

## Beef Grading - Past and Present

### History

In 1916, official recognition was given to grades of beef by the U.S. Department of Agriculture for the purpose of establishing a national market news service. Before that time, the only grade standards available had been published by the Illinois Agricultural Experiment Station. In 1923, tentative United States standards for grades of beef were prepared and issued in mimeograph form, and meat grading was begun for two government agencies--the U.S. Shipping Board and the Veterans Bureau hospitals. The following year, on August 13, 1924, these tentative standards were published in Department Bulletin No. 1246, entitled "Market Classes and Grades of Dressed Beef." These were the first grade standards for meat issued by the Department of Agriculture.

In the summer and fall of 1925, hearings were held throughout the country for the purpose of discussing the proposed standards and securing the suggestions, criticisms, and comments of representatives of wholesale and retail meat trade, livestock commission firms, packers, college teaching and extension service staffs, livestock producers, livestock market reporters, and others. At none of the hearings were serious objections raised with respect to the standards, and it was generally agreed that universal standards were advisable.

As a result of the widespread interest in the marketing of livestock and meat that was created during and following the hearings, a meeting was held in mid-1926, for the specific purpose of discussing the advisability of grading and stamping the two highest grades of beef--Prime and Choice--and

of forming an organization for sponsoring such a service. This meeting was attended by approximately 250 prominent cattle breeders and feeders from all parts of the country, and it was their contention that if a system were developed for labeling the different qualities of beef so that consumers would have a reliable guide to the quality they desired, it would encourage the consumption of beef and also provide a means for reflecting consumers' preference back to the producer. The organization they formed was named the "Better Beef Association."

The Secretary of Agriculture assured the Better Beef Association that the Department would supervise the grading and stamping of beef on an experimental basis for one year provided a satisfactory agreement for its conduct could be reached between the producers and packers. A meeting of representatives of producers and national packers was called in December 1926. At this conference, the packers contended that the grading and stamping of beef was unworkable, but the Department and the Better Beef Association contended that it merited a trial. Their opinions prevailed, and the National Live Stock and Meat Board accepted the request of the Association that it assume the responsibility for developing the project to a workable basis. On March 1927, at a special meeting called by the Board and attended by representatives of the Better Beef Association, the Department, and the packers, an agreement was reached with respect to inaugurating the service. The Department agreed to station graders at ten cities; Prime and Choice grades of steer and heifer carcasses and cuts were to be graded and stamped upon request and without charge, with a stamping device developed by the Department. The packers agreed to give the service a fair trial and to include federally graded Prime and Choice grades of beef in their price quotations to their trade. The be

grading and stamping service was begun on May 2, 1927.

At the outset only four national packers signified their intention of using the service. The volume of grading during the first few weeks was disappointingly small, and investigation revealed that the packers were discouraging rather than encouraging the use of federally graded beef. This was done by indicating to prospective customers that federally graded beef was not available and by charging up to three cents per pound more for federally graded beef than for similar quality beef which was not graded. It also developed that the packers were developing their own private brands which they began to apply to beef in August 1927.

During the first year of experimental grading a total of 33 packers operating 49 plants in the 10 selected cities requested the service. Many smaller, independent packers who did not use the service at the outset soon realized that if they had their beef federally graded they could sell it on an equal basis with the national packers. Although it was originally agreed that beef would be graded only after orders were received for it, many of the smaller packers quickly broke away from that agreement and had all of their Prime and Choice beef graded. Thus, during the very first year of operation, the pattern for use of Federal grades that was to prevail throughout the ensuing years was fairly well indicated--the national packers for the most part were using grading only on demand while the independent packers, recognizing the benefits of Federal grading to them made increasing use of it.

On July 1, 1928, the grading service was discontinued as an experiment but continued as a voluntary, self-supporting service, with a fee of \$2.00

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per hour being charged those requesting the service. At the same time, grading was made available for all classes and grades of beef. Except for local ordinances in six locations which require Federal grading of meat sold in those areas, and for two periods of compulsory grading during emergency price control programs, meat grading has continued on the same voluntary, self-supporting basis.

