
Body Condition Scoring Beef Cows



Body condition score is an indicator of stored energy reserves



Fat tissue

Protein tissue (muscle and organs)

Body energy stores are reflected primarily in fat composition. However, muscle and organ tissue (protein tissue) weight is also dynamic with energy balance. Said another way, when cows lose weight, they lose a lot of fat and some protein. When they gain weight, they gain a lot of fat and some protein. Protein tissue change is more pronounced at lower body condition scores and fat tissue change is more pronounced at higher body condition scores.

Why is body condition important?

- Close relationship between body condition score (BCS) at calving and first 90 days after calving to
 - Reproductive success
 - Calf immune system
- Current BCS is a result of
 - Balance between recent nutrient supply and recent nutrient requirements
 - Management (grazing management, supplementation program, herd health program, timing of calving, etc.)
 - Match or mismatch of cows genetic potential to the forage and management system



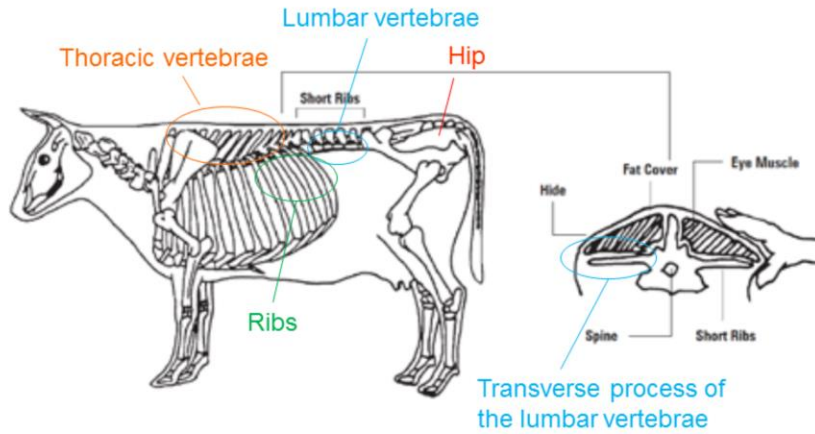
Body Condition Scoring System

- 1 = Emaciated
 - 2 = Extremely thin
 - 3 = Thin
 - 4 = Slightly thin
 - 5 = Moderate
 - 6 = Moderate to "fleshy"
 - 7 = "Fleshy" to fat
 - 8 = Fat
 - 9 = Obese
- } 95%

Approximately **80 lb** from one score to the next



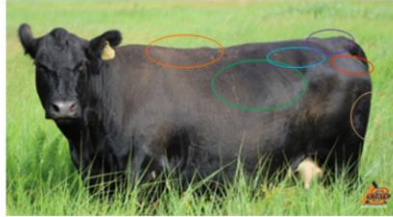
The skeleton becomes more visible with increasing fat and muscle loss



Source: Code of Practice for the Care and Handling of Beef Cattle – 2013
National Farm Animal Care Council



Key Areas to Evaluate



Thoracic vertebrae
(spine over shoulders and ribs)

Ribs

Lumbar vertebrae
(transverse processes)



Hip between hooks and pins

Sacrum or tail head

Muscling in rear quarter



The top cow has BCS of 7 and the bottom cow has BCS of 3. Notice the differences in fat cover and skeletal “exposure” between the two cows in some of the key body areas to evaluate body composition.

