

Bull and Cow selection

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Everything starts with a plan:

- In Animal breeding you need a goal
- No one size fits all



Factors that will drive future genetics

- Economy
- Climate
- Environmental Activism
- Consumer Preference
- Technology

Selection Goals should reflect:





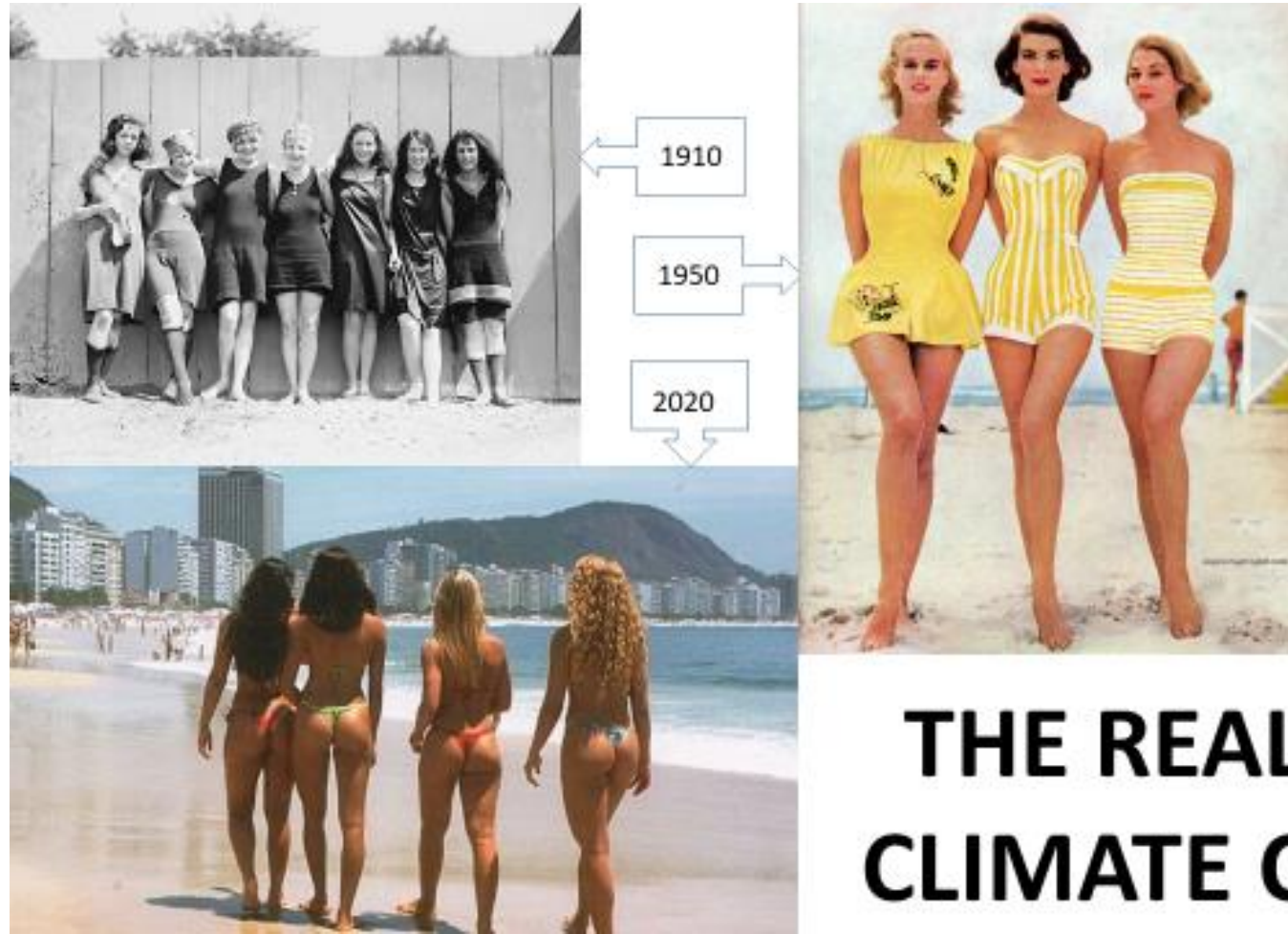
The Dilemma with the Cattle Stud Industry :

