



Winter Feeding Management

Marcy Ward, PhD
Extension Livestock Specialist

Fall is time for winter feed planning



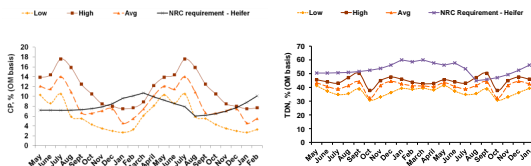
- ✓ What's in the forage going into winter?
- ✓ What are you feeding?
- ✓ What does the cow need?
 - ✓ What is your calving season?
 - ✓ What is your cows' body condition at weaning?
- ✓ What are your resources?
 - ✓ Feeding preference/availability
 - ✓ Hay, cubes, tubs, liquids,
 - ✓ Equipment?

What's in the forage and how much do you have?

- Send grass clippings off to be analyzed.
 - Example; Servi-tech labs
- Implementing a range monitoring system in your annual plan will help establish tracking quality and quantity of forage.

| Feed Analysis Results | As Received | 100% Dry Matter |
|-----------------------------------|-------------|-----------------|
| Moisture, % | 29.0 | |
| Dry Matter, % | 81.0 | |
| Crude Protein, % | 8.4 | 10.8 |
| Acid Detergent Fiber, % ADF | 14.4 | 20.7 |
| Total Digestible Nutrients, % TDN | 42.3 | 50.2 |

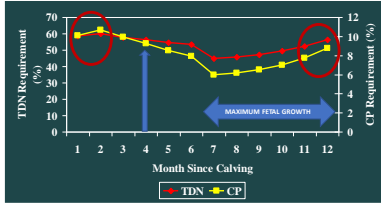
Decisions should be made on protein in forages



What a cow needs

| Priority | Function |
|----------|-----------------|
| 1 | Maintenance |
| 2 | Growth |
| 3 | Milk Production |
| 4 | Reproduction |

Effect of Stage of Production on Nutrient Requirements of Beef Cows



Cow Body Condition

- Quickest assessment of nutritional status
- BCS at Calving is critical
- Want to be at least a 5 (on a scale of 1-9) at calving
- Thin cows have higher requirements



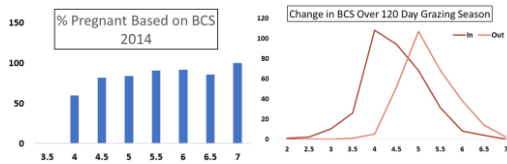
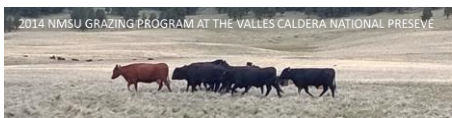
Effect of BCS on Postpartum Interval and Conception Rates

| BCS @ Calving | Post Partum Interval (d) | Conception Rate (%) |
|---------------|--------------------------|---------------------|
| 3 | 89 | 70 |
| 4 | 70 | 80 |
| 5 | 59 | 94 |
| 6 | 52 | 100 |
| 7 | 31 | 100 |

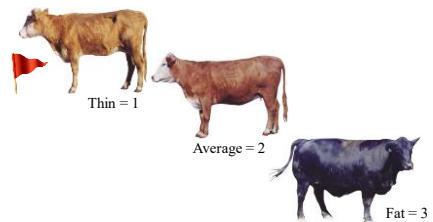


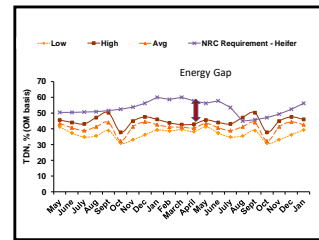
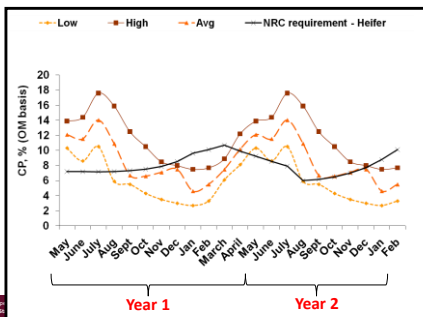
Houghton et al., 1990

The New Mexico Cow...



Body Condition Scoring is the Best Method for Monitoring Nutritional Status of the Cow





- If forage is abundant the "Energy Gap" is not an issue. The cow can eat enough to make up the difference.
- In drought, she physically cannot eat enough to meet her nutritional needs.
- Will first give up production (reproduction, milk, growth)
- Will next lose fat and muscle to compensate

Now what?

- ✓ How good is the forage
- ✓ What kind of shape the cows are in

What to feed, how much to feed, and what could it cost?