Transverse Processes of the Lumbar Vertebrae

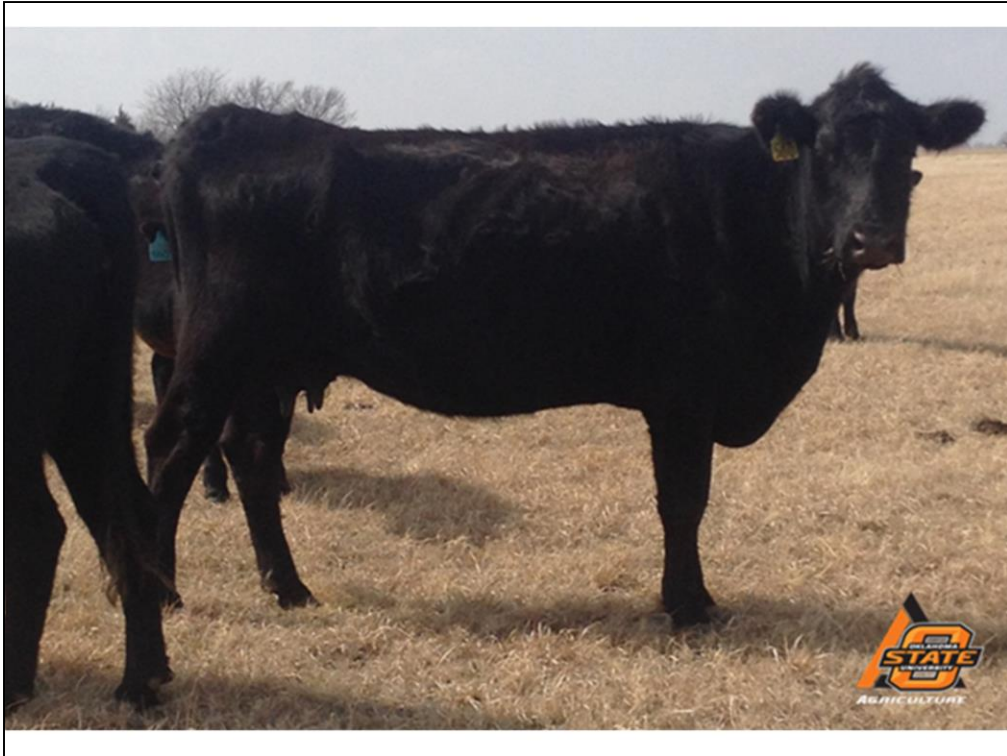


Examples

BCS 2 to BCS 9



WF cow BCS = 2



Black cow #560 BCS = 3



BWF Cow BCS = 4



BWF Cow #123 BCS = 4

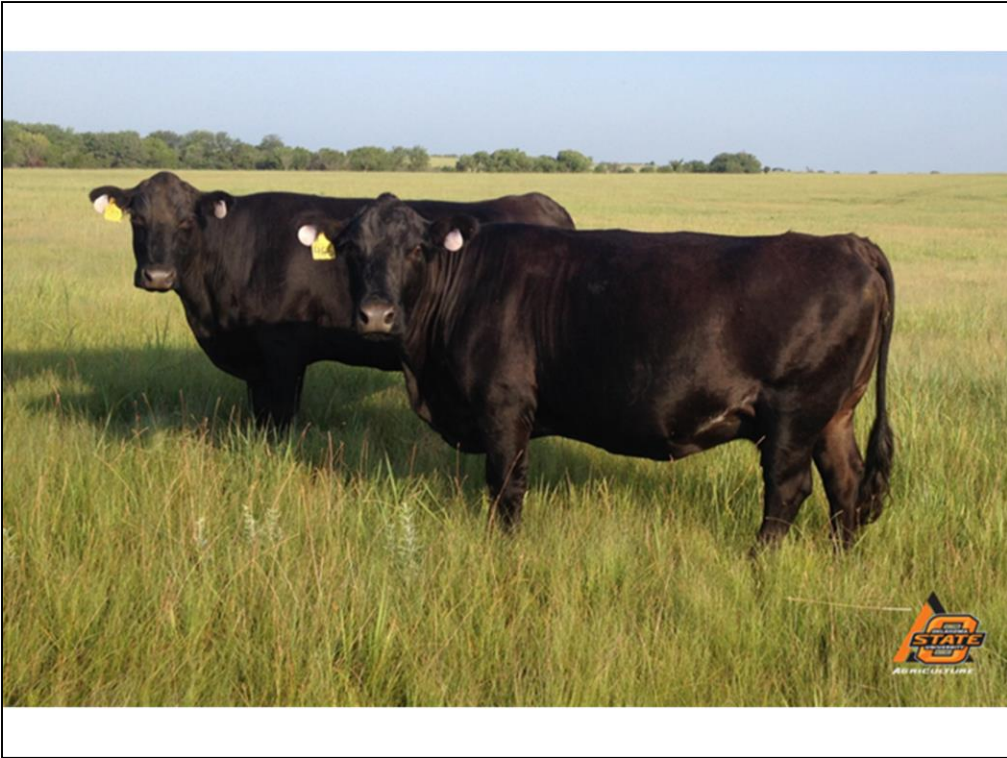


