

# Review of the Iowa State University Beef Grading Conference and Current Status of Federal Beef Grading Standards

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The National Cattlemen's Association (NCA) subcommittee on beef grading began studying the grading situation in 1979, seeking new research data and new approaches to predicting meat palatability. The subcommittee was also updating itself on practices and application of grade standards and the reliability of the standards, and evaluating the impact of grade standards on beef production efficiency.

Early in 1980, Bill Zmolek, Beef Extension Specialist at Iowa State University, and other members of the Iowa State faculty, conceived the idea of a National Beef Grading Conference (NBGC). As interest and support for such a conference developed, Frank Arney, NCA staff director, Howard Mogler, Alvord, Iowa, subcommittee chairman of the beef grading committee for NCA, and Gene Schroeder, Palisade, Neb., chairman of the beef grading and inspection committee of NCA were asked if NCA would like to support and promote the NBGC. As a result, NCA became involved in the conference. In addition, the Iowa Cattlemen's Association and Iowa Beef Industry Council were cosponsors. Twelve state livestock associations made additional contributions.

The NCA beef grading committee had become strongly convinced after their study that grade changes were necessary to make the beef industry more competitive with other meat species, and that some changes could be made without lowering meat palatability.

Three hundred persons from 32 states and two Canadian provinces attended the NBGC, January 6-8, 1981. They represented a complete cross section of the industry, including regulatory and consumer interests. The goal of the NBGC was to create an awareness of the problems of beef grading and to provide a source of information upon which future proposals for improvement could be based.

Excellent presentations, wide exchange of information and research data, and *many opinions* resulted. Speakers included scientists, economists, cattle feeders, purebred breeders, meat packers and processors, regulatory personnel, and consumer interest groups. The conference was structured to allow ample discussion and dialogue. *Quality* grading received the most attention and was the primary concern of most conference participants. In fact, little discussion occurred about changing yield grading except for 1) the recommendation by Bob Kauffman, University of Wisconsin, to delete carcass weight and kidney knob from the yield grade equation and 2) the presentation by H. Russell Cross, RLHUSMARC, on the need to improve the accuracy of the graders in determining yield grade.

In the opening session, Frank Wollney, Wayne Poultry Division, Allied Mills, said that poultry no longer takes a back seat to red meats. Nearly all fast food chains have a chicken item on the menu, and a highly advertised one at that. His presentation was revealing to many persons involved in the beef industry. This poultry industry representative was on the NBGC program to make the industry aware that poultry consumption is increasing, while beef consumption had declined; also, to inform the beef industry that broilers reach a 1.84 kg slaughter weight in 7 weeks on 1 kg of feed and are surpassed only by fish in feed conversion. And to inform the beef industry that a more uniform product is produced by more uniform genetic resources and production systems, and that a quality grading system does not dictate when broilers or turkeys should be slaughtered.

Howard Freedon, Agriculture Canada, described the Canadian beef grading system that so many had heard about without knowing how it was structured or worked. The need for a change in the old Canadian system surfaced during a National Beef Industry Conference there in 1966. Research was strongly supported financially by beef producers' associations, but the Meat Packers Council was not interested in considering any major changes in the Canadian beef grading system. His description parallels the recent Iowa State NBGC and the strong support by U.S. cattle producers for quality grading changes.

It was emphasized that the Canadian system provides *much* more incentive for cattle feeders to market cattle before they are excessively fat. The A1 grade has an upper fat thickness limit of 1.27 cm for heavy weight carcasses, far below the 2.0 cm that generally distinguishes yield grade 4 from yield grade

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3 carcasses in the U.S. Because it has a cutability advantage over A2 grade, the A1 grade generally receives the highest price.

A panel discussion emphasized that the U.S. industry works essentially from a “desirable” versus “undesirable” concept. For example, yield grades 3, 2 or 1 are desirable; yield grades 4 and 5 are undesirable. Seldom are premiums paid for yield grades 1 and 2 over 3. National Association of Meat Purveyor specifications allow up to 1.9 cm fat cover on many subprimal cuts, which provides little incentive for cattle feeders to produce yield grade 1 and 2 carcasses, nor for meat packers to trim fat closer than 1.9 cm. This seems to be an important point that was not sufficiently addressed. If specifications allowed only 1.0 cm of fat cover, for example, packers and processors would quickly acknowledge the cutability advantage of yield 2 over yield grade 3 carcasses.

