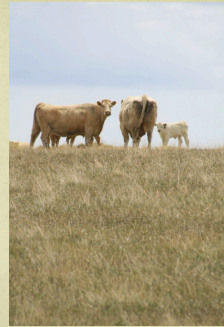
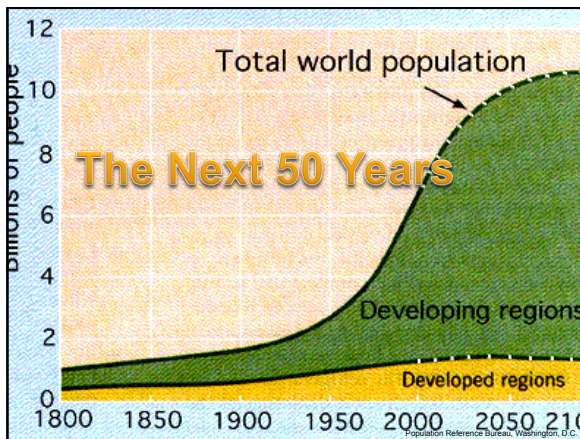
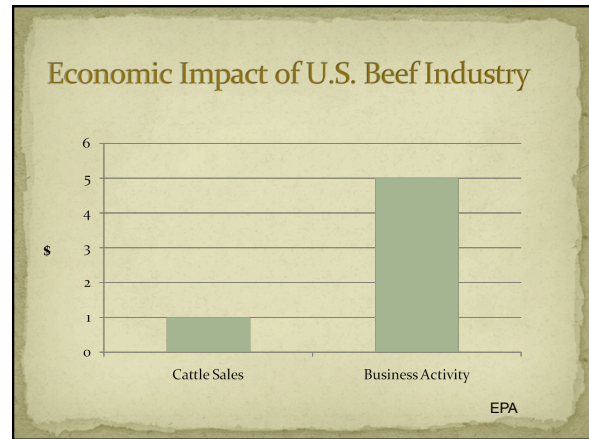


# Role of Genetic Evaluation Technology in Enhancing Global Competitiveness

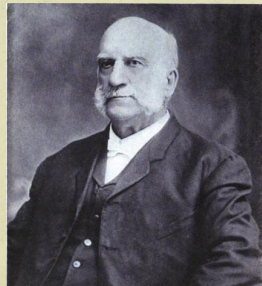
Robert Williams, Ph.D.  
American-International Charolais Association  
Director of Breed Improvement and Foreign Marketing

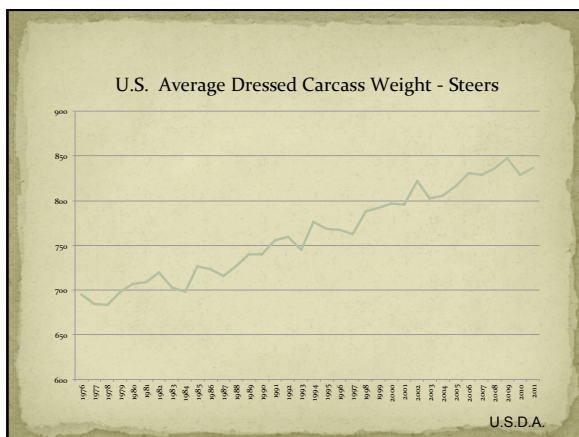
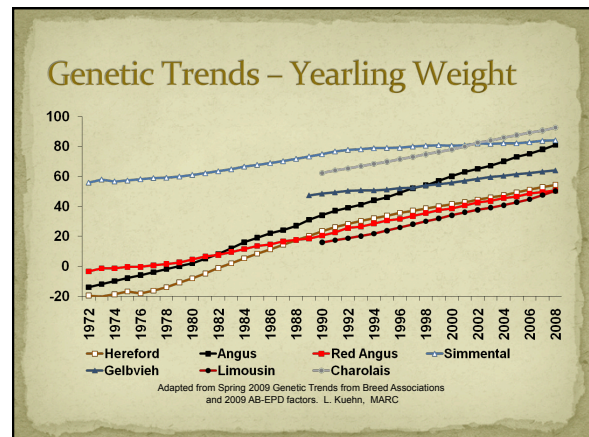
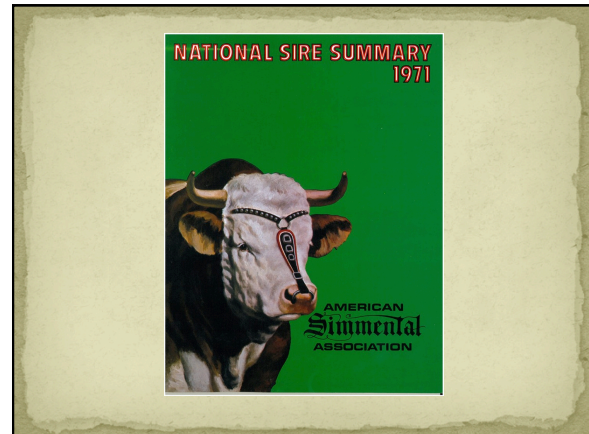
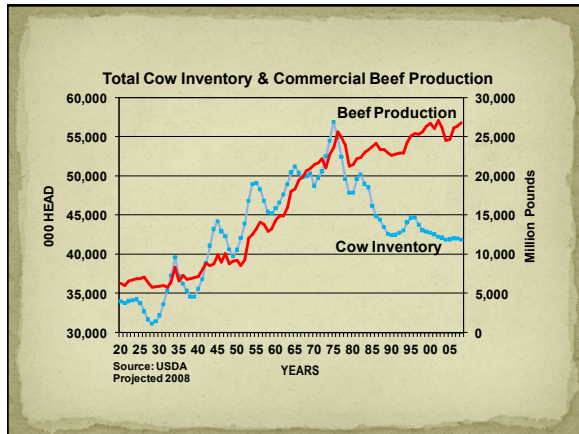
## $R = h^2S$