Black cow BCS = 5





Black cow #565 BCS = 6

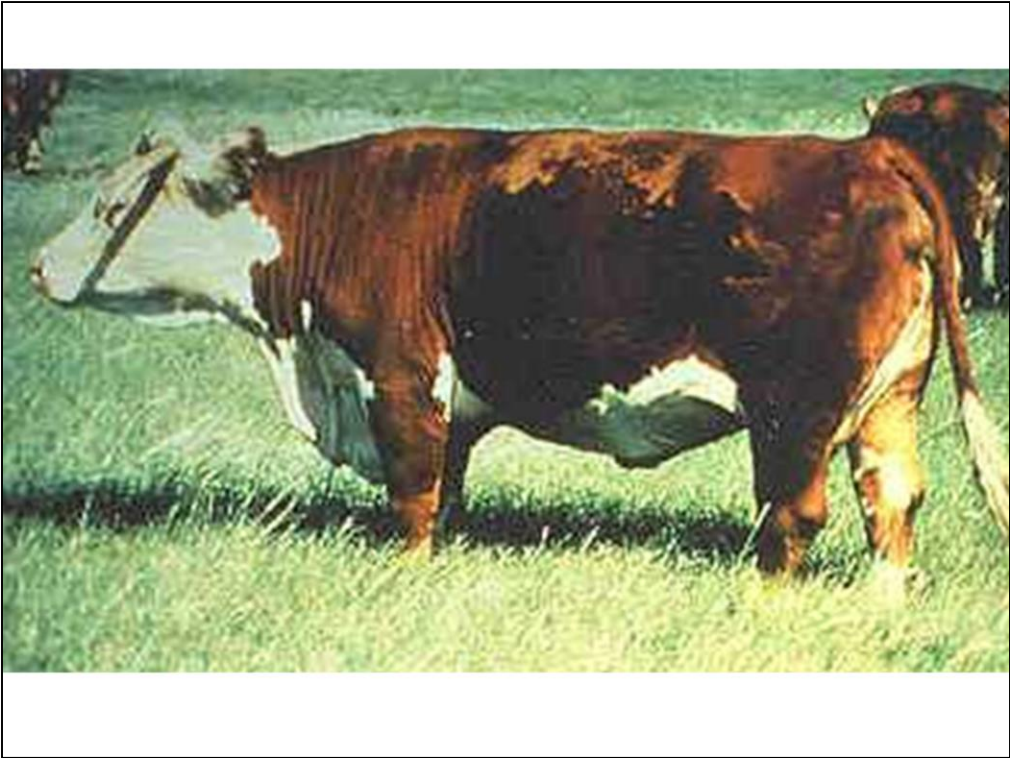


Two black cows # 507 and 466 BCS = 6





Black cow with white udder BCS = 7

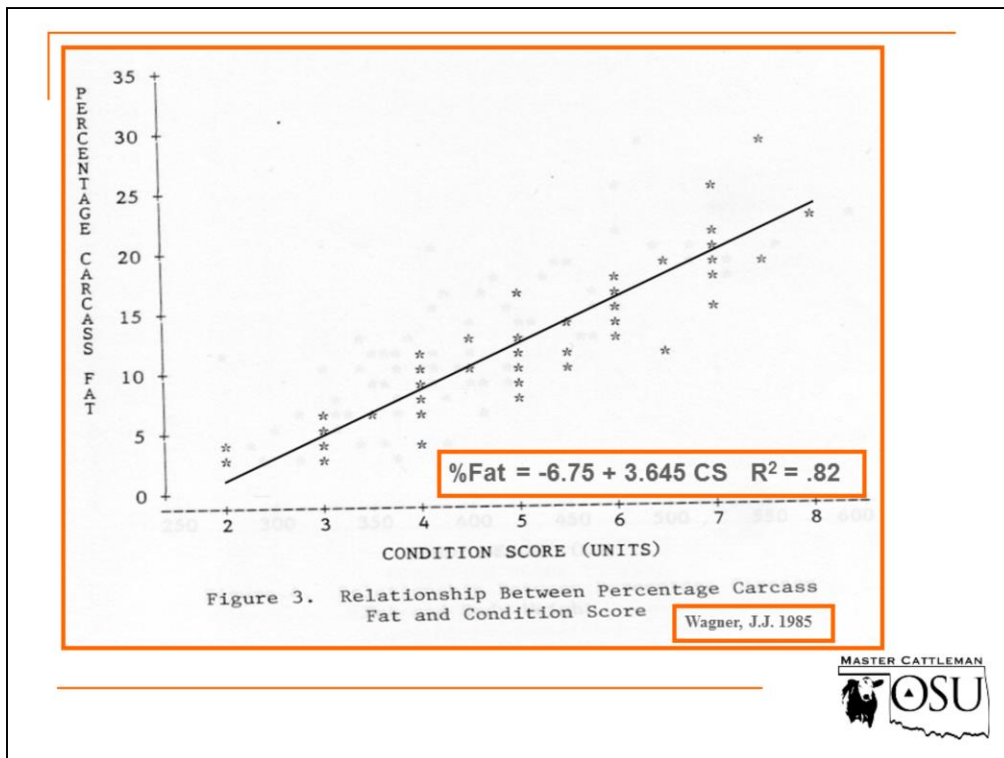


WF cow BCS = 8