Our U.S. system places too much emphasis on “feeding quality into cattle” rather than relying on postmortem techniques to enhance or add to the quality. Dr. Bruce Marsh, University of Wisconsin, said that one unfortunate consequence of this highly empirical grading system is the emphasis on attaining high *visual* quality, almost regardless of its relevance to eating quality. Gene Schroeder, Palisade, Neb. emphasized that predicting visual quality in live animals is the real problem, and that feeding cattle for a high probability of grading Choice or bringing top market price often negates all the genetic improvements built into cattle.

A panel discussion that I chaired emphasized that feeding to an estimated percentage of Choice grade in conjunction with weight and number of days fed is the most common method used to determine when to sell cattle. Seldom are cattle slaughtered when they are at an optimum combination of feed efficiency and body composition. Much too often, packer buyers tell feeders that their animals need 20 or 30 days more feed before they are ready for slaughter.

Larry Cundiff, RLHUSMARC, who presented information on a comprehensive study of diverse biological types of cattle, said that feeding to a grade-constant endpoint (low Choice) is not justified by improved palatability.

Fred Parrish, Iowa State University, thoroughly reviewed quality traits and palatability, and emphasized that the relationship between marbling and palatability is low.

Concerns about inaccurate applications of grade standard to carcasses were eased when H. Russell Cross, RLHUSMARC, discussed the accuracy of grade application. A three-member National Grading Panel evaluated 5,582 beef carcasses to provide data for estimating percentage of error in assigning USDA quality and yield grades. The national percentage of error for quality grading was 7.6% in relation to the National Grading Panel error of 5.5%, so there is little reason to think that much improvement in the accuracy of quality grading can be achieved under the present system. In contrast, the national yield grading error was 11.6% in relation to the National Grading Panel error of 7.0%, which indicates that efforts to reduce errors in yield grading might be productive.

Bruce Marsh, University of Wisconsin, described the role of carcass fat covering in promoting tenderness (and probably other quality attributes) by prolonging early-postmortem high temperature in muscle. More marbling, more fat thickness,

more days on feed, etc. cause slower cooling. The temperature at 2 hr postmortem seems to be highly correlated with tenderness with higher temperatures indicating tenderness.

Daryl Tatum, Colorado State University, and I discussed the feasibility of including carcasses with a minimum of 7.6 or 10.0 mm fat cover OR Small and Modest marbling in the Choice grade. That fat cover is an insulator and a very good indicator of days on a high quality diet was not accepted by some segments of the industry. But few disagreed that fat thickness could be *evaluated more accurately* in a live animal than marbling can be. Additionally, fat cover could be used for grading carcasses before hot boning, whereas marbling cannot be evaluated in hot muscle (Kastner, Kansas State University).

Electrical stimulation, and the postmortem technologies of blade tenderization, aging, muscle stretching and enzyme tenderization were presented by Jeff Savell, Texas A&M University, and Dennis Olsen, Iowa State University, respectively. However, little discussion focused on including postmortem techniques in a grading system.

At odds with cattlemen are purveyors and their Hotel, Restaurant and Institution (HRI) customers who do not want reduced marbling standards for either Choice or Prime, fearing dissatisfaction from consumers. Marvin Walter, Carriage House Meat and Provision Co., Ames, Iowa, and representing the National Association of Meat Purveyors (NAMP), said that NAMP would vigorously oppose modifying the current standards for Prime and Choice. However, purveyors would support efforts to better utilize the U.S. Good grade, he said.

One thing that nearly all conference participants agreed on was that “Good” and “Standard” names are definite liabilities in merchandising beef in competition with grade names of “Prime” and “Choice.” Changing “Good” to “Elite,” for example, would make it much more glamorous.

Frank Srubar, Safeway Stores, Inc., said that the beef Safeway sells in the future, whether graded or ungraded, will come from leaner type carcasses. Beef Safeway buys must come without excess fat, he emphasized.

Thomas B. Smith, Community Nutrition Institute, Washington, D. C., said that most consumers want leaner beef with cost being the primary reason and diet-health concerns a close second. However, consumers will probably not be willing to accept less marbled beef just to get leaner beef, he said, which illustrates the enigma the industry faces. Consumers seem to want leaner beef, but expect to pay less for it and they don’t want any less quality (lower marbling). On the positive side, Thomas B. Smith did not say that consumers will vigorously oppose any reduction of marbling requirements in the grade standards. He emphasized that Good and Standard are terrible names for lean beef and that new, attractive names might make both grades much more appealing to consumers.

Gary Smith, Texas A&M University, discussed the comprehensive cooperative USDA quality study, and summarized that marbling differences were related to palatability across all grades. However, the adjacent grades of Good and Choice, were not significantly different in palatability.

