



Kentucky 4-H Poultry Judging Contest Market Poultry Division



Grading Ready-to-Cook Poultry

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Revisions to the Market Poultry Division

In 2021, major revisions were made to the market poultry division of the 4-H poultry judging contest. The market poultry division now includes one class each of:

- ready-to-cook broiler carcasses to grade
- ready-to-cook roaster carcasses to grade
- parts identification
- parts grading
- further processed boneless poultry products

Each class is worth 100 points, for a total of 500 possible points for the division. This factsheet will cover the evaluation of further processed poultry products.

This factsheet looks at grading ready-to-cook carcasses.

The main change in this class is the addition of No Grades.

Score Cards

Figure 1 shows the cards used for grading the ready-to-cook carcasses in the 4-H poultry judging contest. Each carcass is marked as Grade A, B, C, or No Grade (NG). Any carcass with no box marked will receive zero points. Any carcass with two boxes marked will receive the lower score.

Contestant #: S-69
Name: JANE DOE
County: Pike
**KENTUCKY 4-H
POULTRY JUDGING EVENT**

CLASS D: RTC ROASTER CARCASS Quality

RTC No.	Quality				Score
	A	B	C	NG	
1	X				
2			X		
3	X				
4		X			
5				X	
6			X		
7			X		
8		X			
9	X				
10	X				

TOTAL SCORE: _____ / 100
(Lose 3 points for crossing A-B and B-C lines;
Lose 4 points for crossing C-NG line)

Contestant #: S-69
Name: JOHN DOE
County: Pike
**KENTUCKY 4-H
POULTRY JUDGING EVENT**

CLASS C: RTC BROILER CARCASS Quality

RTC No.	Quality				Score
	A	B	C	NG	
1	X				
2				X	
3	X				
4	X				
5		X			
6				X	
7			X		
8		X			
9		X			
10			X		

TOTAL SCORE: _____ / 100
(Lose 3 points for crossing A-B and B-C lines;
Lose 4 points for crossing C-NG line)

Figure 1. Examples of completed cards for the two RTC carcass grading classes in the 4-H poultry judging contest.

Grading Ready-to-cook Poultry

In a 4-H poultry judging contest, participants are required to grade 10 RTC broiler carcasses and 10 roaster carcasses. The individual carcasses are hung from shackles (see Figure 2). The carcasses can be hung from the front or the back (see Figure 3). They can also be hung from one leg or two (see Figure 4). Any pop-up timers in the breast meat, such as those in the carcasses in Figure 4, should be left in place and not considered in the carcass grading.



Figure 2. Set up for grading the RTC carcasses in the Kentucky state 4-H poultry judging contest.



Figure 3. Examples of Ready-to-Cook carcasses hung from the front (left) or back (right).



Figure 4. Examples of Ready-to-Cook carcasses hung from two or one leg.

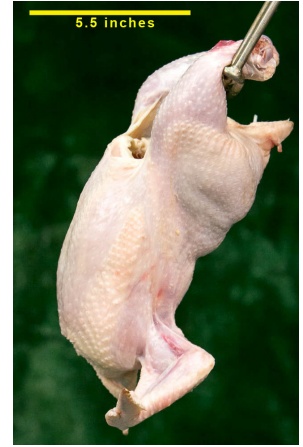


Figure 5. Example of a tilted shackle to see the broken bone in the drumstick.

Participants may NOT touch the carcasses in any way. They are allowed, however, to handle the shackles. The shackles can be gently turned to see the entire carcass as long as you do not touch the carcass itself. Participants can also carefully tilt the shackle to check for broken bones (see Figure 5).

Carcasses are graded as A, B, C, or No Grade based on USDA standards (see Table 1). Determination of grade is based on the amount of exposed meat (called flesh), the number of broken or disjointed bones, and missing parts.

A carcass can be divided into six different parts – each wing (2), each leg (2), the entire breast and the entire back (see Figure 6). To determine the grade of a carcass, determine the grade for each of the six parts and the grade for the carcass will be the lowest grade observed in the individual parts. It is important to remember that for each leg, which is the drumstick and thigh together, all sides of the leg must be considered including the inner cavity area. The point at which the breast ends and the back starts is along the side of the carcass and identifiable by the change in feather follicle pattern (see Figure 7).