In 1930, only 1.2 percent of the commercial beef production was graded and by 1940 this figure had increased to 8.3 percent. These figures indicate that the growth of the service was rather slow but steady until the first period of compulsory grading, September 1942-October 1946. Following this period the volume of beef graded remained at a much higher level than before. After the second period of compulsory grading, from May 1951 to February 1953, the volume of grading was again maintained at a much higher level than before. By 1955, 45.8 percent of the commercial beef production was graded and the all time high (other than during the compulsory periods) was in 1970 when 64.9 percent of the commercial production was graded.

A more meaningful measure of the growth of the grading program might be the expression of the percentage of the "fed-beef" production which was graded. This is because most of the beef which is graded is from fed cattle. It is estimated that, for the last 5 years, between 75 and 80 percent of the fed-beef production has been graded. And for the last 3 years, the quantity of beef which graded Prime, Choice, and Good accounted for approximately 73 percent of the estimated fed-beef production.

### Purpose of the Standards

Initially, the beef grade standards provided the basis for uniformly reporting the dressed beef markets, according to grades. However, their usefulness was thought to reach far beyond market reporting. The initiators of the standards believed that, if beef could be identified for quality, consumers would buy beef with greater confidence and increase their consumption of it and this, in turn, would indirectly stimulate the production of more and better beef cattle. In effect, they were looking for a system through which consumer preferences, as reflected in the marketplace, could be signaled back to them at the farm and feedlot.

As a language of commerce for describing beef's important value considerations, grades improve marketing efficiency and also provide cattle producers with needed information to plan their production and marketing programs. In addition to serving as a common denominator for transmitting signals about demand, the "quality" grademark is frequently credited with being a major factor in the consumer selection of beef. Although this is a basic objective of grades, most consumers are still unfamiliar with beef grade terminology. However, the use of grade by retailers--to maintain a uniform level in quality of beef that satisfies their customers--helps to accomplish that objective. Retailers use Federal grades to buy beef nationwide without the necessity of personal selection. This practice not only reduces marketing costs, but also has helped to create a national market for beef. Grades open sales outlets to all packers on a national scale, virtually from the day a plant begins production. Thus, beef grades serve to broaden competition for both cattle and beef.

The Federal grades are designed to identify the two most important value-determining characteristics of beef, quality of the lean and yield of trimmed retail cuts. Consequently, there is a relationship between grades and prices. However, the price of any grade is determined by normal market forces of supply and demand. For years USDA quality grades for beef have served as a guide to the eating quality of beef--its tenderness, juiciness, and flavor. The grades for steer, heifer, and cow beef are Prime, Choice, Good, Standard, Commercial, Utility, Cutter, and Canner, with the exception that cow carcasses are not eligible for the Prime grade. Quality grades for beef from young bulls, "bullocks" were established in 1973. This change reflected the results of research which compared the palatability of beef from steers and young bulls and indicated that young bull beef was slightly less palatable and slightly more variable in palatability than steer beef. At this time the quality grades for mature bulls were eliminated. The quality grades used for bullock beef are Prime, Choice, Good, Standard, and Utility.

Differences in carcass yields may be determined by the application of yield grade standards. The yield grade (1, 2, 3, 4, or 5) is determined by the evaluation of four factors which are related to carcass cutability. The relationship of these four factors--fat thickness over the ribeye; percent kidney, pelvic, and heart fat; area of ribeye; and hot carcass weight--to the yield grade is given in a mathematical equation in the standards. In practice, graders rapidly estimate and combine these factors to determine the yield grade. The effect of these factors on cutability is: (1) as fat thickness over the ribeye increases, the yield of retail cuts decreases; (2) as the percent of kidney, pelvic, and heart fat increases, the yield of retail cuts decreases; (3) as the area of ribeye increases, the yield of retail cuts

increases; and (4) as hot carcass weight increases, the yield of retail cuts decreases.

The significance of yield grades becomes evident when one realizes that carcasses of the same weight and quality grade--such as Choice--vary widely in cutability and may differ in retail cutout value by \$75 or more.

#### Changes in the Standards

Changes in the official grade standards, as such, are always confusing, particularly from the standpoint of consumers. However, standards for grades of agricultural products cannot be static--they must be dynamic in nature in order to be of greatest value to the industry. In keeping with this philosophy the Department has not been reluctant to make changes in the standards when it has felt that such would work to the advantage of the industry. Changes in standards may be proposed by the Department or offered as proposals by industry. However, before giving serious consideration to a change suggested by industry, the Department must be convinced that the change will make an improvement in the standards. All proposed changes are published in the Federal Register, a daily official publication of all official actions of the U.S. Government, and a period of time allowed for interested groups and individuals to submit their comments and suggestions. A final decision to adopt or reject the proposed changes is made only after all comments are received and analyzed.