Roger Mandigo, University of Nebraska, said that the present grading system is designed for the “middle meats,” which represent less than 25% of the carcass.

Ed Kline, Iowa State University and Michael May, Meat Quality Division, FSQS-USDA, said that grades improve marketing efficiency and provide producers with information to plan productive programs. Grades represent a common language in the industry and facilitate trading.

An excellent session on the future of the U.S. beef industry was presented by Michael Boehlje, Iowa State University and Larry Corah, Kansas State University. The U.S. beef industry must adjust to produce a competitively priced nutritious and palatable protein product. However, the adjustments will require *changes* in all segments of the industry. One possible change is in the grading system, but equally important will be changes in technology.

The NCA subcommittee on beef grading had developed several proposals on beef grading changes before the NBGC. One was favored over others and, after the conference, the committee firmed its position on recommending that a minimum of 7.6 mm (0.30 in) fat thickness and Slight marbling be included in Choice. The fate of that proposal was to be decided at the MCA Convention in Phoenix in early February.

The room in Phoenix was crowded to hear the background and justification for the subcommittee's proposal at the NCA Convention. Much discussion and debate followed. The Kansas Livestock Association delegates introduced a proposal for a new grade concept (Figure 1) to be superimposed on the present Good grade and the lower one-third of Choice. Most of the debate centered around the merits of the two proposals. Meat packers represented did not want an additional grade added to the system. No one seemed to have an answer to the question, "who will *promote* a new grade?" In addition, a new grade may not encourage less fat production any more than the NCA proposal would.

The grading committee's proposal prevailed after much discussion and debate about the merits of a new grade concept *versus* the grading subcommittee's proposal. The revised grading chart in the NCA proposal is shown in Figure 2. The Prime grade would be lowered to include Moderate marbling. The Choice grade would be modified to include carcasses with a minimum of 7.6 mm of white to slightly yellow fat cover *AND* Slight marbling. Carcasses with Small and Modest marbling would not require a minimum fat cover. The present Standard grade would be renamed Good, and carcasses with Slight marbling but less than 7.6 mm fat thickness would grade Good. No specific recommendations were made for mature carcasses except that USDA should consider consolidating quality grade names. No recommendations were made regarding yield grading.

The NCA proposal *does not force* cattle feeders to slaughter cattle before they get too fat, but should allow feeders to achieve 70% Choice with 30 to 50 days less feeding time. Paying premiums for yield grade 1 and 2, or shifting yield grades to make each leaner would create more economic pressure for feeders to produce leaner cattle.

One of the most important points made at Iowa State or Phoenix may have been by Kenneth Eng, Animal Nutrition