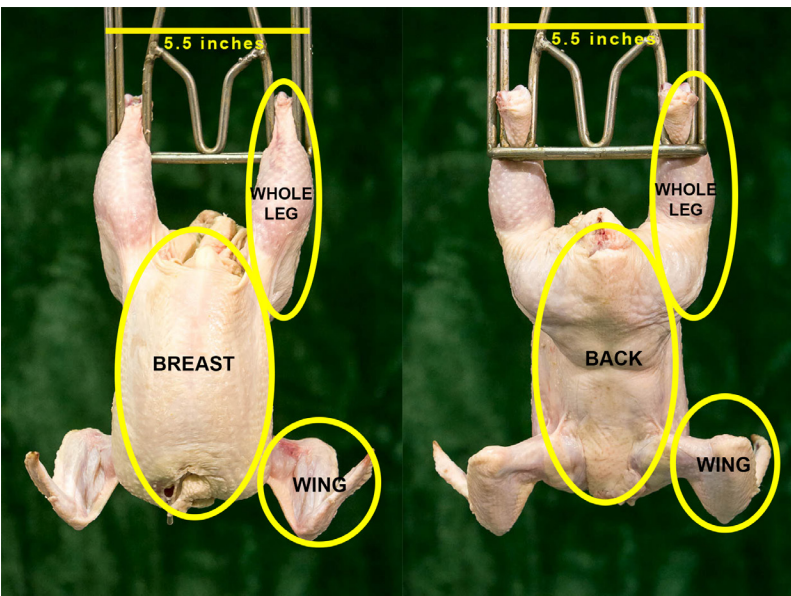


Figure 6. The six parts of a carcass are the two wings, two whole legs, back and breast.

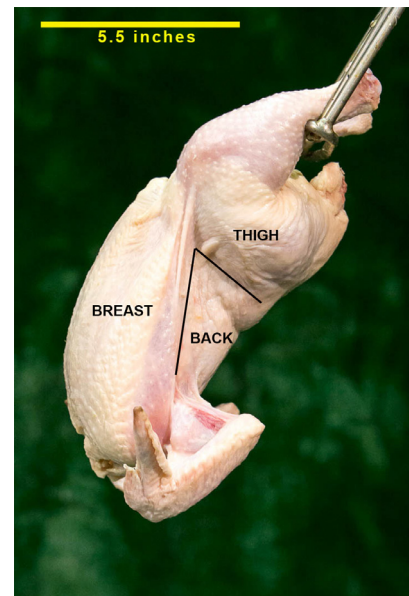


Figure 7. Junction of the thigh, whole breast and back is where the pattern of feather follicles changes along the side of the carcass.

Exposed Flesh

During processing, carcasses often receive cuts, tears, and trims as a result of a miscut with a knife or tearing of the skin during the automated processing operation. Cuts, tears, or trims must be completely through the skin so that the meat can be seen in order to downgrade a carcass.

The weight of the carcass only impacts the amount of exposed flesh on a Grade A carcass. As indicated in Table 1, the amount of exposed flesh allowed on a Grade A carcass is based on the weight of the carcass as well as the part affected. For example, a Grade A

roaster carcass (6-16 lb.) is allowed more exposed flesh on the breast and thigh ($\frac{1}{2}$ inch) than that allowed on a smaller broiler carcass (2-6 lb.) ($\frac{1}{4}$ inch). Similarly, a Grade A roaster carcass is allowed 2 inches on the back and wings versus $1\frac{1}{2}$ inches on the smaller broiler carcass.

A Grade B carcass can have up to $\frac{1}{3}$ of the flesh of any part visible if meat yield is not materially affected. A Grade C carcass has more than $\frac{1}{3}$ of the flesh showing. There is no limit to the amount of exposed flesh allowed on a Grade C carcass—the carcass could be totally skinned and the lowest grade it can have is a C.

Table 1. Summary of USDA specifications for standards of quality for individual whole carcasses.

Factor			A Quality		B Quality	C Quality	No Grade
			Breast and Legs	Elsewhere (wings and back)	Entire Carcass*		
Exposed Flesh	Carcass weight	2 – 6 lb.	$\frac{1}{4}$ inch	$1\frac{1}{2}$ inches	No more than 1/3 of the flesh exposed normally covered by skin	Over 1/3 of the flesh exposed normally covered by skin No limit on exposed flesh, provided meat yield not affected	Flesh removed from any part in which the normal meat yield is materially affected (>1/8 deep and diameter of a quarter coin or larger)
		6 – 16 lb.	$\frac{1}{2}$ inch	2 inches			
Disjointed and Broken Bones			1 disjoint No broken bones		2 disjoint OR 1 disjoint and 1 non-protruding broken bone OR 1 non-protruding broken bone	Any protruding, broken bones No limit on disjoints or broken bones	N/A
Missing Parts			Wing tips		Wing to 2nd joint	Wing to 3rd joint (entire wing)	Back area removed wider than the base of the tail and/or extending beyond the hip joints Flesh removed from any part in which the normal meat yield is affected (>1/8 deep and diameter of a quarter coin or larger)
			Tail removed at the base		Tail and back area not wider than the base of the tail and extending up to halfway between base of tail and hip joints	Tail and back area not wider than base of tail extending up to hip joints	

*The parts of the carcass shall be: each wing (2), each leg (2), the entire breast (including rib area), and the entire back (width of the hip joints to the width of the wing joints).