Red cow BCS = 9

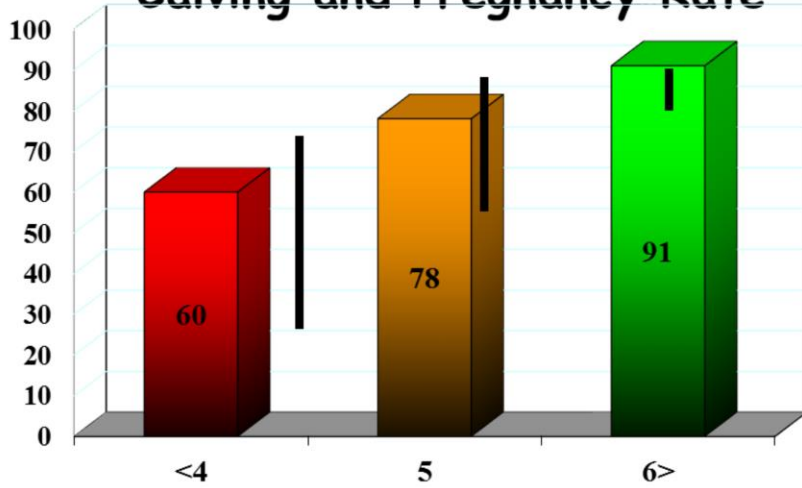
The Science



Based on this research, a cow in a BCS 5 has approximately 12% body fat. Each 1 unit of BCS change (up or down) results in approximately 4% change in body fat composition.