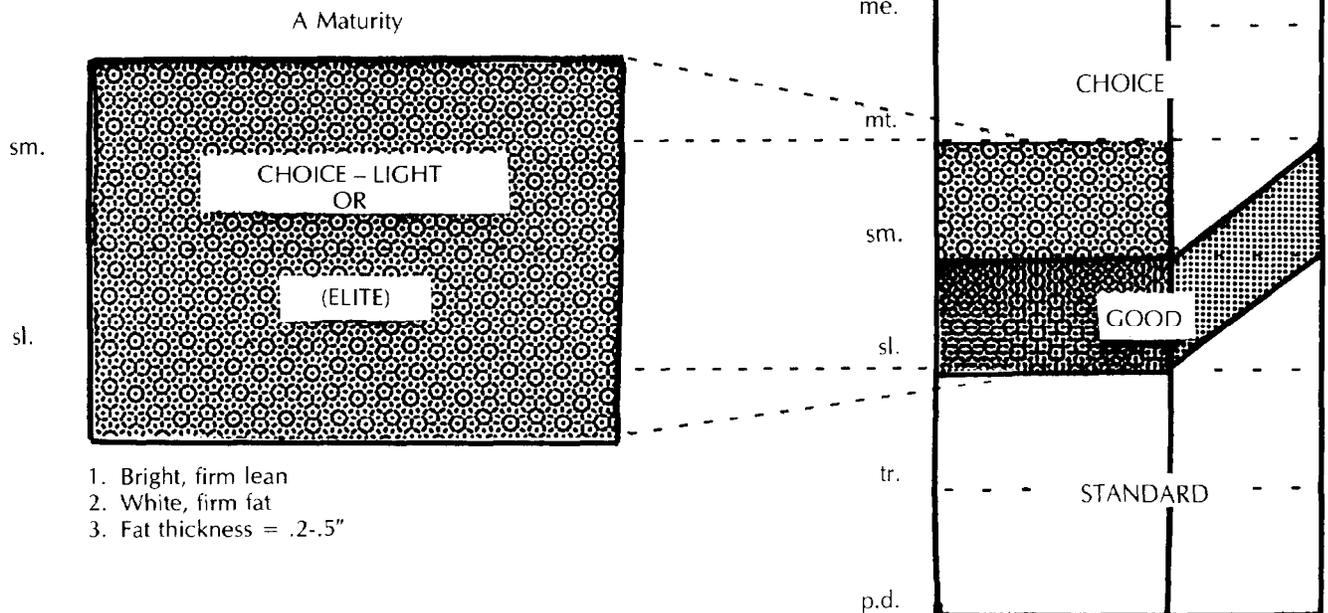


Figure 1. Proposed new grade concept

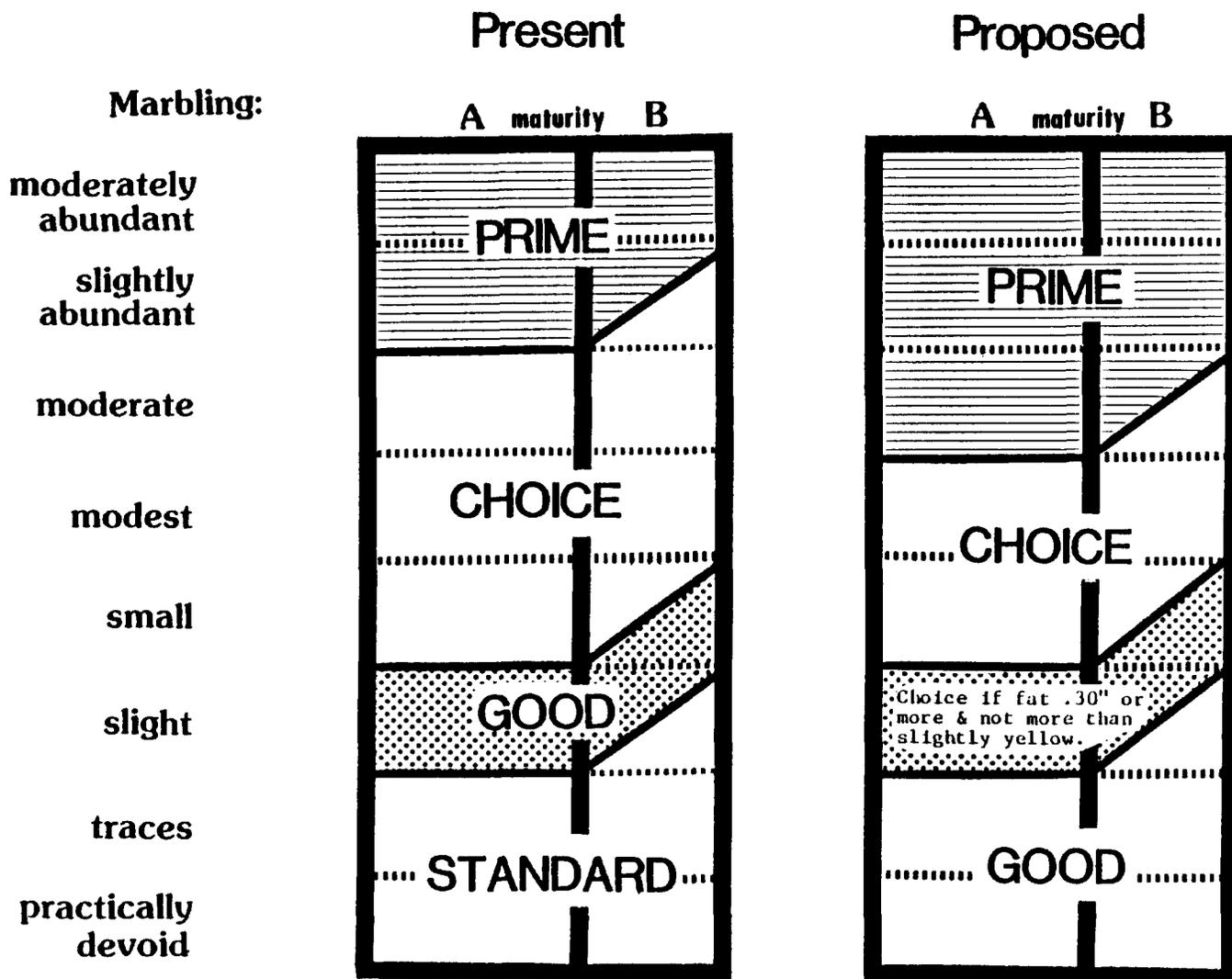


Figure 2. NCA beef grading proposal

Consultant, that cattle feeders, meat packers, and processors need to “change their attitudes” more than we need a change in grade standards.

