

Egg Quality

Exterior Quality

In commercial egg-processing plants, eggs are graded simultaneously for exterior and interior quality. However, in judging contests, it is necessary to grade eggs for exterior quality separately because handling of eggs by contestants can change the grade. Exterior quality standards reduce the number of eggs with defects that detract from the egg's appearance or that would have a low probability of surviving the rigors of handling in normal market channels. In other words, we want the consumer to have clean, unbroken eggs with practically normal shape and texture. Contestants should not be too harsh in assigning grade to eggs that may have minor defects. This is especially important when judges have gained experience in evaluating eggs with various degrees of abnormalities.

Exterior Quality Grades

Table 2 summarizes the descriptive terminology used in the USDA Egg Grading Manual to help determine an egg's grade by exterior quality. Note that *color is not a quality factor that is evaluated* relative to the grading of eggs. For 4-H Poultry Judging Contests, eggs will be assigned the grades of A, B and Dirty. The Grades AA and A have identical standards. The factors that affect exterior quality are discussed below. Eggs graded for exterior quality cannot be handled during the contest.

Table 2. Summary of Standards for Exterior Quality of Eggs

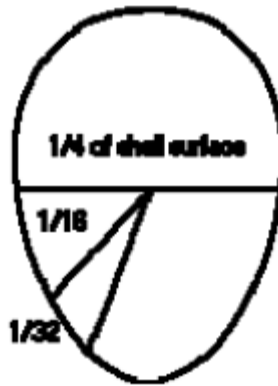
Factor	Grade		
	AA or A	B	Dirty
Stain	Clean—may show small specks, stains or cage marks that do not detract from general clean appearance of the egg—may show traces of processing oil.	Slight or moderate localized stains less than 1/32 of shell or scattered stains less than 1/16 of shell.	Prominent stains. Slight or moderate stains covering more than 1/32 if localized and 1/16 of the shell if scattered.
Adhering Dirt or Foreign Material	NONE	NONE	Adhering dirt or foreign material (1.0 mm in area or greater)
Egg Shape	Approximately the usual shape.	Unusual or decidedly misshapen (very long or distorted).	
Shell Texture	May have rough areas and small calcium deposits that do not materially affect shape or strength.	Extremely rough areas that may be faulty in soundness or strength. May have large calcium deposits.	
Ridges	Slight ridges that do not materially affect shape or strength.	May have pronounced ridges.	
Shell Thickness	Free of thin spots.	May show pronounced thin spots.	
Body Checks	Absence of body checks.	May show pronounced body checks.	

Stains

Grade A eggs must be clean. These eggs can show traces of processing oil (used to preserve freshness). This processing oil may create a shiny or opaque appearance. Eggs are assigned Grade B if they have slight stains or moderate stains covering less than 1/32 total area of the shell if the stain occurs in one localized area; or 1/16 total area of the shell surface if the stains are scattered (two or more stains). Figure 22 will help to visualize these areas.

Dirty eggs have prominent stains, or have slight or moderate stains covering more than 1/32 of the shell if localized, and 1/16 of the shell if scattered. (Add up the stained areas to determine total size.) Eggs with adhering dirt or foreign material are also classified as Dirty.

ONE SIDE OF AN EGG



Contestants will be evaluating only the egg's exposed surface. The underside of the egg should be considered free from defects. Evaluate only what you see.

A. Localized moderate stain covering approximately 1/32 of the shell surface. Grade B.



B. Scattered moderate stain covering approximately 1/16 of the shell surface. Grade B.



C. Prominent stain or moderate stain in excess of allowable stain size for B quality is graded Dirty.



D. Any egg with adhering dirt is graded Dirty.



Figure 22. Specifications for exterior quality of eggs.