Body Condition Score at Calving and Pregnancy Rate



Body Condition of Cows and Heifers at Calving



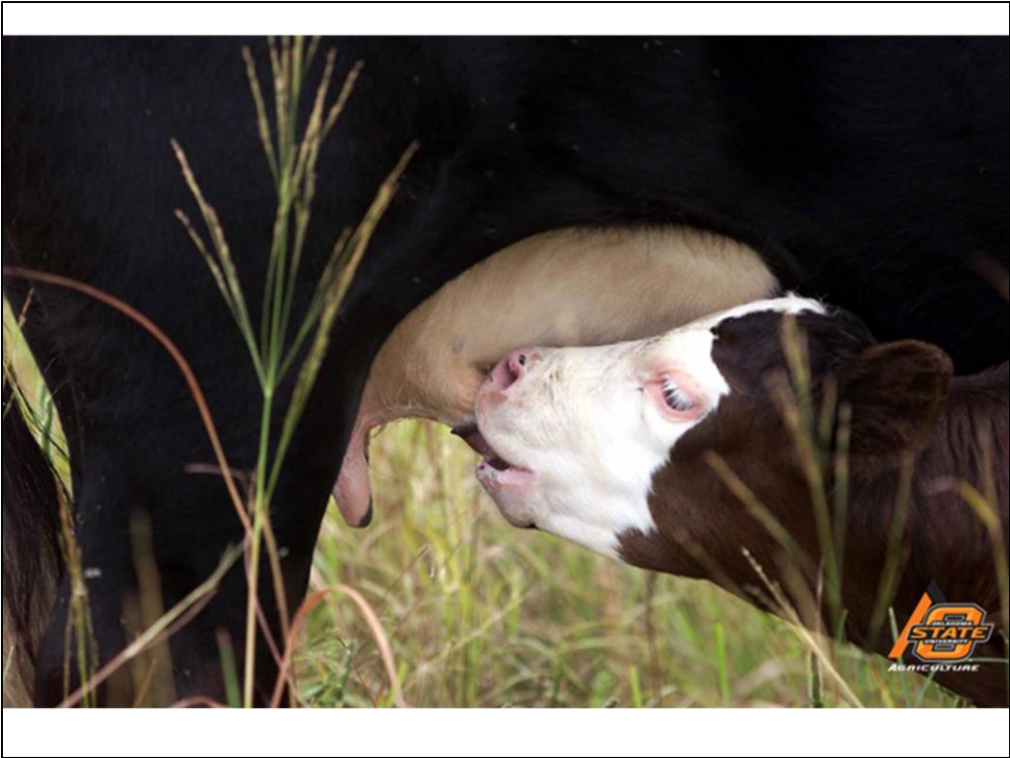
Source: Kunkle et al., 1994

Predicted Number of Days from Calving to First Heat

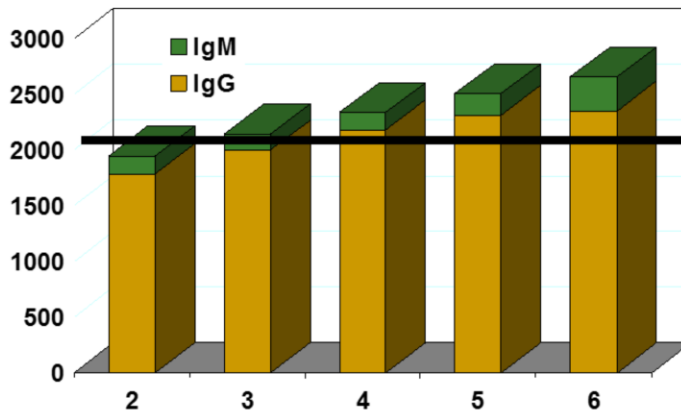
Condition score at calving	Condition score change after calving to day 90						
	-1	-0.5	0	0.5	1	1.5	2
3			160				
4			131				111
5			103				
5.5	118	102	89	79	72	69	66

