Troubleshooting
Overcoming the challenges of poultry carcass grading

By Christine Alvarado, Ph.D. on 10/19/2011

In this article:
Basics of grading
New opportunities for grading
Technology keeps up
Conclusions

The current U.S. poultry industry market segments include whole birds (with or without giblets), parts and further processed products. The value of production within these segments has changed significantly over the last 20 years. There has been a dramatic shift from producing whole birds to producing more parts and further processed products – and most of that shift has been due to consumer demands for more convenient and versatile products.

One interesting component of these market segments is that retail still accounts for 57 percent of sales while 43 percent accounts for foodservice sales. In other words, consumers are still purchasing more from retail establishments than from restaurants.

Basics of grading

For both retail and foodservice, all poultry meat must be inspected by the USDA’s Food Safety Inspection Service (FSIS) and will have an FSIS inspection shield indicating it is wholesome.

However, an additional service that USDA provides is grading, a voluntary program the establishment pays for to ensure Grade A or high-quality products. Grading is conducted through the USDA AMS (Agricultural Marketing Service) branch by a licensed federal grader.

Grading consists of evaluating for shape, fleshing, and ensuring the carcass or part is free of defects. Grade A indicates the highest quality and the typical grade seen in the retail cases. It also indicates that a part or whole bird is free from defects, broken bones, skin tears, exposed flesh and ensures good coverage of fat under the skin and meatiness. To indicate the product has been graded, a USDA AMS shield is placed on the package with the term “USDA Grade A”.

Insight and best practices for beef, pork and poultry processors
A decade ago, all parts and whole birds were AMS-graded. At that time, most processors graded carcasses and parts for consumer convenience and product branding.

However, the industry soon realized that grading was expensive and time-consuming. On average, an AMS grader costs a processor $35-$40 per hour in addition to overtime hours, holiday hours, shift differential costs, travel and per diem if applicable and volume charges.

These costs incurred by the processor are evident on the consumer costs of the poultry product graded. With grain and fuel costs at an all-time high, processors have explored new opportunities for grading. An average cost for a processor to produce grade A carcasses from USDA AMS is around 0.2 cent per pound. The price differences may not be evident at the retail level, but plants that internally grade can receive a higher profit margin.

**New opportunities for grading**

To combat the issue of cost, some processors are internally grading. Generally, plant employees are trained in grading techniques and can complete the process with less cost and fewer scheduling issues. However, this internally graded product cannot be labeled as USDA AMS Grade A. They are not federal employees, and therefore the grade shield cannot be labeled on the product.

For most off-brand products, this internal grading has become somewhat of a standard. However, most branded retail products still have the USDA-AMS Grade A designation, mostly to keep the brand name status. The questions most processors are asking is whether consumers really look at the USDA Grade A on parts and whole birds.

With the increase in internal grading come new challenges in poultry grading. Lack of consistency due to different training and worker turnover can lead to the most common mistakes of misgrading.

**Technology keeps up**

To combat some of these issues, processors may implement new technology such as vision grading. According to researchers at the Georgia Tech Research Institute, a leader in vision technology research, machine vision has been researched as a potential solution for grading processes.

Vision technology relies on complex software algorithms and can be very expensive to implement. These complex computers and programs must be resistant to wear and tear, sanitizing solutions and both cold and wet environments. However, these computers do show up for work, are never late and can produce more consistent results than an employee.

A few poultry equipment manufacturers have a grading system that incorporates vision technology of whole birds. One supplier has a poultry digital grading system that can replace manual grading. Another one determines the quality grade based upon certain characteristics of the bird in combination with the number of occurrences of these characteristics on the bird. The processor can determine the grade of each quality level per bird part and per typical defect. Following grading the bird can be designated to a specific area of the plant based upon weight and quality. The system operates mostly using color grading standards.

According to the Georgia Tech Research Institute, color is very important in making quality decisions. Therefore development of these vision technologies includes image acquisition and processing. One excellent component associated with these automated grading systems is the data can be shown real-time and can be saved for data analysis. Data on quality grades can be logged and track via the computer based on time, shift or flock. Once collected this data can be used to
computer based on time, shift or flock. Once collected this data can be used to implement stricter quality control standards during production or processing for an overall process improvement.

**Conclusions**

There are several options in grading poultry for retail from the traditional USDA AMS grader present in the processing facility to newer technology using complex computer programs that utilize vision grading. Each of these processes requires personnel cost or equipment costs.

The goal of grading is to maintain consumers’ confidence to ensure their purchasing power. Therefore, each facility must acknowledge the benefits and disadvantages of each system mentioned and decide cost and overall acceptance of quality standards.

**Related Information:**

BAADER-Johnson supplies its Carcass Care® primary processing equipment, which is specifically designed to reduce contamination while producing a high-quality, undamaged finished carcass that enhances success in the advanced processing phases. The BAADER ProFlex Cut-up offers the speed and precision cutting required to achieve current processing demands. Click here for more information.

**Reader resources:**

Search Supplier Directory: Graders, Poultry

**Be the first to comment**

Name: Steven Thomas
Subject: 
Comment: 

Comments are limited to 2000 characters. 
Note: Promotional messages or sales solicitations are not appropriate. Messages containing racist, sexist or vulgar language will be removed and can be cause for membership cancellation. For more information see Terms of Use.