

# Beef production inefficiency

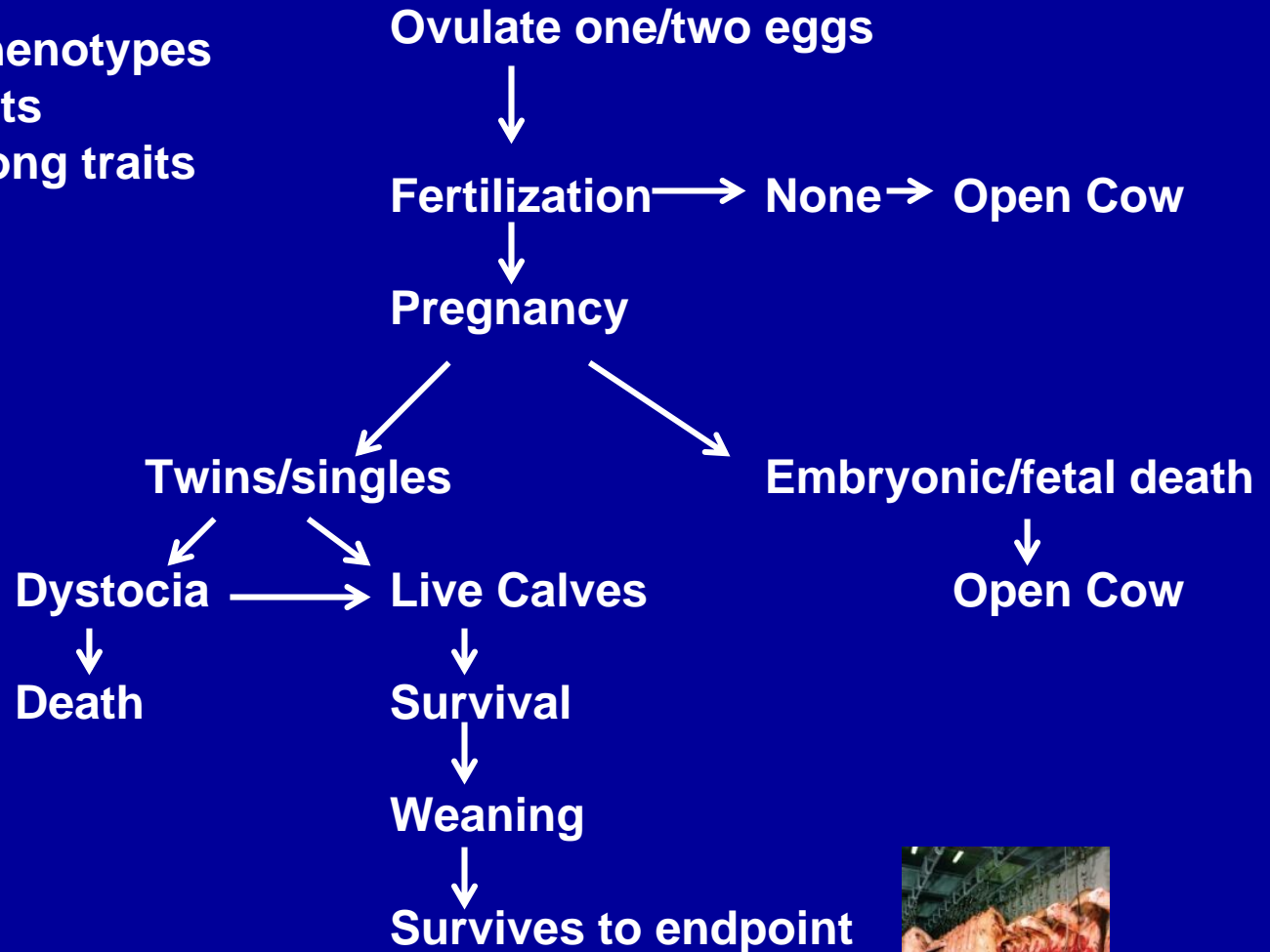
- Ratio of cows calving to number of cows exposed 86-92% (DECI)
- Death loss at calving
- Death loss prior to weaning
- Death loss weaning to yearling
- Cow energy utilization efficiency



**Calves sold per cow exposed**

# Reproduction- Complex Multi Component Traits

- Collection of phenotypes
- Modeling of traits
- Correlation among traits



# Genomic basis of variation in efficiency of nutrient utilization in cattle

- Efficiency of nutrient use and heifer replacement rates – Major costs with beef production
- Relationship between cow efficiency and finishing efficiency. +,- ?
- Will selection for efficient finishing animals result in an efficient cow herd



# GPE VII

Sire:



Hereford,  
Angus,  
Red Angus,  
Limousin,  
Charolais,  
Simmental,  
Gelbvieh

Dam:

Hereford  
MARC III  
Angus

F<sub>1</sub>

n = 1400

(from 1999 to 2001)

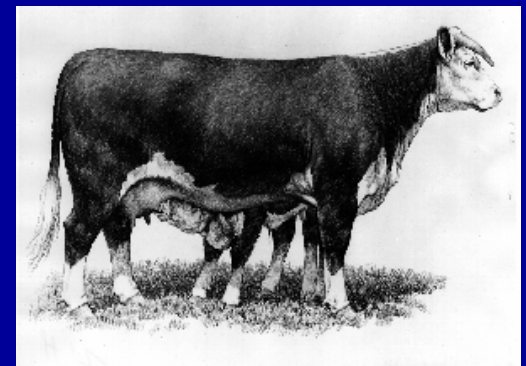
Steers- 524  
Females this fall begin

F<sub>x</sub><sup>2</sup>

Approximately 600/year  
(from 2003 and on)

# Program

- Steers finishing phase 140 days
- Heifers- growth and feed intake
- Cows- nutrient intake and utilization for production
- Heifers and cows production phenotypes- age at puberty, milk production, fertility, dental, feed and legs, udder and teat, calf production
- **Longevity Indicator Phenotypes**
- Identify QTL
- **Establish correlation measures of efficiency in heifers, cows and finishing phases of production.**



# Present/Future

- Will DNA testing play a role in the future of beef cattle- **yes**

**Parental ID, Quantitative tests,  
Simple genetic inheritance**



Will implementation be tough- maybe  
(implementation of EPDs 80s, acceptance  
of crossbreeding programs, ultrasound)

- **Collect tissues for DNA analysis**  
**Populations with phenotypes**

**Breed Association Responsibilities**  
**Database, Education**

- Increase the accuracy of breeding value
- hard (expensive) traits to measure
- sex-limited traits
- lowly heritable traits
- Speed selection decisions

**But..... another valuable tool for the breeder's tool box**