Supplementation

| | Alfalfa (18%) | Grass Hay | 20% Cube | 32% Cube | 30% Protein Tub |
|--------------|---------------|-----------|----------|----------|-----------------|
| Lbs needed/h | 3.25 | 5 | 3 | 2.5 | 1.0 |
| Supp \$/h/d | .40 | .45 | .60 | .75 | .50 |
| Overhead | .45 | .45 | .35 | .35 | .20 |
| \$/h/d | .85 | .90 | .95 | 1.10 | .70 |

* Alf = \$300/T, Grass = \$250/T, Cubes at \$600 +\$800/T, \$150.00/tub respectively

*Overhead = fuel charge, labor, and feed loss

*Added fat supplements can help maintain, or improve body condition without feeding more pounds.

Scenario 1

- Cows were 3.5 BCS at weaning
- Goal = 1 BSC, or 4.5 at calving
- Need 75 lbs gain to achieve goal
- Forage 4% CP, 48% energy
- How much do I feed and what will it cost?

Beef Cow Nutrition 101



- Peak intake needs = 2.1% BW (1100lb cow)
 - 23lbs of intake daily
 - If cows are thin, need to increase intake/nutrition by 10 to 15%
- 1.75 lbs of protein
- 11.5 lbs of TDN

NUTRIENT DENSITY OF THE DIET (%) = HOW MUCH SHE NEEDS TO EAT

Beef Cow Nutrition 101 – Scenario 1



| NEEDS | Forage Supply | Difference |
|---------------------|---------------|-------------|
| 2.0 lbs protein | 0.92 lbs | 1.08 |
| 13 lbs energy (TDN) | 11.04 lbs | 1.96 |

NUTRIENT DENSITY OF THE DIET (%) = HOW MUCH SHE NEEDS TO EAT

Scenario 1 - Supplementation

| | Alfalfa (18%) | Grass Hay | 20% Cube | 32% Cube | 30% Protein Tub |
|--------------|---------------|-----------|----------|----------|-----------------|
| Lbs needed/h | 6 | 10 | 5.4 | 3.4 | 3.6 |
| Supp \$/h/d | .90 | 1.25 | 1.62 | 1.36 | 2.70 |
| Overhead | .60 | .60 | .45 | .45 | .25 |
| \$/h/d | 1.50 | 1.85 | 2.07 | 1.81 | 2.95 |

*Alf = \$300/T, Grass = \$250/T, Cubes at \$600 +\$800/T, \$150.00/tub respectively
 *Overhead = fuel charge, labor, and feed loss

*Added fat supplements can help maintain, or improve body condition without feeding more pounds.



Scenario 2

- Cows were 4.5 BCS at weaning
- Goal = 4.5 at calving
- Forage 4% CP, 48% energy
- How much do I feed and what will it cost?

Beef Cow Nutrition 101 – Scenario 2



| NEEDS | Forage Supply | Difference |
|-----------------------|---------------|-------------|
| 1.75 lbs protein | 0.92 lbs | 0.83 |
| 11.5 lbs energy (TDN) | 11.04 lbs | 0.46 |

NUTRIENT DENSITY OF THE DIET (%) = HOW MUCH SHE NEEDS TO EAT



Scenario 2 - Supplementation

| | Alfalfa (18%) | Grass Hay | 20% Cube | 32% Cube | 30% Protein Tub |
|--------------|---------------|-----------|----------|----------|-----------------|
| Lbs needed/h | 4.6 | 8.3 | 4.2 | 2.60 | 2.77 |
| Supp \$/h/d | .69 | 1.04 | 1.26 | 1.04 | 2.08 |
| Overhead | .60 | .60 | .45 | .45 | .25 |
| \$/h/d | 1.29 | 1.64 | 1.71 | 1.49 | 2.33 |

*Alf = \$300/T, Grass = \$250/T, Cubes at \$600 +\$800/T, \$150.00/tub respectively
 *Overhead = fuel charge, labor, and feed loss

*Added fat supplements can help maintain, or improve body condition without feeding more pounds.



Scenario 1

- To Gain 75 lbs + pregnancy
- Cost over 4 months/cow
 - \$180.00 - \$357.60

Scenario 2

- No additional gain (other than pregnancy)
- Cost over 4 months/cow
 - \$154.80 - \$279.60

TAKE HOME MESSAGE:

Maintaining good condition in cows is cheaper than having to gain the weight back



WHAT DO I FEED?



- **Not all feeds are created equal**
- All have benefits
- All have liabilities

WHAT DO I FEED?



- **Corn**
- Benefits
 - High Energy
 - Low Cost
- Liabilities
 - Low Protein
 - Should be processed (rolled/cracked)
 - Reduces Forage Use

WHAT DO I FEED?