If there is a cut in the part with exposed flesh as in Figure 8, but no meat is missing, the cut does not affect the grade. If there is flesh removed from any part in which the normal meat yield is materi-

ally affected ($> \frac{1}{8}$ inch deep and diameter of a quarter coin or larger) the result is a No Grade. For example, in Figure 9 there is meat missing from the thigh resulting in a No Grade classification.

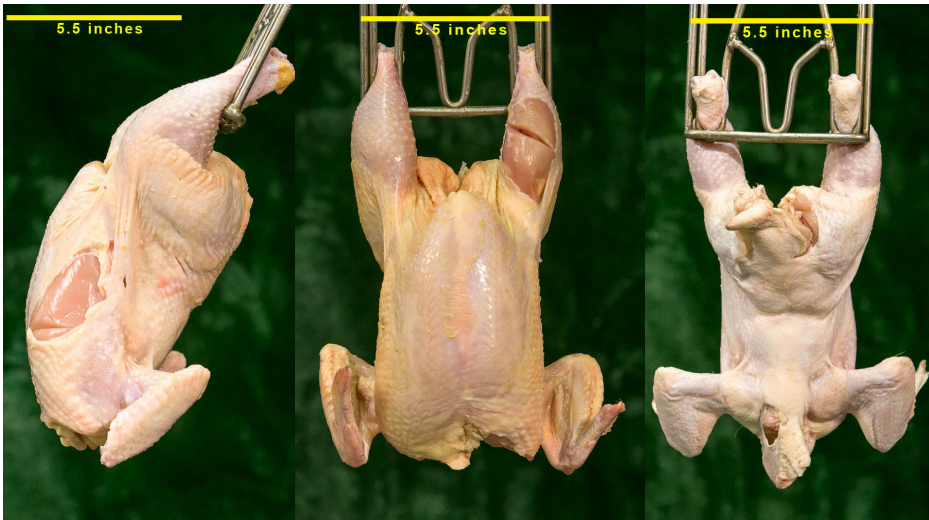


Figure 8. Examples of Grade B carcasses with a cut into the breast, drumstick, and thigh meat without meat yield being affected.



Figure 9. A carcass with meat missing in the thigh making it a No Grade.

Sometimes a carcass or part may have more than one cut, tear, or trim, as is the case of the roaster carcass in Figure 10. When there is more than one area of exposed flesh on a particular part, add the total amount of exposed flesh to determine the grade for that part. In the example in Figure 10, assuming that there is no exposed flesh on the sides of the carcass which are not showing, and no meat is missing, the total of exposed flesh would be less than $\frac{1}{3}$ of the breast and each whole leg making each part a Grade B. So, the carcass would be Grade B based on exposed flesh.

It is important to examine the carcass very carefully since the cuts on the breast and legs, which are only allowed $\frac{1}{4}$ - $\frac{1}{2}$ inch of exposed flesh depending on the carcass size, may be quite small as shown in Figures 11 and 12.

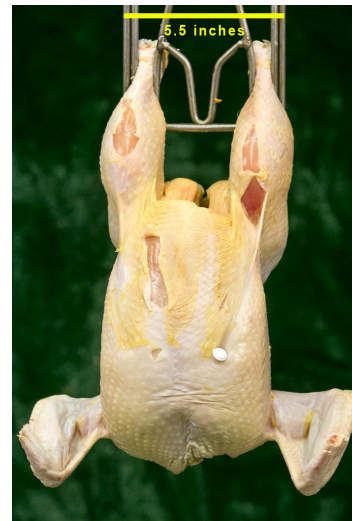


Figure 10. A Grade B roaster carcass with multiple areas of exposed flesh on the breast.

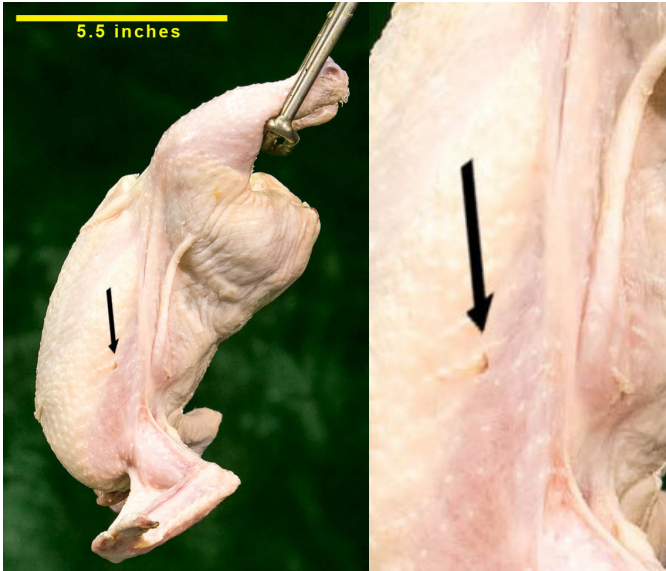


Figure 11. Example of a Grade A broiler carcass with a small cut totaling less than 1/4 inch.

