

## National Beef Cattle Conference Summary

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The paragraphs that follow represent an attempt to summarize the major issues that were brought forth at the National Beef Cattle Conference. Because of the scope of the conference, it is not possible to cover all of the points that were discussed.

### Pricing System:

Jim Eller, Chairman of NCA's Purebred Council, launched the conference with a convincing argument for a beef pricing system that would adequately and fairly recognize true value differences in slaughter cattle. He pointed out that if this is to come about, it must start with an accurate "price discovery" system. This would benefit all segments of the beef industry.

### Carcass Size:

Although they are currently purchasing cattle that produce carcasses weighing from 550 to 950 lb (the heavier carcasses going to H.R.I.), the representatives of two major meat packing firms, IBP and Excel, indicated that a range of 650 to 750 lb would be much more ideal. In fact, retailers tend to prefer carcasses in the 650 to 700 lb range. Realistically, however, the packers suggested that a range of 600 to 800 lb would be highly acceptable. Depending upon dressing percent, this translates into a live weight range of approximately 1000 to 1300 lb. A carcass weight range of 650 to 750 lb represents live weight spread of about 1075 to 1225 lb.

### Frame Size:

There is a need to stabilize frame size in order to meet the requirements of the market place and to satisfy environmental constraints in certain regions of the country. The national cow herd appears to average somewhere around 4.5 in frame size. In order for the population of slaughter cattle (steers and heifers) to fit an acceptable carcass weight range of 600 to 800 lb, frame size of these terminal cattle should fall in the range of approximately 4 to 6. This implies that the average size of the national cow herd can still increase somewhat without jeopardizing total beef production efficiency. Nevertheless, we are getting close to the limit. There was a general consensus among conference participants that bulls produced for use in commercial cow herds should lie in the range of 5 to 8 and that the upper limit for sires used in purebred herds should be no more than 8 to 9.

### Early Growth:

Significant improvements in early growth (weaning and yearling weight) have been made during the past 15 years. Because it is related to total efficiency of beef production, there should be continued selection for early growth within an acceptable frame size range. However, care must be taken to avoid unacceptable increases in birth weight and calving difficulty.

**External Fat:**

During the past 30 months, the industry has benefited greatly from the fact that external fat is being trimmed off before the product goes into the retail case. For the future, however, it will be important that excessive amounts of fat not be added at any point in the food chain. This means there needs to be some reduction in external fat from current average levels (0.5-0.6 in.). Nonetheless, the industry must avoid going to extremes because research has shown there are some risks in selecting for extremely lean cattle; namely, later puberty, lower conception rate, increased calving difficulty, and reduced quality grade (marbling). Commercial cow herds need enough fat (fleshing ability) to enable them to condition score 5 to 6 so they can breed back on schedule.

Consensus of conference participants was that 0.2 and 0.5 in represents a reasonable minimum and maximum, respectively, for external fat. However, it was pointed out that 0.4 in. maximum should be our goal, because 0.5 in. is still a relatively fat carcass.

It was emphasized that the industry will not feel the impact of reduce fat in the pricing system until retailers understand the "new math" of trimmed beef and realize that they can make as much or more profit from this approach as they did on traditional methods of processing and merchandising beef.

**Seam Fat:**

A rapidly emerging issue is: "How do we efficiently, cleanly remove seam fat?" There is actually more seam fat than external fat in the average carcass. Furthermore, seam fat is the primary contributor to plate waste. Developing genetics and/or management systems to deal with seam fat will be a real challenge for the future.

**Muscle:**

It was generally agreed that today's U.S. beef population can benefit from some increase in muscle thickness. However, like other traits, there is always the temptation to carry selection programs to the extreme. Intense selection pressure for heavily muscled cattle could increase the frequency of the gene that leads to double muscling. Research has shown that extremes in muscling may increase the risk of lowered fertility, increased calving difficulty, lowered milk production, and reduced levels of marbling. Furthermore, extreme muscling can lead to over-sized retail cuts. For example, the industry currently recognizes the acceptable range for rib eye and to be from 12 to 15 square inches

Refinements in ultrasound technology will enable the industry to accurately evaluate yearling breeding cattle for rib eye area (REA). Before these data can be utilized in breed and herd improvement programs, we must develop adjustments for some or all of the following environmental factors: weight, age, sex, plane of nutrition, etc.

**Quality Grade (Marbling):**

As long as the current pricing system continues to discount Select carcasses, the quality grade target for retail beef will continue to be

Low Choice. For the "gourmet" or high quality restaurant trade, the target will be average Choice or higher. It was shown that marbling is an "insurance policy" in that higher levels tend to reduce the variation in tenderness in today's beef population and keeps most steaks in the "acceptable" category. However, there was considerable sentiment among conference participants, including packers, that the industry should somehow reduce the emphasis on marbling and place more emphasis on producing "young" beef. Research has shown that youth and tenderness are closely related. It was pointed out that we have the tools to produce 12-to-18-month old cattle grading high Select that will fit the box and be lean and tender. The present pricing system encourages us to produce older and fatter cattle (20 to 28 months) that can rather consistently achieve a Choice level of marbling. In order to change, the big problem is: "How do we validate age and time on feed?"