- **Dried Distillers Grain**
- Benefits
 - High Energy/Low Starch
 - High Protein (28%)
 - Low Cost
- Liabilities
 - Access?
 - High Sulfur content

WHAT DO I FEED?



- **Protein Cubes**
- Benefits
 - Protein Flexibility (20-32%)
 - Energy Flexibility
- Liabilities
 - Cost
 - Overhead(labor/fuel/equipment)

WHAT DO I FEED?



- **Protein Tubs**
- Benefits
 - Protein Flexibility (20-32%)
 - Energy Flexibility
 - Pasture Management
- Liabilities
 - Cost
 - Uneven consumption across herd

Nutrition Options

| Specs | Supplement | ByProduct |
|------------|------------|--------------|
| Protein* | 28-32% | 28-33% |
| Fat | 5%+ | 6% |
| Mineral/d* | 4-7oz | Free choice* |

MONITOR INTAKE!

32% RANGE CUBES
RANGE CUBES
GUARANTEED ANALYSIS
 Crude Protein, not less than 32.00%
 Crude Fat, not less than 2.25%
 Crude Fiber, not more than 12.00%
 Calcium, not less than 1.10%
 Calcium, not more than 3.20%
 Phosphorus, not less than 1.00%
 Salt, not less than 0.80%
 Salt, not more than 0.80%
 Potassium, not less than 0.80%
 Vitamin A, not less than 20,000 IU/lb.
INGREDIENTS: Plant protein (soyabean, processed grain by products, cane molasses), calcium carbonate, dicalcium phosphate, calcium phosphate, salt, vitamin A supplement, manganese sulfate, zinc sulfate, copper sulfate, ethylenediamine dihydrochloride, cobalt sulfate, seleniphenanthrene and selenomethionine.
FEEDING DIRECTIONS: Feed 32% RANGE CUBES to cattle on adequate pasture.
ADDED NOTE: 32% RANGE CUBES can be fed on 2 and 3 day intervals. For example, rather than feeding 1 lb every 14th day, an alternative would be to feed 1 lb every 14th day every 2nd day or 14th day every 3rd day.

| Nutrient | Dried Distillers Grain |
|---------------|------------------------|
| Crude Protein | 23-28 |
| Crude Fat | 5-6 |
| Crude Fiber | 12.0 |
| Calcium | .11 |
| Phosphorus | .43 |
| Salt | .10 |
| Potassium | .18 |
| Vitamin A | 3000 |

Pressed blocks...

| | | |
|---|------------------|------------------|
| Crude protein, not less than (This includes not more than the following % equivalent crude protein from non-protein nitrogen sources) | 25.00 % | 35.00 % |
| Crude protein source from Blazer | 12.00 % | 17.50 % |
| Crude protein source from Urea | 7.50 % | 9.50 % |
| Crude fat, not less than | 5.00 % | 4.00 % |
| Crude fiber, not more than | 2.00 % | 2.00 % |
| Calcium (Ca), not less than | 1.75 % | 1.50 % |
| Calcium (Ca), not more than | 2.25 % | 2.00 % |
| Phosphorus (P), not less than | 1.50 % | 1.50 % |
| Salt (NaCl), not less than | 1.75 % | 1.00 % |
| Salt (NaCl), not more than | 2.25 % | 1.50 % |
| Sodium (Na), not less than | 1.75 % | 1.00 % |
| Sodium (Na), not more than | 2.25 % | 1.50 % |
| Protein (N), not less than | 2.50 % | 2.50 % |
| Magnesium (Mg), not less than | 0.50 % | 1.50 % |
| Vitamin A, not less than | 50,000 IU/lb | 50,000 IU/lb |
| Vitamin E, not less than | 100 IU/lb | 100 IU/lb |
| Recommended consumption | 0.5 - 1.3 Bhd/kg | 0.5 - 1.3 Bhd/kg |



Advantages and Disadvantages in Feeding Methods

| Method | Advantages | Disadvantages |
|--------------|--|---|
| Hays | More economical Better rumen health | Waste (up to 20%) Equipment/Labor Feed area |
| Hand Feeding | Regulate intake Monitor cattle | Overhead/Labor Cost Feed area |
| Self Feeding | Less overhead Pasture distribution | Can't regulate intake Less cattle monitoring |

In Summary...

- ✓ Establish supplementation plan based on stage of production and condition of cows and pastures.
- ✓ Implement a regular range monitoring program along with testing forage for quality every fall.



In Summary...



- ✓ More expensive to have to put weight on cows than maintain.
- ✓ Timing of supplementation is as important as what your supplement with for successful reproduction and calf health.
- ✓ How you feed is as important as what you feed.



Thank You!

Marcy Ward, PhD
 NKSU - Livestock Extension Specialist
 marward@nmsu.edu
 575-644-3379