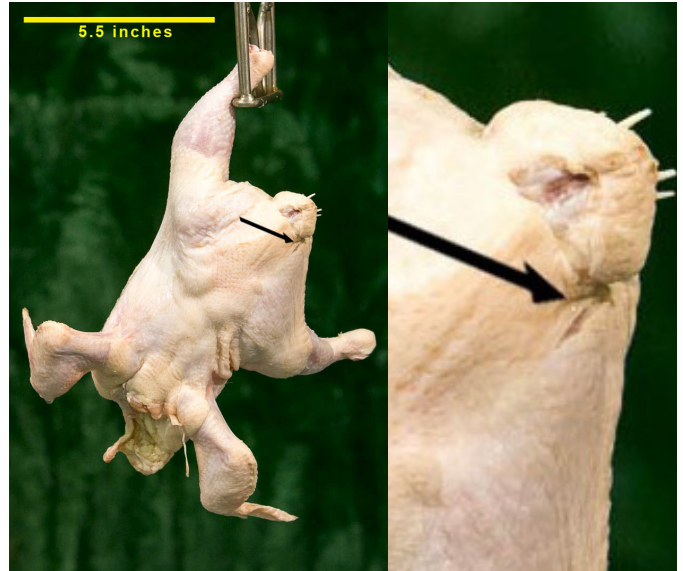


Figure 12. A Grade B broiler carcass with a small amount of exposed flesh near the tail totaling more than 1/4 inch.

Processing cuts near the vent and/or breast opening less than 1 inch beyond the opening are acceptable and should not be considered in grading the carcass (see Figures 13 and 14). Figure 13 shows processing cuts in the vent area affecting the amount of flesh exposed on the breast. In the left carcass, the processing cut is very small and would not affect the grade. In the middle carcass, the processing cut is slightly larger, but still less than 1 inch so it too would not adversely affect the grade of the carcass. In

the right carcass, however, the processing cut is more than 1 inch, downgrading the carcass to a Grade B.

Evisceration cuts can also occur in the vent area, but the amount of exposed flesh on the thigh is affected rather than on the breast. When evaluating this type of processing cut it is important that the cut be continuous with the body cavity. A cut that occurs in the same area but doesn't start in the body cavity is not considered a processing cut (see Figure 14).



Figure 13. Examples of broiler carcasses showing various lengths of processing/evisceration cuts at the vent, exposing breast meat. Only the far-right carcass would be a Grade B carcass for exposed flesh.

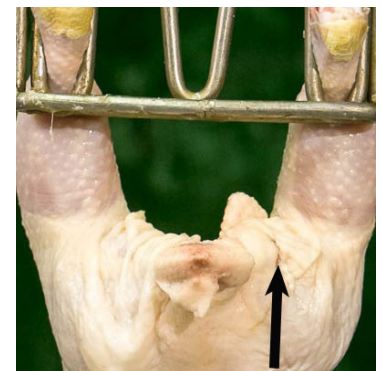


Figure 14. Example of a cut near, but not continuous with the vent, so not considered an evisceration cut.

Figure 15 shows processing cuts in the vent area. On the left and middle carcasses, the processing cut is less than 1 inch so would not adversely affect the

grade. On the right carcass, however, the processing cut is greater than 1 inch which would downgrade the carcass to a Grade B based on expose flesh.



Figure 15. Examples of broiler carcasses showing various lengths of processing/evisceration cuts at the vent, exposing thigh meat. Only the far-right carcass would be a Grade B carcass for exposed flesh.

Figure 16 shows processing cuts in the neck area, with the amount of exposed flesh on the breast affected. There amount of exposed flesh on the left carcass is less than 1 inch so does not affect

the grade of the carcass. On the right carcass, however, the processing cut is longer than 1 inch downgrading the carcass to a Grade B based on exposed flesh.



Figure 16. Examples of roaster carcasses showing processing/evisceration cuts in the neck area with the amount of exposed flesh on the breast affected. The carcass on the left would be Grade A while the carcass on the right would be Grade B for exposed flesh.

It is important to check the keel bone on carcasses with exposed flesh at the tip of the keel. If the tip of the keel bone and its associated meat is cut off, it would be a No Grade carcass (see Figure 17).



Figure 17. Example of a No Grade carcass because of missing meat at the tip of the keel.

