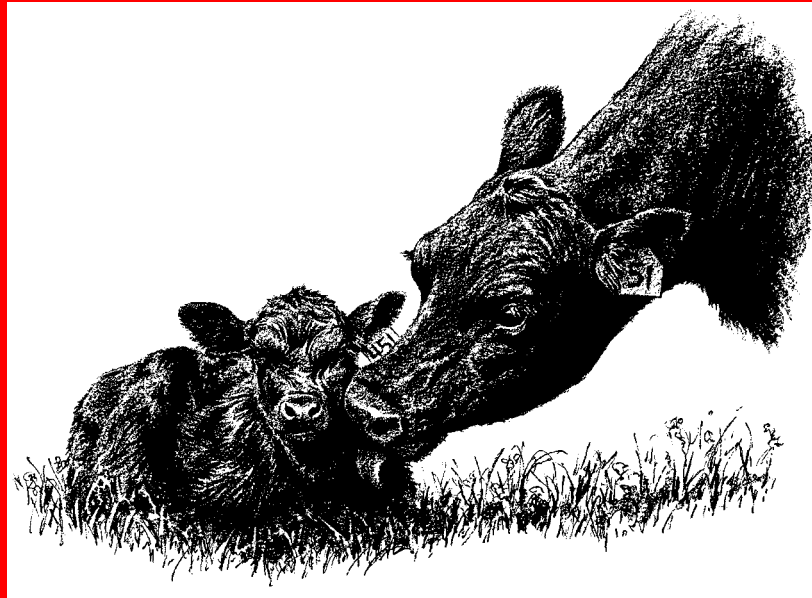


# **Body Condition, Nutrition and Reproduction of Beef Cows**



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# Practical Importance of Body Conditioning Scoring

- Body condition scoring is a subjective measure of the amount of fat in an animal's body.
- Body condition influences production in a beef cow herd in three ways:
  - 1) Growth rate of a calf suckling a thin cow is decreased.
  - 2) Pregnancy rate in thin cows is lowered.
  - 3) Thin cows become pregnant later in the breeding season and thus calve later in the following year.

# Important Factors to Know

- The main factors determining the pounds-of-calf-weaned in a beef herd are **growth rate of the calf**, the **proportion of cows pregnant** and the **calving patterns of the cow herd**.
- Producers working with beef cows should:
  - 1) Know how to estimate body condition
  - 2) Understand the influence body condition has on production.
  - 3) Know how and when to change body condition.
  - 4) Be able to calculate the costs and returns for changing body condition.

# Determination of Body Condition

- Two methods currently used to determine body condition are:
  - 1) Measurement of covering over the ribs, shoulder and back.
  - 2) Measurement of covering over the short rib and tailhead.
- Both methods appear to be accurate, and the system used is largely a matter of preference.
- The Nebraska System scores cows from 1 (thin) through 9 (fat) and the Scottish System from 1 (thin) to 5 (fat).

# **Description of Two Systems for Body Condition Scoring**

| <b><u>Group</u></b>              | <b><u>Nebraska</u></b> | <b><u>Scottish</u></b> | <b><u>Description</u></b>                                 |
|----------------------------------|------------------------|------------------------|---|
| <b><u>THIN<br/>CONDITION</u></b> | 1                      | 0.5                    | <b>Poor</b> -No palpable fat over along backbone or ribs. |
|                                  | 2                      | 1                      | <b>Very thin</b>  |

- 1.....**emaciated**
- 2.....**very thin**
- 3.....**thin**
- 4.....**borderline**
- 5.....**moderate**
- 6.....**good**
- 7.....**fleshy**
- 8.....**fat**
- 9.....**extremely fat**

# **Factors That Influence Nutritional Requirements**

- Stage of Production
- Cow Size and Milk Production
- Age
- Body Condition
- Environment

# Pregnancy Rate and Post-Partum Estrus

- Studies have shown a decrease in pregnancy rates in thin cows
- Cows that were grazed on similar pastures during a 120-day breeding season varied in pregnancy rate from 23% for body condition score '2' to a 95% pregnancy rate for body condition score '7'
- Other studies have shown similar results with the difference ranging from 10% to 20% less in pregnancy rates for cows with body condition score of '4' or less.
- The reason the pregnancy rate is lowered is cows that are in thin condition have a delay in the onset of estrus.



