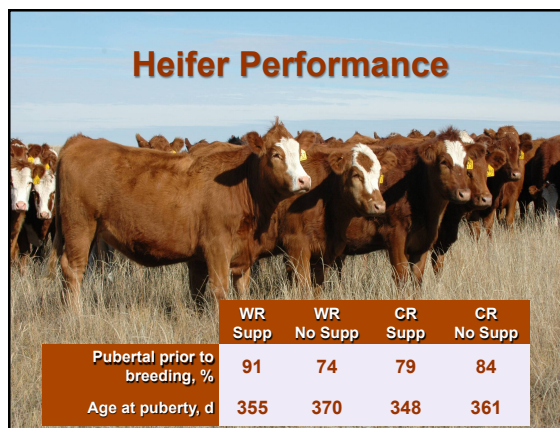
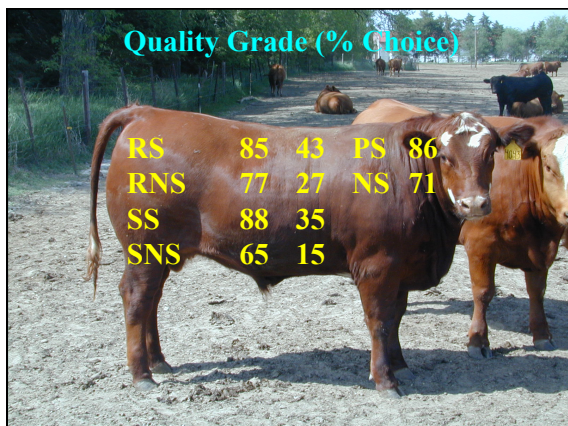




Cow Performance

	Treatment				P-value		
	PS/WR	NS/WR	PS/CR	NS/CR	Sys	Sup	S*S
Cow Weaning BW, lb	1058	1045	1096	1105	<0.001	0.74	0.23
Cow Weaning BCS	5.1	5.0	5.1	5.1	0.54	0.44	0.18
Pregnancy Rate, %	96	94	98	95	0.46	0.20	0.95
Calved 1 st 21 d	83 ^a	62 ^b	78 ^a	80 ^a	0.20	0.07	0.03





Heifer Performance

	Treatment				P-value		
	PS/ WR	NS/ WR	PS/ CR	NS/ CR	Sys	Sup	S*S
ADG	1.85 ^a	1.81 ^a	1.54 ^b	1.79 ^a	0.02	0.14	0.02
DMI	16.5	17.0	15.9	16.3	0.74	0.95	0.16
Gain:Feed	0.113 ^a	0.112 ^a	0.09 ^b	0.108 ^a	<0.01	0.03	0.02
RFI, kg/d	-0.10	-0.06	0.03	0.21	0.19	0.40	0.61