Disjointed and Broken Bones

A disjointed bone occurs when an intact bone (i.e., not broken) is out of the socket. Typically, you can see the end of the bone that should be in the joint. Broken bones occur between the two joints and can be protruding or non-protruding. A protruding broken bone is a broken bone where a portion of the broken bone breaks the skin and is protruding through. A non-protruding broken bone, as the name implies, does not break the skin.

A Grade A carcass can have one disjoint but no broken bones. A Grade B carcass can have up to two disjoints but only when there are no broken bones. A Grade B carcass can also have one non-protruding broken bone with or without one disjoint. Any more disjoints or

broken bones would downgrade the carcass to a Grade C. Any carcass with a protruding broken bone is automatically a Grade C.

The joints most likely to be affected include:

- joint between the thigh and the drumstick
- joint between the thigh and the main part of the body (hip)
- joint between the second and third portions of the wing
- joint between the wing and the main part of the body

Figure 18 compares the positioning of the drumstick in a carcass hung from one leg with and without a disjointed hip. Figure 19 compares the positioning of the drumstick in a carcass hung from one leg with and without a disjointed between the drumstick and thigh.

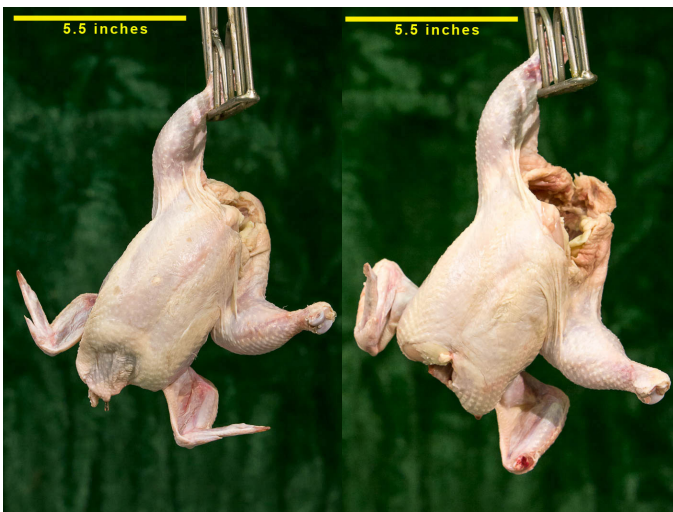


Figure 18. Examples of carcasses without (left) and with (right) a disjointed hip. Note that the drumstick is pointing up when no disjoint is present.

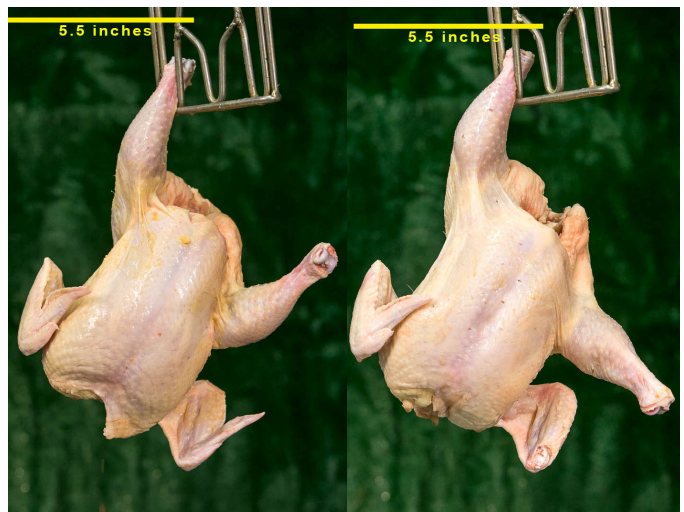


Figure 19. Examples of carcasses without (left) and with (right) a disjointed hip. Note that the drumstick points down when there is a disjoint between the drumstick and thigh.

Figures 20 and 21 show examples of carcasses with disjoints in the wings. In Figure 19 the right carcass has a wing disjointed at the third joint. In Figure 20, the right carcass has a disjointed wing disjointed at the second joint.

As indicated in Table 1, a Grade A carcass cannot have any broken bones,

protruding or not. A Grade B carcass can have one broken non-protruding bone as long as there is not more than one disjoint as well. A broken wing in the mid-portion is considered a single broken bone, even though there are, in reality, two bones—radius and ulna—in the wing.

