



**COLORADO**  
**BEEF** *Profit* **ALLIANCE**

# How Genetics can Change Input Costs



- What is the biggest cost to a beef operation?
- How do we know how much feed a cow needs?





# Cow Nutritional Needs?

- What is the primary measurable that indicates feed needs?
- What drives mature cow size?
- How do our genetic decisions effect mature cow size?





# Genetics and Costs

- Are genetics the only thing that drives cow nutritional needs?
- What about calving (time of year)?
- Range Condition?



# What is so special about Crossbreeding?



- Heterosis or Hybrid Vigor
- The most Hybrid Vigor will result when the two lines used are the most different
- More inbreeding = higher heterosis



# Crossbreeding Impacts



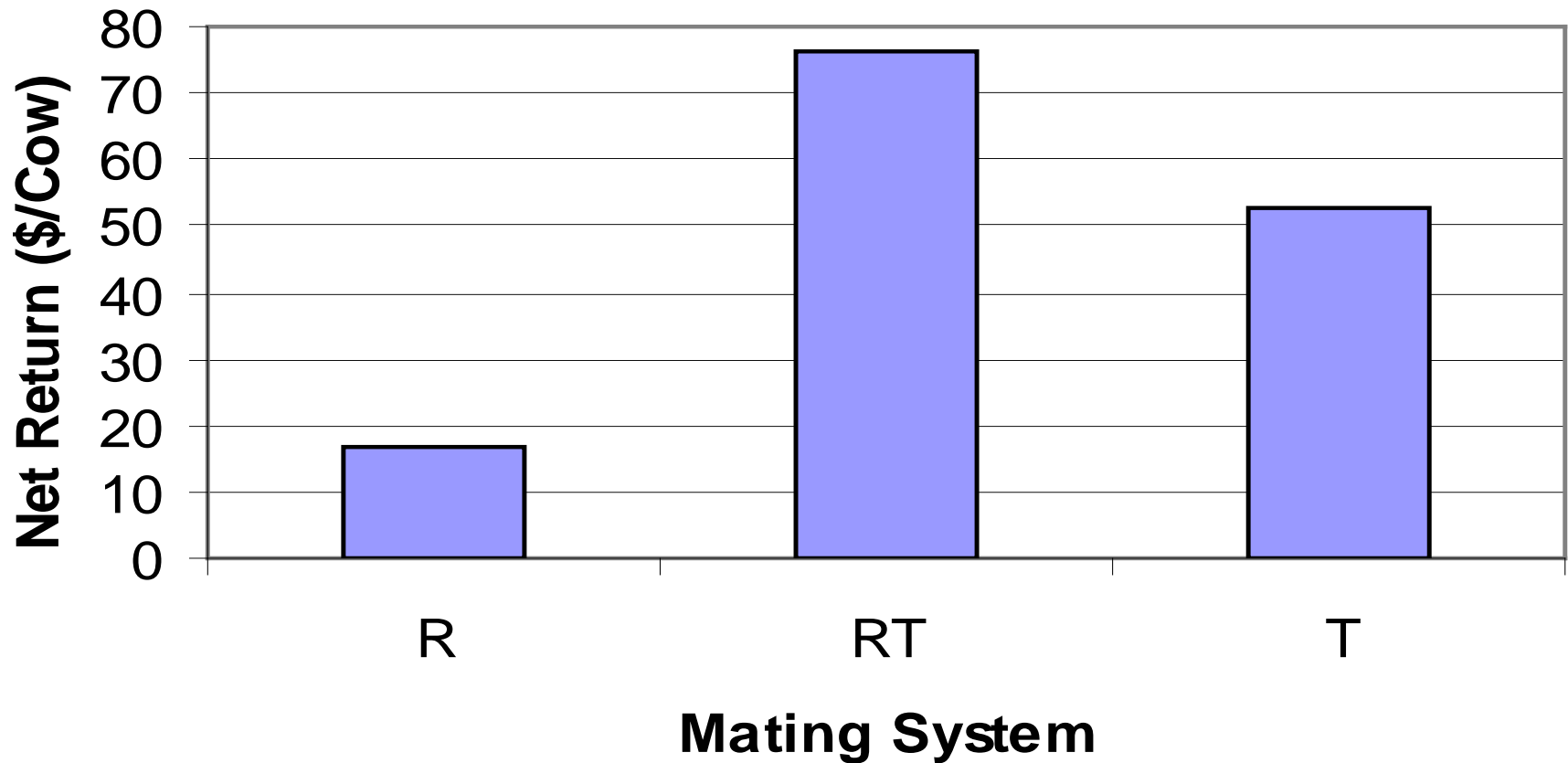
- Impacts on nutritional requirements
  - Is there a cost?
- Increased Performance comes at a cost
  - Increased calf size requires increased nutrition
- A cow must produce enough milk to be able to allow the genetic expression of that crossbred calf



# Crossbreeding Effects



## Effect of Mating System



# Other Benefits?



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<b>Trait</b>	<b>Total heterosis, %</b>
Cow milk production	9
Calf wn. wt./cow exposed <sup>a</sup>	18
Cow forage intake	2
Cow efficiency	2
Cow-calf TDN consumed	3
Calf wn. wt./cow wt.	8
Cow longevity	38
Cow lifetime productivity	25

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Adapted from Kress, Don D. and M. D. MacNeil. 1999



# How do We make Money?

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- What are we selling?
- What is the primary selling age of cattle in the U.S.?
- What premiums are available at this market point?
- How can we make more money?

# What is Happening in the U.S.?



- USDA's 2008 National Animal Health Monitoring System (NAHMS) survey results indicate that the most common descriptor (45%) used by commercial producers to classify their cowherds is "crossbred," albeit comprised of no more than two breeds
- The Angus breed now accounts for approximately 70% or more of the genetics in the nation's commercial beef production system, leaving the remainder of the herd mix to be divvied up among other breeds
- The beef industry, especially the cow-calf sector, remains a highly fragmented business comprising 750,000 independent entities



# More in the U.S.

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- 45% of producers indicate breed is an unimportant consideration when purchasing a bull or semen to breed replacement heifers (NAHMS, 2008). As such, a large portion of the industry exemplifies either:
  - 1) Haphazard implementation of crossbreeding within individual herds or,
  - 2) General disregard for the importance of systematic or strategic planning when it comes to genetic management.

# Why don't People Crossbreed?

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- Takes planning and work
- May have to modify pastures
- Easier to keep doing what we have been doing