Changes are usually made in the standards for one or more of the following reasons: (1) To clarify the intent of the standards or otherwise to improve the ease or uniformity of their interpretation, (2) to incorporate

the results of research findings with respect to the importance of various grade factors, or (3) to keep the standards abreast with established changes in consumer preferences and production practices.

Significant changes were made in the standards in 1939, 1941, 1949, 1950, 1956, 1962, 1965, 1973, and 1975. Some of the more prominent revisions or proposals include the dual grading proposal in 1962 (which first introduced yield grades but was not adopted), the adoption of optional yield grades in 1965, the development of separate quality grades for bullocks in 1973, and the most recent, 1975 revision.

#### The 1975 Revision

The 1975 revision, which generated a record response (4,549 comments), introduced several major changes in the standards. The standards were revised to eliminate consideration of maturity for determining quality for bullock beef and for steer, heifer, and cow beef in the youngest (A) maturity group (approximately 9 to 30 months). The minimum marbling requirements for the Prime, Choice, and Standard grades were modified so that they are now the same as that for the very youngest beef in the previous standards, while the minimum marbling requirement for the Good grade was raised slightly. In addition to these changes, conformation was eliminated as a quality grade factor and the maximum maturity (approximately 48 months) permitted for steer, heifer, and cow beef in the Good and Standard grades was reduced to the same as permitted for Prime and Choice (approximately 42 months). Lastly, the revision required that all carcasses quality graded also be yield graded.

Having always recognized the need for a more factual basis for the standards, the Department has continually encouraged and otherwise supported



research designed to identify and evaluate the factors that affect beef's palatability and a considerable amount of such research has been conducted. Research had confirmed for some time that marbling and maturity are the two most important factors that can be used in grading to identify differences in palatability. However, recent research indicated that as beef increases in maturity within the youngest (A) maturity group referenced in the standards, an increase in marbling was not necessary to insure a comparable degree of palatability. Therefore, for such young beef, one of the major changes made was the elimination of the requirement, in the Prime, Choice, Good, and Standard grades, for increased marbling with increased maturity within this young maturity group. However, for more mature beef in each of these grades, increased marbling requirements with increase maturity were retained, but the marbling levels were reduced to coordinate them with the marbling requirements for the younger beef. The slightly increased marbling requirement for the Good grade, which causes a concurrent decrease in the width of the grade and the decreased maximum maturity for the grade has helped to make the "new" Good grade very uniform. This grade should be very useful to retailers and others whose trade prefers beef with less internal and external fat than has been associated with Choice grade beef. The changes in marbling and maturity relationships for the new standards are illustrated in Figure A.

The elimination of conformation as a quality grade factor has helped to make quality grades better indicators of beef's palatability. This change was proposed in 1962. As in 1962, there is no information which indicates that variations in conformation are related to differences in beef palatability. Under the previous standards, because of the manner in which

variations in conformation affected the quality grade, beef includes in most grades could be quite variable in quality. This resulted from the fact that, in the previous standards, conformation and quality evaluations had to be balanced to determine the final quality grade. For example, a carcass with Standard grade conformation and Choice grade quality of lean was graded Good. Under the quality grade standards as revised--with conformation eliminated as a factor--each quality grade includes only beef of that quality. This change should make the grades more reliable indicators of quality and more useful to consumers in getting the kind of beef they really desire.

The contribution of conformation as a measure of carcass yield of retail cuts is much better measured by the yield grades. Therefore, the requirement that all carcasses which are quality graded must also be yield graded will help to better reflect a beef carcass' true value throughout the marketing chain.

#### How the New Standards are Working

During the time that the grade change was being proposed, much dissatisfaction was proclaimed by the consumers, especially with the quality change. The remark heard quite often was, "we will now be paying Choice prices for Good grade beef." This reflected the fact that many consumers felt they would be getting lower quality meat and still paying the same price. However, since implementation of the new standards, complaints and remarks from dissatisfied consumers have been very minimal.

