

SECTION I. INTRODUCTION

What Is Beef Quality Assurance?



Beef Quality Assurance (BQA) is a program developed to ensure that beef and dairy cattle are produced and managed in a manner that will result in a safe and wholesome beef product for the consumer. This is the definition and **the goal** of BQA. Specifically, BQA is designed to enhance carcass quality by preventing residues, pathogen contamination and carcass defects such as injection site blemishes and bruises. The Mid-Atlantic BQA Certification Program is based on recommended national guidelines and scientific research. This program enables beef and dairy producers to enhance their product, maximize marketability, and strengthen consumer confidence.



Is BQA Necessary?



*From
Gate to Plate,
BQA is
a positive step
for producers
and consumers.*



Concern over food wholesomeness and safety is an important consumer issue. It is of utmost importance that the public knows beef is a safe product.

BQA is a good business practice, which can identify potential problem areas to avoid potential product defects. A BQA program will help secure consumer confidence for expanding domestic and export markets.

All sectors of the industry – *from seedstock, cow-calf and dairy producers, to stocker operators, backgrounders and cattle feeders* – must take responsibility for the production of a safe food product through proper animal care, handling, and management practices.

The level of consumer confidence in beef significantly affects consumer eating habits and impacts the future of our industry. Consumer confidence is essential if we are to “steak” our claim in the meat case.

Beyond safety, the economic importance of BQA can be seen when analyzing the top quality challenges within the beef industry. These quality challenges include: injection site blemishes, rib brands, excessive external fat, excessive seam fat, inadequate muscling, dark cutters, inconsistent size of meat cuts, and non-uniform cattle.

All meat industries face similar concerns. By following BQA guidelines and management practices, beef producers increase the value of their product in the eyes of consumers, while enhancing their stewardship of natural and financial resources.

Members of each industry sector should assume responsibility for the role they play in delivering a quality beef product to their respective markets.

Will Rogers once said, “The world is run by those who show up.” It is time for all of us to show up. By working together toward continued improvement of our product and our responsiveness to consumers -- we all benefit.

BQA Objectives

1. Set production standards in your operation that can be met or exceeded.
2. Establish systems for data retention and record keeping, which will allow validation of management activities and fulfill program goals.
3. Provide hands-on training and education for participants to meet or exceed the guidelines of the BQA program and to realize the benefits of such programs.
4. Provide technical assistance through: state cattlemen's associations, BQA certified veterinarians, and BQA certified university extension staff. These individuals will be available for on-site assistance if desired.



The History of Beef Quality Assurance

Consumers have always expected safe food. In 1980, because of beef safety concerns, cattlemen began investigating ways to ensure that their production practices would pass the scrutiny of the consumer.

In 1982, the United States Department of Agriculture Food Safety Inspection Service (USDA-FSIS) began working with the beef industry in the U.S. to develop the Pre-harvest Beef Safety Production Program. The beef industry adopted the term Beef Quality Assurance (BQA).

Implementing BQA practices provides cattlemen an important key for avoiding additional government regulation. Voluntary producer-driven programs have proven very successful and will continue to allow the industry the flexibility needed to produce safe, wholesome food in an economical manner.

Between 1982 and 1985, three feedlots and USDA-FSIS evaluated production practices to assess residue risks. In 1985, after careful analysis and adjustment of production practices, these three feedlots were certified by the USDA-FSIS as Verified Production Control feedlots.



What was learned during those three years now serves as the backbone for the National Cattlemen's Beef Association (NCBA) BQA program. In addition, NCBA Beef Quality Audits have revealed other beef quality issues, which are addressed in this manual. Success from these efforts is clear. In feedlot beef cattle for instance, violative chemical residues have almost disappeared, and injection site lesions have been reduced by more than 67 percent.

The principles of BQA are similar to those developed by Pillsbury's quality control program for supplying food to the NASA space program. This Hazard Analysis Critical Control Point program (HACCP) gained USDA acceptance and is presently the outline for quality assurance programs in packing houses and processing facilities.



HACCP is a process of: determining what could go wrong, planning to avoid it, documenting what you have done, and the additional step of validation and monitoring for success. As of January 1, 2000, all livestock processing plants have developed HACCP programs according to USDA guidelines, which include food-borne bacterial pathogen control.



The Mid-Atlantic BQA program is designed to bring best management practices to the farm that, along with HACCP principles applied at slaughter and processing facilities, will ensure a safe, wholesome, uniform and quality beef product for consumers.



Meeting the Industry Quality Challenges

National Beef Quality Audits reflect lost value

The purpose and importance of BQA programs can be seen when reviewing the top quality challenges of three National Beef Quality Audits (NBQA).

These quality issues include:

- ◆ injection site blemishes
- ◆ excessive external fat/inadequate muscling
- ◆ excessive seam fat
- ◆ dark cutters
- ◆ bruising
- ◆ inconsistent carcass size

Good production practices can reduce, if not eliminate, the occurrence of these quality problems. Section III. of this manual outlines Best Management Practices (BMPs) in key areas to help producers meet the industry's beef quality challenges. These include implementing the genetic and production management systems that have been shown to reduce beef quality defects, improve beef eating quality characteristics (such as flavor, tenderness and juiciness), and ensure food safety.

Table 1. NBQA (1991, 1995 and 2000) estimated economic losses associated with quality defects in fed steers and heifers.