Personnel in the Meat Quality Division of FSQS-USDA have indicated that changes will very likely be proposed in the near future. Indications are that changes will not include postmortem technology, but will still be based on inherent characteristics in the carcass. No drastic changes will be proposed unless they are supported by research.

*Discussion*

*H. D. Nauman, Missouri:* Do you or any one else in the audience have a more definitive idea of what USDA is planning to propose in the way of the new grading standards?

*Dikeman, Kansas:* I do not have a more definitive idea. I talked with a couple of their people and it seems that they are studying this internally and considering several possibilities in-house and do not want to reveal these until they have more or less agreed on it. Perhaps some of the other members of the audience may be able to answer that.

*Kennick, Oregon State:* As I recall, soon after we went on the ribbing system and evaluated marbling, work out of Texas indicated that we had about 5% fat out in the rib eye in cattle that graded Choice. This was ten years ago. A recent study from there indicated that where we have 5% fat, carcasses were grading USDA Good; whereas a Choice with “small” marbling analyzed from 6 to 8% fat. I think that the standards are just a little tougher as graders evaluate the borderline carcasses. At Portland we had the graders go through and grade 13 carcasses, then the supervisor and I went through the carcasses and they changed the grades on three. That’s quite a high percentage change and I sense that a program such as 60 Minutes taking these graders to the task does nothing but harm for the USDA and for the graders. In my opinion, if we just hang onto 5% fat and get a grade of Choice that would alleviate a great deal of the problem.

*G. Smith, Texas:* I think in a study we just did, it is still around 4.55 percent chemical fat associated with “small” marbling.

*Dikeman:* The data we have from the Meat Animal Re-

search Center cattle would indicate about 4.5 to 5% lipid for Small marbling. Now if you look at the entire Choice grade then the average could be set between 6 and 8% lipid if you consider the average in high Choice carcasses, but I think as far as the minimum for low choice would be about 4.5% intramuscular lipid.

*Kennick:* Okay, but the point was on this particular study, carcasses with the 5% fat were grading USDA Good, that to me is a problem.

*Davis, Texas Tech:* Do you think we could justify putting the word USDA Good on some of the lower quality Standard meat we have now? Do you think that would be misleading? Maybe going the other way? Has that been addressed? And what might the consumer reaction be?

*Dikeman:* The name Good or the grade Good has been used really quite infrequently as far as stamping it or rolling it on a carcass. If carcasses do not grade Choice, they are basically classified as a no-roll, or something else. I guess you are asking for my opinion. I don't think that's really a problem, because I don't think that consumers, retailers, purveyors are ever hung up at all about the name Good. I think that they would rather get rid of it or use it for some other lower classification than to keep it where it is.

*Kemp, Kentucky:* I think that we already let one word "Choice" dictate a lot of our thinking on beef grading. In my opinion, the purpose of a grading system is to provide a commodity in like segments for market. I think if you forget that and let somebody's idea on promotion take the whole grading system, then we are missing the boat.

*Dikeman:* If I could add a comment to that, something that

I think came out fairly strongly at the conference. Cattle feeders are basically shooting or aiming for a certain percentage of carcasses or cattle in the Choice grades in combination with days on feed and live weight. I am not disagreeing with you at all, but that seems to be basically the overriding factor when cattle are sold and deciding whether the feeder thinks he made money or not. The net result is an excess of fat production. We tend to forget about the other part of the grading system. The same would be true for yield grade. You know where we are focused around that Yield grade 3 and 4 breaking line. We are not considering the advantages of yield grade 2's or the extra disadvantages of 5's above and beyond yield grade 4's.

*Dell Allen, Kansas State:* I think what it all boils down to is that we are changing the pressures on the grading system because of economic conditions in the industry. If we are going to address the problem, the grading system needs to be changed so that a packer will bid on cattle with fewer days on feed at a premium price to get the feeder to move it. We get into the situation that the NCA proposal will allow that to happen, it won't mandate it to happen simply because with all cattle in a new grade, there will be no Choice grade. So, it's not going to correct the problem.

*Dikeman:* Dell and I have discussed the idea that perhaps a shift in Yield grades where it is tougher for a carcass to qualify for upper Yield grade 3 (less fat to reach a Yield Grade 3) would help force the cattle feeders to slaughter cattle before they become excessively fat. This was not really considered at the conference as being part of the proposal.