# Body condition and pregnancy rate in a group of cows in Florida

## BODY CONDITION NEAR CALVING

|                            | 2<br>very thin | 3<br>thin | 4<br>borderline | 5&6<br>moderate | 7<br>good |
|----------------------------|----------------|-----------|-----------------|-----------------|-----------|
| No. Of Cows Pregnant       | 115            | 545       | 564             | 344             | 234       |
| After Breeding 60 days (%) | 5              | 15        | 19              | 40              | 56        |
| 120 days (%)               | 23             | 51        | 73              | 86              | 95        |

# Proportion of cows showing estrus at different times after calving

|                   | Body Condition |                 |             |
|-------------------|----------------|-----------------|-------------|
|                   | 2-3<br>Thin    | 4-6<br>Moderate | 7-8<br>Good |
| No. of Cows       | 272            | 364             | 50          |
| Days post-calving |                |                 |             |
| 30                | 3 <sup>a</sup> | 7               | 13          |
| 40                | 19             | 21              | 31          |
| 50                | 34             | 45              | 42          |
| 60                | 46             | 61              | 91          |
| 70                | 55             | 79              | 96          |
| 80                | 62             | 88              | 98          |
| 90                | 66             | 92              | 100         |

<sup>a</sup> % of cows showing estrus by this time.

# **Condition at calving determines rebreeding rate**



# Post-Calving Nutrition

- It is desirable to maintain cows at a BCS of 5 or more through breeding. Cows less than 5 need to be fed to improve their condition, which is expensive to accomplish while nursing a calf.
- Research shows that moderate condition cows losing weight after calving tended to show estrus sooner after calving than cows gaining weight.

# Post-Calving Nutrition (con't)

- These differences continued until 80 post-calving.
- This information indicated that body condition at calving has more influence on the onset of estrus than feed level post-calving.

# **Growth Rate of the Suckling Calf and Milk Production of the Cow**

- Milk consumption and calf growth rates were lower in thin conditioned heifers than those that were in moderate condition.
- The energy level received post-calving had little influence on milk production or calf growth in heifers.

# **Growth Rate fo the Suckling Calf and Milk Production of the Cow** (con't)

- This data indicates that cows that calve thin will have lower milk production and, consequently, slower calf growth than those calving in moderate or good condition.

# Improving Production by Changing Body Condition

Improvement in body condition will improve the pounds-of-calf-weaned in three ways:

- 1) Calves suckling a cow in moderate or good condition grow faster than calves suckling a thin cow.
- 2) More cows in moderate or good body condition will be pregnant at the end of the breeding season.
- 3) More cows in moderate or good body condition will calve early next year.



# Weight Changes Needed to Change BCS

| CHANGE FROM | TO            | Increase in weight needed (lbs.) |                               | TOTAL | ADG Needed to make Change (lbs.) |                     |                     |                     |
|-------------|---------------|----------------------------------|-------------------------------|-------|----------------------------------|---------------------|---------------------|---------------------|
|             |               | FAT & MUSCLE                     | CALF & MEMBRANES <sup>a</sup> |       | 70 <sub>days</sub>               | 100 <sub>days</sub> | 150 <sub>days</sub> | 200 <sub>days</sub> |
| 2           | 5             |                                  |                               |       |                                  |                     |                     |                     |
|             | Dry Preg. Cow | 241                              | 100                           | 341   | 4.9                              | 3.3                 | 2.2                 | 1.8                 |
|             | Wet Cow       | 241                              | 0                             | 241   | 3.3                              | 2.4                 | 1.6                 | 1.1                 |
| 3           | 5             |                                  |                               |       |                                  |                     |                     |                     |
|             | Dry Preg. Cow | 161                              | 100                           | 261   | 3.8                              | 2.6                 | 1.8                 | 1.3                 |
|             | Wet Cow       | 161                              | 0                             | 161   | 2.2                              | 1.6                 | 1.1                 | .9                  |
| 4           | 5             |                                  |                               |       |                                  |                     |                     |                     |
|             | Dry Preg. Cow | 80                               | 100                           | 180   | 2.6                              | 1.8                 | 1.1                 | .9                  |
|             | Wet Cow       | 80                               | 0                             | 80    | 1.1                              | .8                  | .5                  | .4                  |
| 5           | 5             |                                  |                               |       |                                  |                     |                     |                     |
|             | Dry Preg. Cow | 0                                | 100                           | 100   | 1.3                              | .8                  | .6                  | .4                  |
|             | Wet Cow       | 0                                | 0                             | 0     | 0                                | 0                   | 0                   | 0                   |

<sup>a</sup> Last 100 days of pregnancy.

# What is “GOOD” Body Condition?