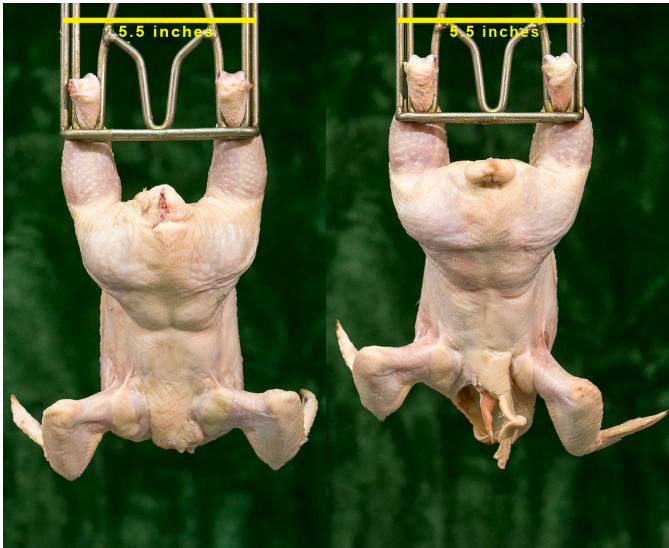


Figure 20. Comparison of a carcass with no disjoints (left) with a carcass that has a wing disjointed at the third joint (right). Note that the left wing droops at the shoulder and the wing tip no longer points up.

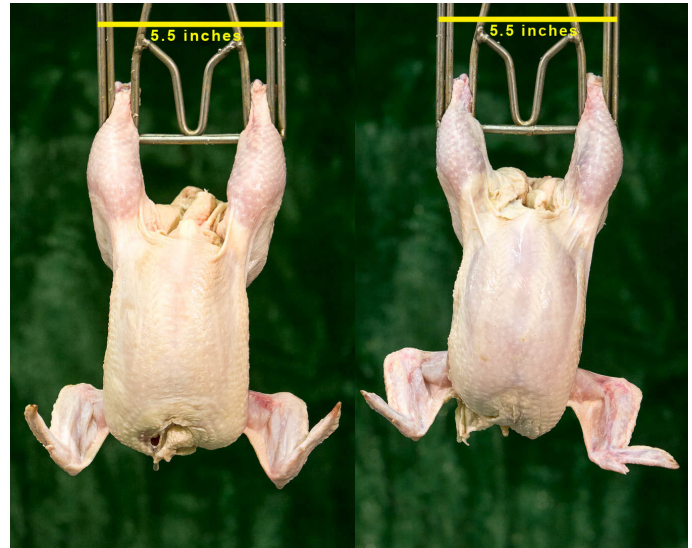


Figure 21. Comparison of a carcass with no disjoints (left) with a carcass that has a wing disjointed at the second joint (right). Note that the flat now points sideways instead of up.

Figure 22 shows examples of broken bones in the drumstick while Figure 23 shows examples of broken wing bones. In the left photo of each figure, the broken bone does not protrude though the skin while in the right photo the end of a broken bone is clearly protruding through the skin. A non-protruding broken bone is permitted on a Grade B carcass but any protruding, broken bone would be a Grade C.

It is important to remember that participants in a poultry judging event cannot touch any of the carcasses being graded. It is possible, however, to handle the shackles from which the carcasses are suspended. When look-

ing for broken bones in the leg tilt the shackle slightly and look for bends in the legs (see Figure 22). When looking for broken or disjointed bones in the wing, you can gently move the shackle in a half circle back and forth and watch the movement of the wing. A broken and disjointed bone is more likely to flop when the shackle is twisted in this manner. You can also detect a broken bone by looking at the curvature of the wing. A bent wing bone indicates that it is most probably broken (see Figure 23).

If any broken bone breaks the skin so that the end of the broken bone can be protruding, it is automatically a Grade C carcass.

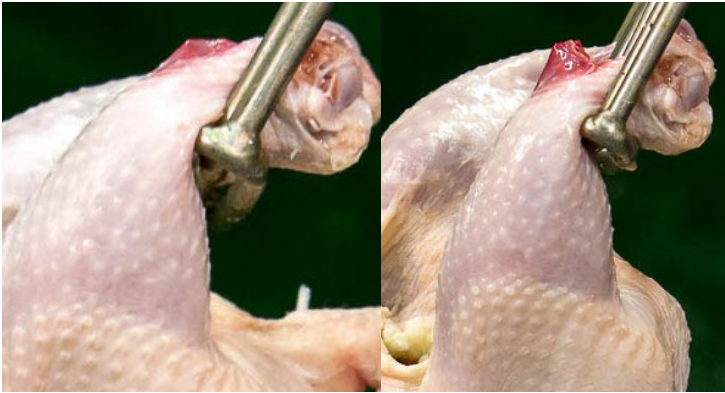


Figure 22. Examples of broken drumsticks with non-protruding (left) and protruding (right) bones.



Figure 23. Examples of broken wing flats with non-protruding (left) and protruding (right) bones.

Missing Parts

The parts to be considered when evaluating a ready-to-cook carcass for missing parts are the wings, tail, and part of the back area. It should be noted that the carcass weight does not play a role in judging carcasses for missing parts.