“The Stud world can afford to change the environment to suit their genetics. The commercial beef producer, on the other hand, can only afford to have the genetics that suit their environment” **Ian Lock – Hereford stud breeder**

“A true genetic program, focussed on breeding, not feeding!” ” **Ian Lock – Hereford stud breeder**

Selection Goals should reflect:

- Production environment
 - Climate change



**THE REALITY OF
CLIMATE CHANGE**

Heat Stress

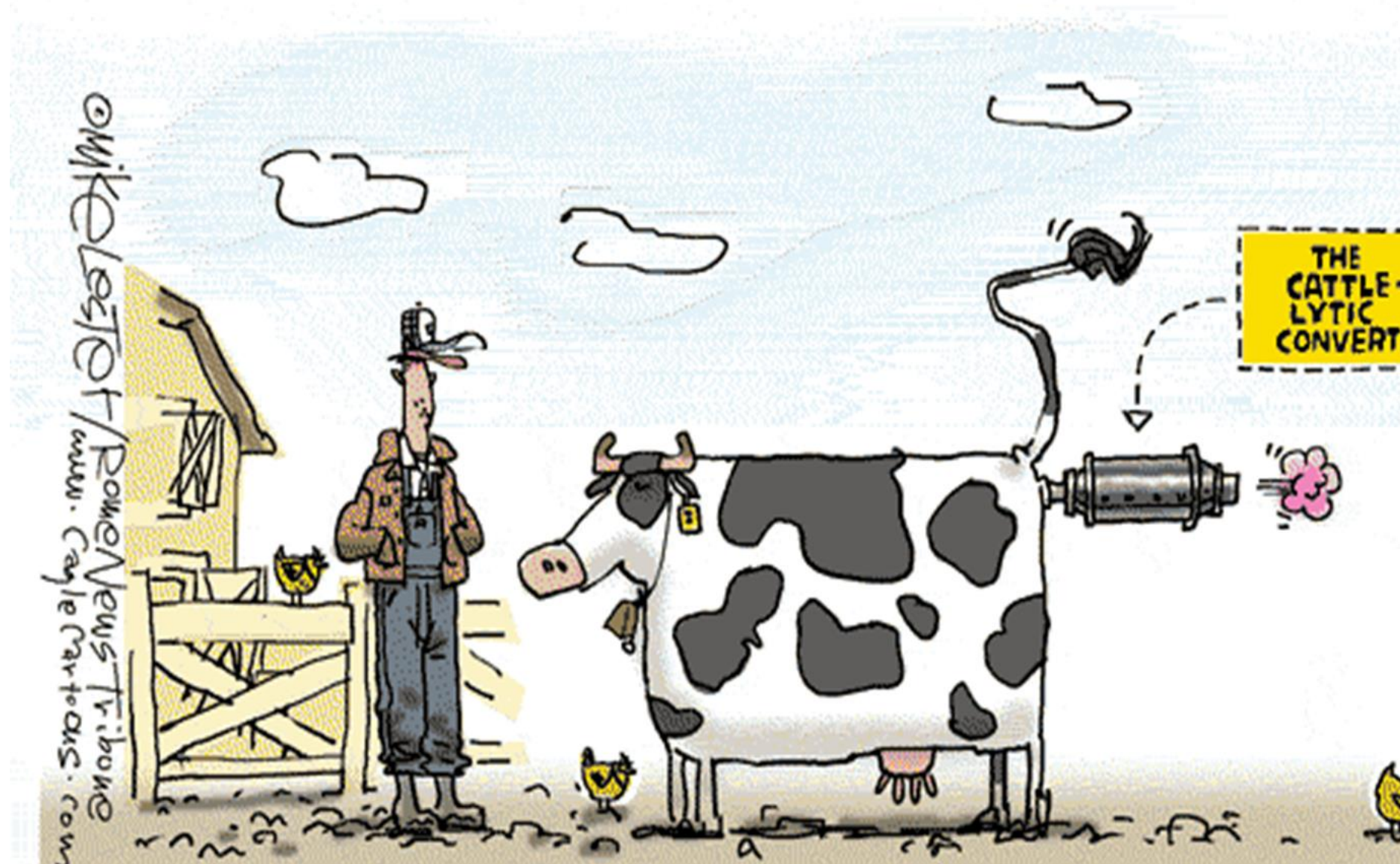
The effect of weather patterns on growth of beef calves in a warm climate

- **Correlation between BLUE values ("true environment") for weaning weight and maximum seasonal temperature: -0.65**
- **Temperature explains 42% of variation in weaning weight (3 degrees difference)**

G X E important in genetic evaluations

U.N. REPORT IDENTIFIES "COW EMISSIONS" ARE MORE DAMAGING TO PLANET THAN CO₂ FROM CARS... SOLUTION?