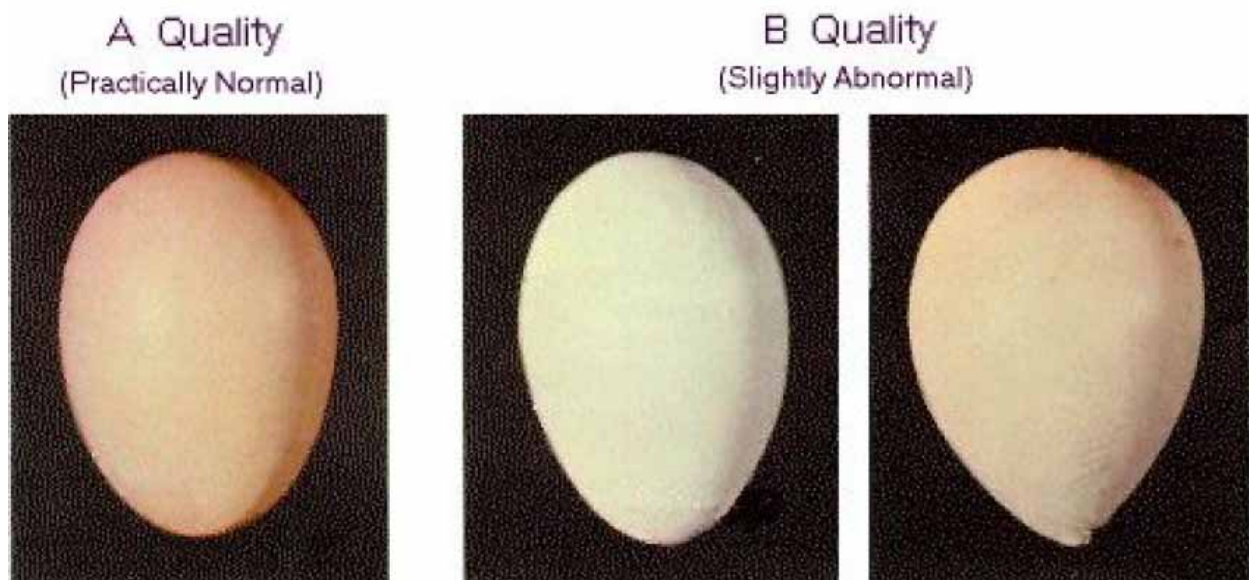
Adhering Dirt or Foreign Material

Grade A and B eggs cannot have any adhering dirt or foreign material. Eggs with adhering material (3-dimensional) larger than a speck (about 1.0 mm) should be classified as Dirty. Small specks of dust or lint that may have settled out of the air should not be considered.

- **Clean** - A shell that is free from foreign material and from visible stains or discolorations. An egg may be considered clean if it has only very small specks or stains, or if such specks or stains are not of sufficient number or intensity to detract from the generally clean appearance of the egg. Eggs that show traces of processing oil on the shell are considered clean unless otherwise soiled. **(AA and A Quality)**
- **Slightly stained** - A shell that is free from adhering dirt, but which has slight stains which do not appreciably detract from the appearance of the egg. When the stain is localized, approximately 1/32 of the shell surface may be slightly stained, and when the slightly stained areas are scattered, approximately 1/16 of the shell surface may be slightly stained. **(B Quality)**
- **Dirty** - The shell must be unbroken with adhering dirt or foreign material, or having prominent stains covering more than 1/32 of the shell surface if localized or 1/16 of shell if scattered. **(Dirty)**

Egg Shape

A considerable range of egg shapes may be considered "approximately the usual shape" or Grade A. Eggs that are spherical (round) or too long to fit in the egg carton should be graded B quality. B quality grade for egg shape will include eggs that are clearly misshapen or that have definite flat areas.



Shell Texture

Eggs with faulty texture are much weaker in shell strength and may be broken during distribution. Shells with large calcium deposits (greater than 1/8 inch in diameter) should be classified as Grade B. Eggs with small calcium deposits are classified as Grade A. There is no standard for the number of calcium deposits, which means that small calcium deposits over the entire shell may be classified as Grade A if otherwise qualified. A good rule of thumb is that if you were to pull your fingernail across a calcium deposit and a good size hole would be created if it came off, the egg would be classified as Grade B.

Ridges

Ridges can result in weakened shells. Many eggs show small ridges, and most of these should be classified as Grade A. Those eggs with large ridges are Grade B.

Shell Thickness

The shell should appear thick enough to with- stand reasonable handling without breaking. Grade A eggs must have thick shells with no thin spots. Thin shells or thin spots would place an egg in Grade B. In all cases, the shell must not be broken.

Body Checks

Body checks can cause weakened shells. This is a condition in which the egg shell looks like it is cracked but the shell is intact. Body check occurs during shell formation when the shell is cracked and then partially calcified before being laid. An egg with body check is classified as Grade B.

Contestant #

**Class 13: Exterior Quality Eggs
National & State 4-H Poultry Judging Card**

Egg #	Quality			Score
	A	B	Dirty	
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				

Total Score