Wing

Wings can be missing to the first, second or third joint (see Figures 24 and 24). When the wing tip is removed, the wing is said to be missing to the first joint. The wing tip is not an economically important part of the carcass so a Grade A carcass can have one or both

wing tips removed. When a wing is missing to the second joint both the wing tip and flat have been removed. Missing a wing top the second joint would make the carcass a Grade B. When an entire wing is missing it is said to be missing the wing to the third joint and both the flat and drumette have been removed. The flat and drumette are used for making buffalo wings and thus have more economical importance than the wing tip. Missing an entire wing would make the carcass a Grade C. If breast meat is removed along with the wing, the carcass automatically becomes a No Grade (see Figure 25).



Figure 24. Example of carcasses with no wing parts missing (left), wing missing to first joint (middle), and wing missing to the second joint (right).

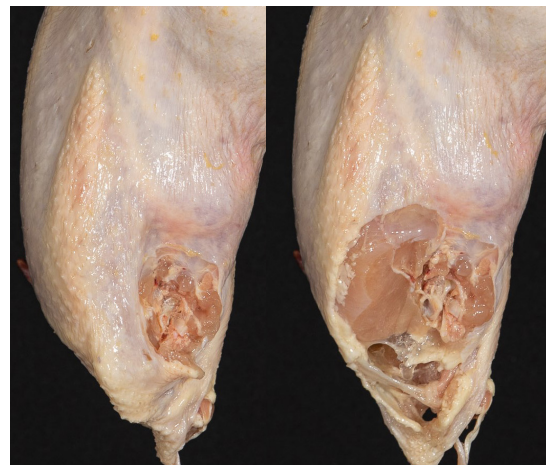


Figure 25. Examples of a carcass with the entire wing missing. The left carcass has no missing breast meat and is a Grade C. The right carcass had breast meat removed in addition to the wing so is a No Grade.

Tail and back

Figure 26 shows the anatomical references for the amount of back that can be missing on a carcass. A Grade A carcass may have all or part of the tail missing where the tail joins the back (see Figure 27). A Grade A carcass can have the tail missing but cannot have any portion of the back missing past the base of the tail.

A Grade B carcass can have a portion of the back missing no wider than the base of the tail and less than half way between the base of the tail and the hips. If the missing back portion extends past this half way point but not past the hips, it is a Grade C carcass. If the missing back portion is wider than the hips or extends past the hips, it is a No Grade carcass.

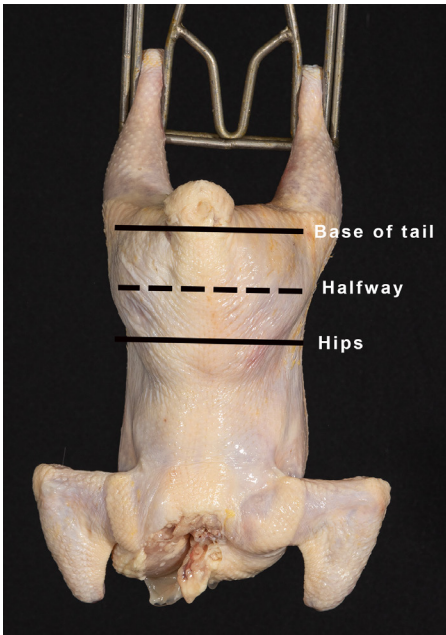


Figure 26. Anatomical references for missing back portions.

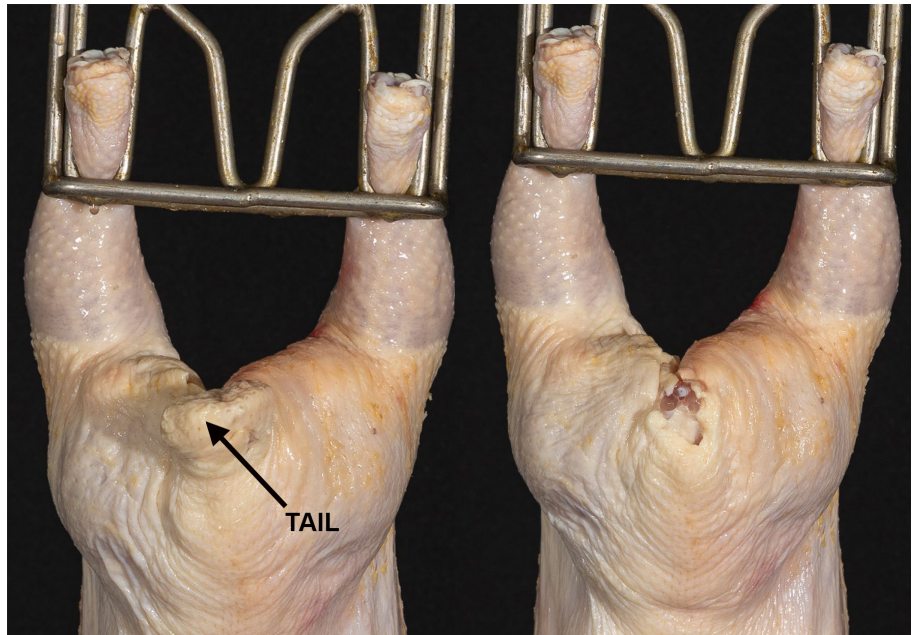


Figure 27. Examples of carcasses with (left) and without (right) a tail.

