Suggested Beef Breed Improvement Program

A respected authority on the beef cattle industry in his home country of South Africa, Dr. Cas Maree gave a detailed presentation on functional efficiency at the 1985 TLBAA National Convention (a videotape of the seminar is available from the TLBAA). An associate of veteran Longhorn breeder Walter Scott, Maree has had the opportunity to study several Longhorn herds. Based on those observations, discussions with Longhorn breeders and his extensive experience with many cattle breeds, Dr. Maree has made the following report to TLBAA members.

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The selection of cattle for functional efficiency is frequently not promoted by judging standards along traditional lines in terms of breed characteristics. All conformational features and subjective traits should at least represent some function or improve some biological feature of benefit to the animal(s) concerned. Otherwise, breed standards become meaningless and may indeed be disadvantageous to the breed.

Features under Column A determine functional attributes, while features under Column B determine the more traditional breed standards. There is fair overlapping, but it is essential that the promotion of any feature in Column B shall not in any way be detrimental to features (functions) under A.

A. Features related to functional efficiency

1) Fertility
2) Growth ability
3) Calving ease
4) Adaptability
5) Carcass quality
6) Physical fitness (freedom from all defects)

B. Features related to conformational standards

1) Breed/breed type
2) Colour
3) Size
4) Muscling/carcass type
5) Head, neck, back and hindquarters
6) Legs and feet
7) Heritable defects
8) Trade marks

"The Texas Longhorn is a breed that can be promoted powerfully on true genetic ability."

The following observations are relevant to the Texas Longhorn:

Fertility

Requirements for a high level of herd fertility are the following:

In females—Early sexual maturity and conception, ease of calving, regular and easy reconception and a long, productive life span.

The Texas Longhorn has an excellent rating for female fertility.

In males—Early sexual maturity, well-developed and normal conformation of testicles, good semen quality in addition to a high level of libido and total physical fitness are prerequisites for fertility in bulls.

Growth Ability in Females

In females, ease of birth, a strong and vigorous calf, and a good weaning index and early conception are the essential features of growth ability. There is a close interaction between growth ability and fertility and also adaptability.

Fertility is a sensitive and reliable indicator of growth ability. Poor doers will not conceive. Unadapted females will do poorly.

Many breeders concentrate on size in females, but fertility is what counts, not size. Females that do not breed regularly are big and fleshy. Selecting big females inevitably leads to the selection of subfertile females.

Growth Ability in Males

Growth parameters in beef bulls are the weaning index, post-weaning growth (ADGADA) and 12-month, 18-month, mature weight, etc.

Again, it easily happens that the most growthy bulls are not highly fertile. That is why they grow tall and such bulls are inclined to be leggy and flat.

Fertility is a much higher priority in breed improvement (or economics) than growth ability. Body weight gain is directly related to selling price and beef yield. Therefore, a safe balance is to be maintained between fertility on the one hand and size (weight) on the other hand.

Selection for growth (weaning weight, adult weight, efficiency of gain) increases birth weight and adult size. Neither can be attained at the expense of

the other. Therefore, in the Texas Longhorn, growthy bulls can only be selected out of calves born absolutely without assistance.

The limit to selecting for growth is ease of birth. However, it is possible to make ever further progress by selecting for post-natal growth in animals of restricted birth weights. Ideally, in the Texas Longhorn, an upper limit for birth weight needs to be fixed and within limited birth weight calves, selection can proceed for better weaning weights and post-weaning growth rate. In the Longhorn, birth weights are far lower than they need to be and much improvement can consequently be made in weaning weights and post-weaning performance.

Calving Ease

Ease of calving is a function of various factors.

Small calves where birth weight of the calf is in the order of 7% to 8% of maternal weight is a strong factor in the Longhorn. However, pelvic size plays a role in individual females.

Also, some bulls sire calves that are heavier at birth. This can frequently be identified by a sire's own birth weight. Early-bred heifers particularly require to be mated to bulls with moderate birth weights.

"Breeds have been destroyed through over-emphasis of fancy points at the cost of productivity."

Ease of calving is best promoted by selecting for it.

Adaptability

Resistance to heat and humidity, external and internal parasites, radiation and harsh, extensive range conditions are the important stressors that cattle have to adapt to. The Texas Longhorn is a breed extremely well adapted to environmental stress. Indeed, adaptability together with fertility are the starting points to justify further selection and improvement in this fine breed.

Conformation of the Texas Longhorn

Judging cattle on conformation plays a meaningful role in the identification of structural defects which are frequently heritable. Such defects will eventually affect production, but obviously their elimination is required at a much earlier stage. Thus, cattle have to be evaluated for soundness of legs and feet, problems with the sheath, weak jaws and wry face, dwarfism, hernias and many other structural defects long before production is

affected by these abnormalities.

Naked eye inspection and a very keen sense of observation are essential tools of the cattleman.

Fertility through secondary sexual characteristics, carcass quality and finishing, adaptability and other features can to some extent be evaluated by judging conformation. Records, however, are far more reliable to do so.

Breed standards, also known as standards of excellence, can never be based solely on conformational features. Records of performance that relate specifically to fertility and growth ability and carcass traits must constitute the major component of any breed's standards of excellence.

Conformation should be incorporated in programs to ensure physical fitness and freedom from defects. Also, conformation plays a role as a promotional tool.

Trademarks and Promotional Tools

Breed characteristics are fully justified as promotional or merchandising tools in livestock. Thus, concepts like breed or type, colour or colour patterns, horns, or any unique features are used to merchandise cattle.

"Fertility, growth ability and carcass traits must constitute any breed's standards of excellence."

It must be remembered, though, that the "trademark" is not the true object but simply a means to promote the object, namely beef production (in the case of beef breeds).

Many a time, and in all beef breeds, the very object has been defeated or greatly prejudiced by over-exploitation of features not related in any way to productivity which is, after all, the ultimate object of beef breeds. The Texas Longhorn and the preoccupation that some breeders have with their horns is a perfect example of such misdirection of breed promotion.

There are examples where breeds have been destroyed through over-emphasis of fancy points at the cost of productivity.

On the other hand, and very sincerely, the Texas Longhorn, in the current state of its development, has so much inherent genetic merit that it fills a unique niche in the beef gene pool in America. It is a breed that can be promoted powerfully on true genetic ability instead of on fancy points.