Defect	1991 NBQA	1995 NBQA (based on 1995 logic and prices)	2000 NBQA (based on 2000 logic and prices)
Excess fat (external, seam and 20% trim combined)	189.78	*1991 value did not account for leaving 1/4 inch trim	27.42
Muscling	29.47		20.34
Sub Total	\$219.25		\$ 47.76
Palatability	2.89		7.64
Marbling	21.68		28.41
Maturity/Gender	4.24		2.25
Sub Total	\$28.81		\$38.30
Hide Defects	16.88		24.30
Carcass Condemnations	1.35		0.46
Offal Condemnations	0.91		3.44
Injection Sites	1.74		5.11
Bruises	1.00		4.03
Dark Cutters	5.00		6.08
Grubs/Blood Splash/Yellow Fat and Calloused	0.38		1.74
Sub Total	\$27.76		\$45.16
Control Weight/Size	\$4.50		\$4.66
TOTAL	\$279.82		\$135.88
			\$100.10

***NOTE:** The NBQA conducted in 1991 determined the economic losses due to total waste (excess fat) to be \$219.25 (Table one, column 1). However, this value did not account for allowing one-quarter inch trim to remain on cuts of beef. Therefore, the 1995 NBQA values of total waste under both scenarios: a) removing all excess fat from beef cuts (Table one column 2), and b) total waste fat in excess of one-quarter inch trim on beef cuts (Table one, column 3). The latter is more reflective of standard industry practices.

Potential Value Loss

Today's estimated potential loss in value due to quality defects continues to exceed \$100 for every fed steer and heifer marketed in the U.S. (Page I-6 -- Table one, Column 3), bringing a total annual loss of \$3.9 billion to the beef industry. The NBQA, conducted in 1991, 1995, and 2000, examined the incidence and severity of quality defects that occur from selection, management, and production practices.

The value loss due to management defects can begin to be recovered simply by evaluating and altering the management techniques used in today's beef production systems. Current problems that producers have control over include: injection site blemishes, hide damage, bruises, and dark cutters.

Capturing Added Value

It is interesting to note that improved awareness and implementation of BQA practices from 1991 to 2000 have reduced the incidence of injection site blemishes. But at the same time, the per head *value* lost to these defects has actually increased (Table I).

As the food industry develops new products and packaging processes, correct injection sites and



- (Above) These injection site lesions were the result of a 5ml 7-way injection given to a calf at 50 days of age, and were not discovered in the processing of the carcass until the whole muscle was sliced for retail. A retailer would send this back for a refund. Not only do these blemishes cause economic losses to the industry, they inflict real damage to customer confidence in the overall quality and reliability of our product.



Shoulder Top Blade (Flat Iron) Steak – Cut from the Chuck



Round (Sirloin) Tip Center Steak – Cut from the Round



Bottom Round (Western Griller) Steak – Cut from the Round,



Shoulder Center Steak (Ranch Cut) – Cut from the Chuck

techniques become even more critical to capture added value. New beef products have been introduced, which add value to traditionally under-utilized round and chuck primals. The popular Flat Iron Steak, cut from the chuck, is one example. Furthermore, the use of modified atmosphere (MA) packaging processes for case-ready beef can discolor the meat in areas close to where an injection has been given -- even if the muscle contains no blemishes from the injection.



Animal health companies continue to research and develop products with BQA-friendly routes of administration. Administering animal health products according to label directions, marketing cattle at an optimum end-point, reducing stress in cattle handling, and eliminating extremes in size of breeding stock are some of the ways by which quality defects are reduced and the market value of beef cuts is increased. ***BQA Manual Sections III-A through F describe Best Management Practices for achieving these goals.***

Mid-Atlantic Meat Animal Youth Quality Assurance

4-H and FFA are youth development programs that focus on teaching youth responsibility, community service, decision making, and leadership skills through a variety of projects that meet their interests. The subject matter skills taught in these programs are the foundation for youth development and can be of economic, social, and/or personal value to youth in their future.

Today's youth livestock producers are in a unique position. While they are a small part of the livestock industry, as a whole, they are often the "window" through which the public sees animal agriculture. It is essential that the view seen by the consumer is a positive one (K-State Research & Extension).



The National Institute for Animal Agriculture (NIAA, 2003) reported that, "nearly one percent of the animals produced in the United States entering the food chain are marketed through youth livestock program auction sales." This may appear to be a small percentage of food products entering the market; however, NIAA stated that it was enough to cause public concern if wholesomeness was compromised and could ultimately jeopardize consumer confidence in the entire livestock industry.

Quality Assurance has become a buzz word in the livestock industry. It is important that youth producers understand and adhere to the same quality assurance standards implemented by the livestock industry. In an effort to address quality assurance and ethical issues, many state 4-H and FFA programs have implemented educational efforts for youth (Goodwin, Murphy, & Briers, 2002). These efforts range from developing and making resources readily available to mandatory training.

The mission of any youth quality assurance program should be to maximize consumer confidence and acceptance of the food products produced via youth livestock projects. If youth projects produce a food product, directly or indirectly, then youth need to participate in quality assurance programming (Colorado, 2005).

The Mid-Atlantic Meat Animal Youth Quality Assurance program is a proactive educational program for 4-H and FFA members that focuses on the youth:

- ▶ Understanding their responsibilities as a livestock producer.
- ▶ Understanding best management practices for the responsible production of livestock.
- ▶ Understanding their responsibilities to provide a safe, wholesome food product to consumers.
- ▶ Understanding how to follow labels carefully for every feed additive, medicine, or product used in their livestock production system.
- ▶ Practicing honest, ethical behavior in the production of livestock.

References

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