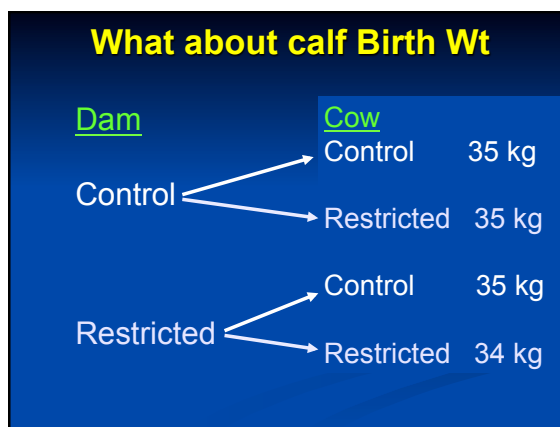
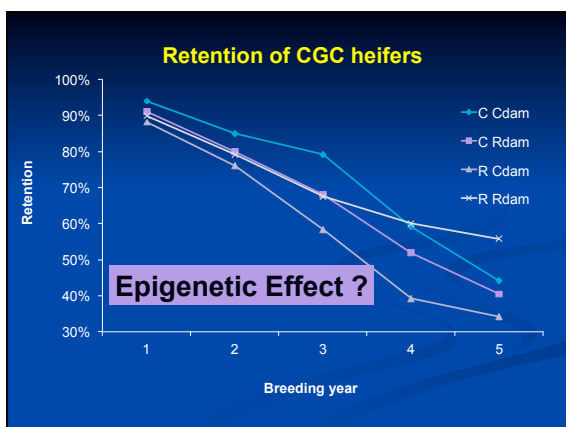
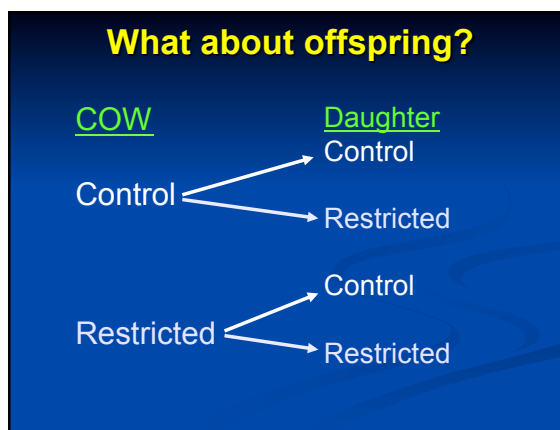
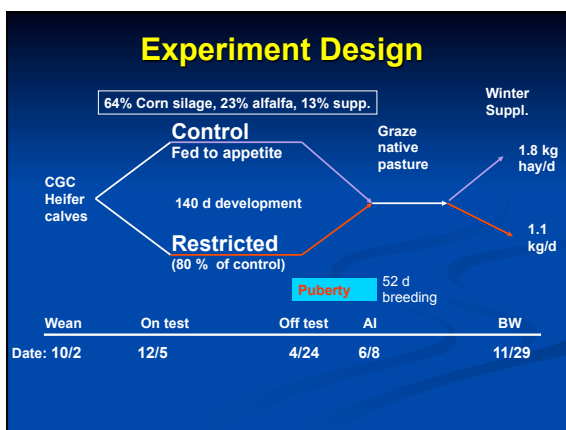
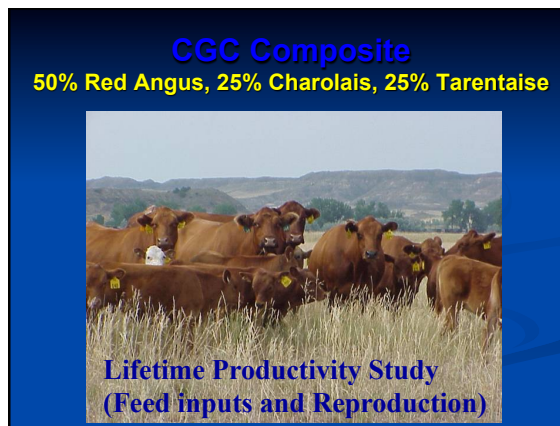
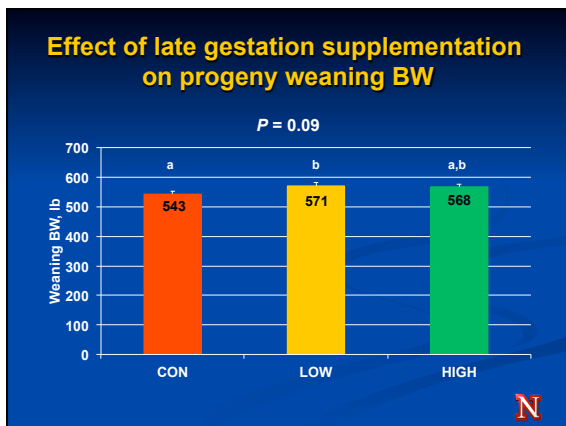
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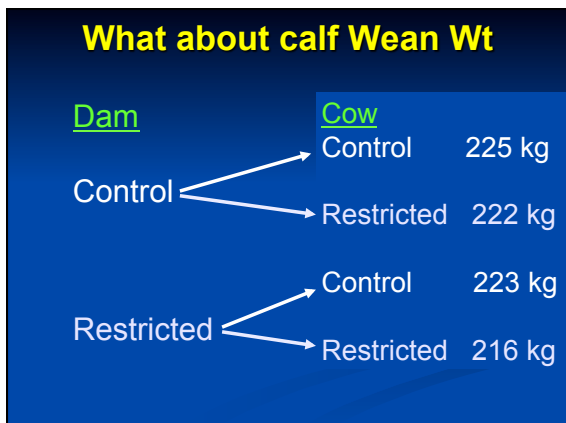
- ### Conclusions
- **Grazing CR**
 - **Cow performance**
 - Increased BW, BCS pre-calving
 - Increased calf birth weight
 - Increased BW, BCS pre-breeding
 - No affect on milk production
 - Increased cow BW at weaning
 - No effect on pregnancy rate
- N**

- ### Conclusions
- **Protein Supplementation**
 - **For cows grazing WR**
 - Increased BW, BCS pre-calving
 - 7 d earlier calving date
 - 21 % more calving in 1st 21 d
 - Increased calf weaning BW and adj. 205 d BW
- N**

- ### Conclusions
- **Protein Supplementation vs NS**
 - Decreased post weaning sickness
 - Improved Quality grade in both systems
 - Increased % pubertal before breeding
 - Increased pre breeding BW for WR
 - Improved pregnancy rates
 - Decreased feed efficiency in heifer progeny
- N**







Restricted Heifer Development

- Improved efficiency
- Reduced feed/pregnant heifer
- Improved longevity?

N

Replacements from Restricted Cows

- Improved longevity (↑ 5 & older)
- Improve drought resistance?
- Matching genotype with environment (↓ Milk?)

N