#### **Achieving Optimum Carcass Merit:**

Optimum yield grade (YG) is determined by optimum combinations of fat and muscle. Conference participants agreed that today's standard of YG3 will shift to YG2 in the future. As mentioned above, the reduction of fat and the increase of muscle is associated with some risks. Matching breeds that are high in lean growth with breeds having marbling and maternal ability offers great potential for optimizing carcass merit. In a rotational crossbreeding system, however, this approach can result in rather wide fluctuations in cow size and milk production. Furthermore, terminal sire systems have the inherent problem of generating replacement females.

A family of compounds known as beta agonists may help make the job easier because their mode of action is to repartition nutrients from fat to muscle. For example, the cow-calf industry could conceivably keep moderate-size, easy-fleshing cow herds having reasonable maintenance requirements and high fertility. By feeding repartitioning agents to the progeny of these herds, the feedlot industry may be able to enhance growth rate and feed efficiency, reduce fat deposition, and produce more muscular carcasses within a desirable weight range. However, maintaining palatability while simultaneously reducing fat and increasing muscle could be a potential problem. Beta agonists are not yet cleared for use in animals, but they are being intensely researched by several pharmaceutical companies. Even if these compounds are not cleared for use, recombinant DNA technology (genetic engineering) may eventually enable us to achieve comparable results.

#### **Milk Production:**

Milk production should be adjusted to fit a given environment. Furthermore, milk produced in excess of the growth needs of the calf is not an efficient use of resources. Some breeds and herds may need to improve their average milk production, but there is danger in selecting for extremely high milk levels because it could reduce fitness (reproductive performance) for the environment.

#### **Functional Traits:**

A routine breeding soundness exam (BSE) can help eliminate bulls with problems that reduce function. Scrotal circumference is a highly heritable trait that is related to early puberty in half-sisters and

daughters. Structural problems as well as disposition are heritable traits and should be particularly discriminated against in maternal and general purpose breeds where daughters will be kept for replacements.

#### **Using EPD's:**

The emergence of the "reduced animal model" (RAM) in 1984-85 was a major breakthrough for genetic improvement programs. RAM is an extremely robust statistical model that incorporates progeny, pedigree, and individual performance data into expected progeny differences (EPD's). Recent research has shown that EPD's are accurate in theory and in practice when the data base is adequate. In the future, EPD's will be heavily relied upon to improve early growth, calving ease, and maternal traits. Carcass and reproduction traits will eventually be added to National Cattle Evaluation (NCE) programs.

#### **Number and Role of Breeds:**

Reducing the number of breeds that play a major roll in beef production systems was advanced as a means of increasing uniformity and consistency in the U.S. beef supply. However, when one considers the extremely diverse environmental conditions under which beef cattle are raised in the U.S., it appears there is a legitimate need for a significant number of the breed types that are available today. Nevertheless, there may be justification for heavier utilization of a fewer number of breeds within a use classification (terminal, maternal, general purpose, etc.). One speaker suggested that the number of breeds playing a major role may eventually boil down to 8 to or 10 out of a total of 70. The burning question is: "Which ones will they be?" Opening its herd book could dramatically alter a breed's competitive position in the industry. The emergence of "composite" breeds further clouds our vision of the future as far as breeds are concerned.

There seemed to be agreements that, regardless of its use classification, no breed could survive without acceptable performance in all economically important traits. As Dr. Dave Buchanan stated, "It is probably in the best interest of each breed to emphasize a balance of traits while ensuring that nothing is done to damage their primary utility. Historically, those breeds of livestock that cannot serve broad segments of the commercial industry have become novelties."

#### **Kinds of Purebred Breeders:**

In his analysis of the future role of the purebred industry, Dr. Bill Pope suggested there would be five kinds of seedstock producers in the future.

1. Large breeders who follow the latest research and pay little or no attention to the show ring.
2. Small to medium size breeders who will sell bulls locally, will use A.I., but will find the competition tough. To survive, small breeders may have to go together or align themselves with a large breeder.
3. Breeders producing seedstock for specific commercial crossbreeding programs, such as F<sup>1</sup> heifers, etc.

4. "Brand X" breeders who have outside funding and will develop "composite" populations. They will not be a part of a breed association.
5. "Hi-tech" breeders who have outside funding. They will stay within a breed. They will be constantly searching for a competitive edge and will use every tool available for genetic improvement.

**Planning Ahead:**

In planning ahead, the following summary points seem appropriate:

- Look for the industry to "stabilize" somewhat around the current specifications after two decades of dramatic change.
- Identify emerging trends early, but be certain they are well-founded. Use caution and moderation. Avoid the temptation of going for "extremes".
- Be aware of trends and changes in other industries (swine, poultry, dairy, and even crops). We are all in the "protein business".
- We are a highly segmented industry. Our competition is either integrated or moving rapidly in that direction. For that reason, we need to keep talking to each other.