- Environmental activism
 - Need more efficient cows



Can efficiency of beef production be improved?

US Beef productivity (1977-2007):

- **Beef carcass yield increased 22%**
- **Age at slaughter reduced 21%**
- **Total beef production increased 11%**
- **Population decreased 5 million head**
 - **18% less manure**
 - **16% lower carbon footprint**

Advert on Sales Catalogue of Lee Leachman

When will cattle convert

3.2->1



When pigs can fly

Selection Goals should reflect:

- Production environment
- Production system
 - Weaners
 - Oxen
 - Crossbreeding
 - Niche markets

Selection goal should reflect

- Production environment
- Production system
- Profit – current and future market needs
 - Anticipate the market needs in 5-10 years
 - Consumer driven

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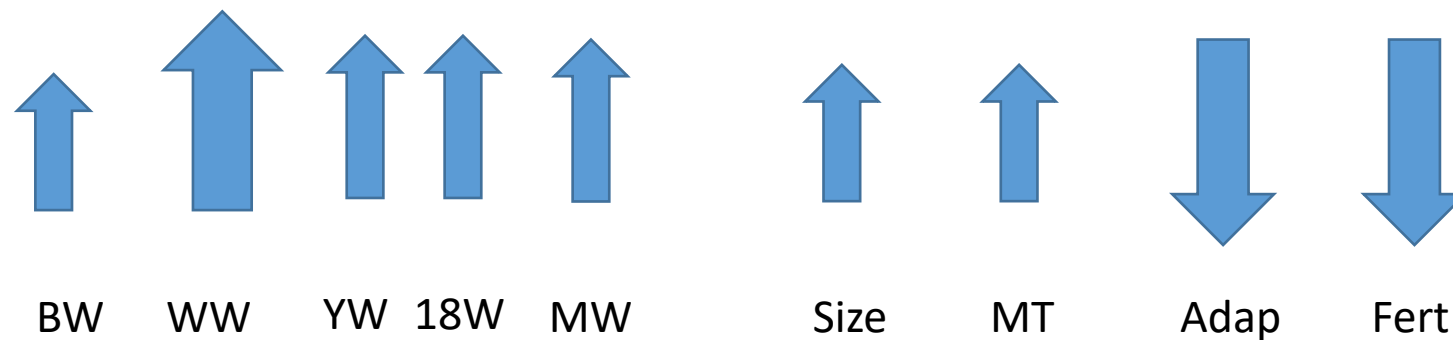
“From now on, red ink means *profit* and black ink means *loss*. Problem solved!”

Factors to be considered when choosing Traits to be included in a selection program

- Balance between performance and “looks”
- Traits must be of economic importance
- Use breeding values
 - Accurate measurements
 - Accurate pedigrees
 - Try keeping contemporary groups intact until at least weaning

Factors to be considered when choosing Traits to be included in a selection program

- Balance between performance and “looks”
- Traits must be of economic importance
- Use breeding values
- Take genetic correlations into account



- Don't do single trait selection-many traits influence an animals profitability

Different traits

- Functional / fitness
- Production / growth
- Input
- Product / quality
- Type / conformation
- Behavioral / Temperament



So many traits to consider-how to
know where to put the emphasis

Use a Economic Index that
suite your situation

Economic Indexes provided
by a Breed society implies
the preferred market
position of the Breed

Potential S A Brahman Selection Indexes

Self Replacing Feedlot

Self Replacing Grass Fed

Self Replacing Rangeland Grazing

Self Replacing Weaner Index

Closing thoughts

- Many traits determine the value of an animal
- Too many traits in selection program – slow progress
- Choice of traits NB
- Use technology
 - Breeding values
 - Economic Index
 - Start to participate in the genomic era