Meat packers were concerned with the additional time and expense they felt would result from requiring all beef graded to be both quality and yield graded. However, the changes in the quality grade standards which allow

graders to quality grade more rapidly and changes in grading procedures have resulted in only slightly more total time being required to grade a carcass.

Other than the normal problems associated with adjusting to a new system, acceptance of the new standards by the industry and consumers has been satisfactory.

#### Current Distribution of Beef Being Graded

In Tables I and II the distribution of beef by quality and yield grades is presented. The comparison of figures for 1974 and 1976 in Table I represent the changes in the distribution of beef quality grades following the 1976 change. The only significant changes were an increase from 6.3 percent to 10.1 percent in the proportion graded Prime and a decline from 11.6 percent to 5.7 percent in the proportion graded Good. With more favorable fed cattle prices, and as feeders adjust to the revised grade standards, it is expected that the percent graded Prime will decrease and the percent graded Good will increase from present levels. These figures may be a little misleading about U.S. beef production since nearly all of the beef which qualifies for Prime and Choice is graded, but relatively little of the beef in the other grades is actually graded. Most of the beef which qualifies for Commercial, Utility, Cutter, and Canner is from mature cows.

The distribution of yield grades for specific reporting periods in 1976 is reported in Table II. As indicated in this table, on a national basis, the distribution of beef graded by yield grade has remained remarkably stable since the implementation of the revised standards. Of the total

beef graded, Yield Grade 2's and 3's have accounted for an average of 28.4 and 57.5 percent, respectively, with Yield Grade 4's accounting for an average of 10.3 percent. As in the case of the lower quality grades, much of the Yield Grade 4 and 5 beef may not be grade identified.

#### More Changes to Come?

Although it is the Department's intent to have all changes made in grade standards based on sound research, findings from research do not always give a clear cut "yes or no" answer to a specific question. From time to time different groups or organizations may challenge a revision or proposed revision in grade standards made by the Department. This necessitates the continuance of Department supported research to constantly evaluate the accuracy of current grade standards. Even since the 1975 revision, the Department has completed a study reevaluating the yield grade standards and has completed the collection of data on one of the most extensive beef quality projects in history. The constant surveillance of grade standards in this manner enhances the Department's ability to keep standards as workable, useful, and accurate as possible.

TABLE I  
PERCENTAGE DISTRIBUTION BY BEEF QUALITY  
GRADES FOR SELECTED PERIODS

	<u>1974</u>	<u>1975</u>	<u>1976*</u>
	- - - - - Percent - - - - -		
Prime	6.3	5.1	10.1
Choice	79.4	77.3	80.6
Good	11.6	12.9	5.7
Standard	.4	.7	.4
Commercial	.3	.4	.6
Utility	1.9	3.1	2.2
Cutter	.1	.5	.4
Canner	@	@	@
Volume of top three grades as % of Est. Fed Bee. Production	72	74	73

@Less than .05 percent

\*Final Period of C.Y. 76 estimated

TABLE II

PERCENTAGE DISTRIBUTION BY BEEF YIELD GRADES  
FOR SPECIFIED REPORTING PERIODS DURING 1976\*

<u>PERIOD</u>	<u>YIELD GRADES</u>				
	1	2	3	4	5
2/29-3/27	1.7	27.4	59.0	10.4	<del>1.7</del> 1.4
3/28-4/24	1.5	27.8	59.1	9.9	1.3
4/25-5/22	1.6	28.0	58.1	10.5	1.6
5/23-6/30	1.6	27.8	58.1	10.6	1.7
7/1-7/17	1.6	27.9	58.2	10.5	1.6
7/18-8/14	1.7	27.6	57.5	11.1	1.8
8/15-9/11	1.6	27.5	57.9	10.8	1.8
9/12-9/30	1.9	27.7	57.5	10.9	1.9
10/1-10/23	2.2	28.2	57.0	10.5	1.9
10/24-11/20	2.3	29.9	55.8	9.9	2.0
11/21-12/18	2.4	30.3	55.6	9.5	1.9
12/19-1/15/77	2.6	31.1	56.0	8.6	1.5
Average	1.9	28.4	57.5	10.3	1.7

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\*Actually includes data for 15 days of 1977