Response to Selection (R) is defined as the realized average difference between the parent generation and the next generation.

## Research, Education and Extension





### Meat and Livestock Australia

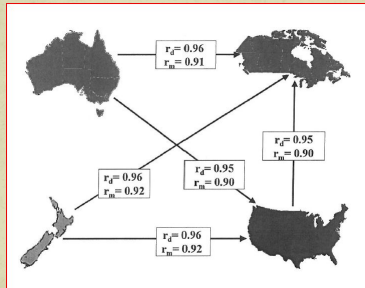
- The genetic trend for Australian breeds are generally similar to the trends of those breeds in other countries.
- One exception is the consistent trends of breeds in the USA and Canada of reduced birth weight and improved direct calving ease while the trends for yearling weight are equal to or better than the trends for other countries including Australia.

Report prepared for Meat and Livestock Australia  
By Alex McDonald  
2007



## International Evaluations

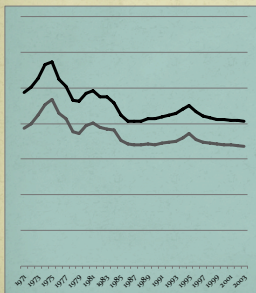
— direct and maternal genetic correlations for weaning weight



Danaher, et al 2004

## Challenges Facing Beef Breed Associations

### Decreasing Beef Cow Inventory and its Impact on U.S. Beef Breed Budgets



- The industry needs approximately 400,000 fewer bulls today than it did in 1975
- The decreasing size of commercial beef cow numbers is the direct cause for a loss of approximately 430,000 registrations for U.S. Beef Breed Associations since 1975

### Decreasing Beef Cow Inventory and its Impact on U.S. Beef Breed Budgets



- This accounts for a direct loss of income to breed associations of approximately \$11,000,000 annually.

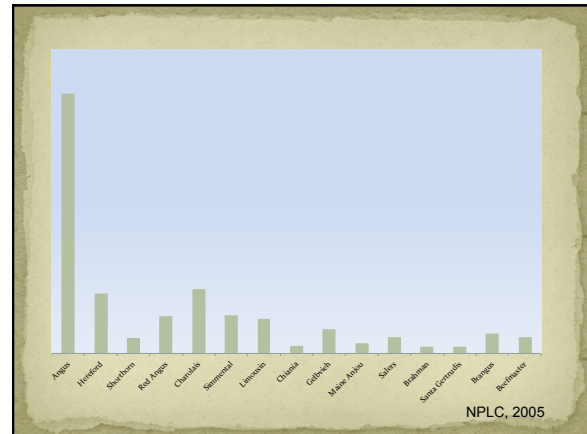
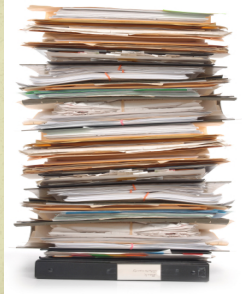
The question whether to use genomic information will be replaced by how to use it efficiently. I. Misztal, 2010

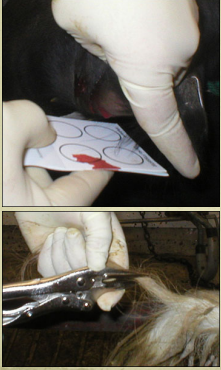


## Genetic Evaluation Services

- Beef Breed Associations in cooperative efforts with Land Grant Universities have been the driving force behind genetic evaluations
- More responsibility in recent years has been shifted to the industry to support the development of genetic evaluation tools and take on the responsibility of identifying new genetic evaluation service providers

## Data complexity





**Data Collection**

- Birth and Growth
- Ultrasound and Meat Quality
- Efficiency
- Health
- Adaptation
- Healthfulness



## Synergies



- National Beef Cattle Evaluation Consortium
- National Beef Cattle Center of Excellence
- Multi-Breed Genetic Evaluations
- NCBA Carcass Merit Project
- Ultrasound Guidelines Council