Source: Lalman et al., 1997





Passive Transfer in Calves Born to Heifers



Body Condition of Heifer at Calving

Source: Odde, 1986



Effect of Reducing Pre-calving Energy to 2-year-old heifers



Birth wt	58	75
% assisted	27	28
% alive at birth	90	100
% w/scours	52	33
% mortality	19	0
% alive at wean	71	100

Now it's your turn



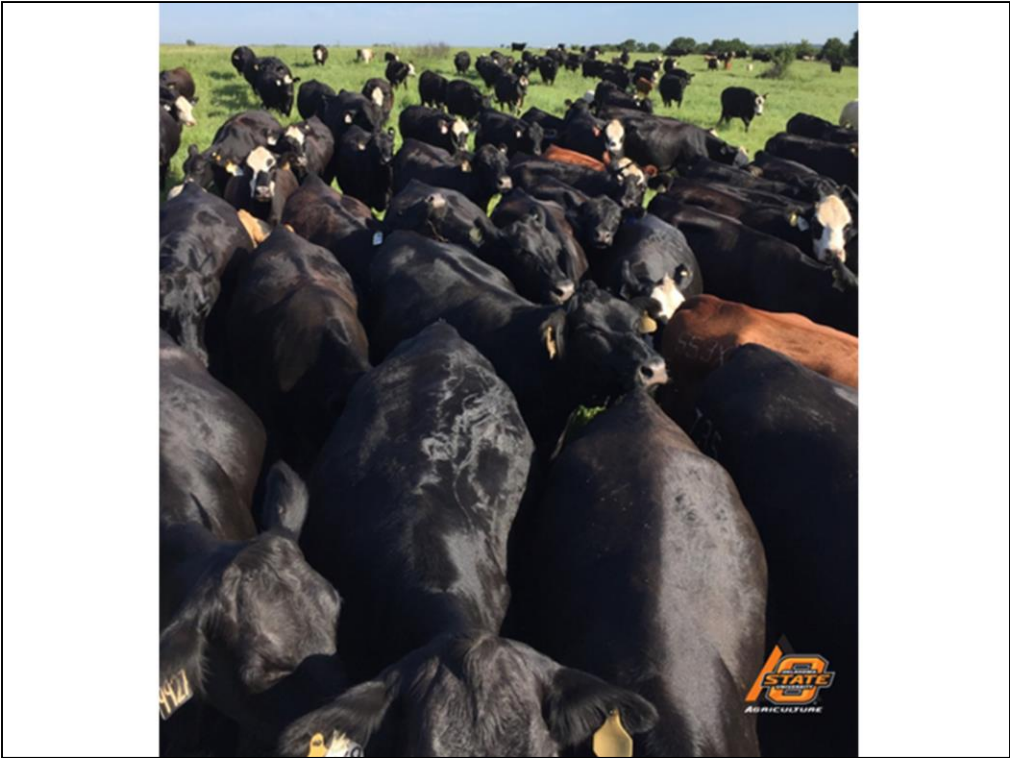
Cow Number 5. White cow. BCS = 5



Cow Number 3. Cream colored cow. BCS = 6



Cow Number 2. Black mottled white face cow. BCS = 1





Cow Number 4. Red, white-faced heifer. BCS = 7



BWF Cow #762Z BCS = 7



Black cow #967 BCS = 3



BWF cow # 7755 BCS = 8

Practical Use

- Collect **individual** cow weight and BCS at weaning – genetic evaluation and culling
- Monitor **herd** BCS as calving season approaches
- Goal
 - Calve mature cows in BCS 5 to 6 and 1st-calf heifers in BCS 6 to 7
 - Minimize weight and BCS loss through the breeding season, especially 1st 90 days after calving



Summary

- BCS is highly related to body energy stores
- Body fat composition at calving is a critical factor in determining time to breed back
- Keep it simple. Give fat cows fat scores and thin cows thin scores - 80 lb between scores
- If you are continually having to play catch up (feed) to improve BCS prior to calving, something is wrong with genetics, management or both



MASTER CATTLEMAN