Figure 28 shows examples of Grade A, Grade B and Grade C carcasses for missing back. It is important that the missing portion not be wider than base of the tail and not extend past the hips. Such carcasses would be classified as No Grade (see Figure 29).

If any other part is missing, other than those discussed above, the carcass is a No Grade. For example, in Figure 30 the drumstick is missing. This would make the carcass a No Grade.

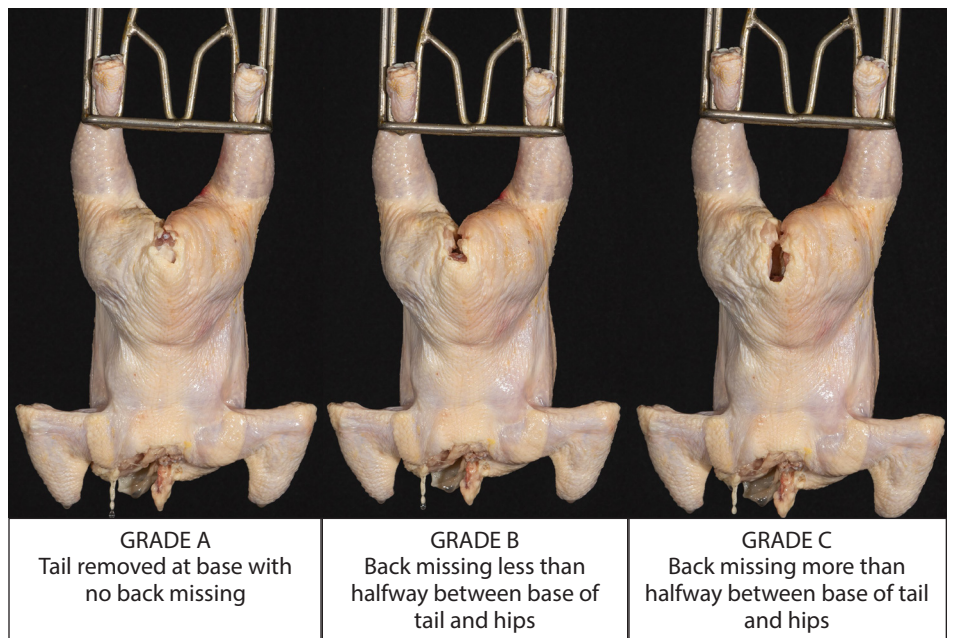


Figure 28. Carcasses with different amounts of back missing.

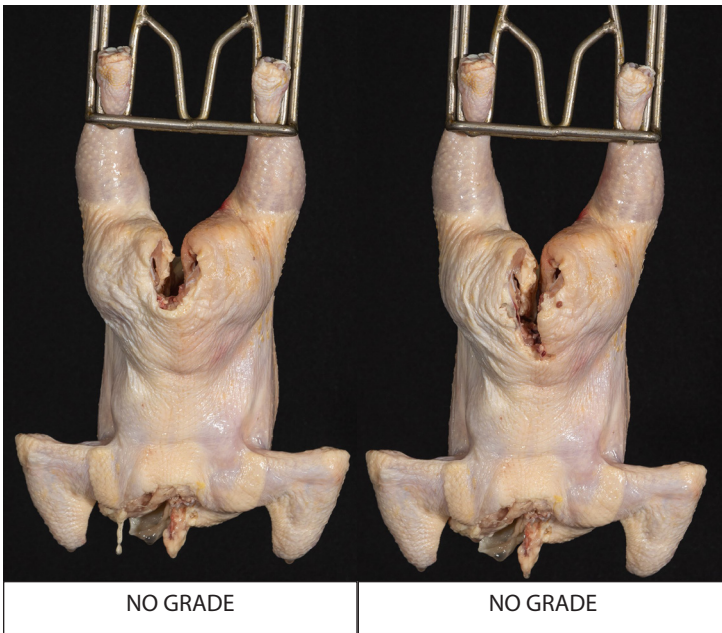


Figure 29. Examples of No Grade carcasses because of missing back portions. The left carcass is missing back wider than the base of the tail and the right carcass is missing the back portion past the hips.



Figure 30. Example of a No Grade carcass because of missing drumstick.

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