

Market Demands on Broilers



UNITED STATES DEPARTMENT OF AGRICULTURE
 AGRICULTURAL MARKETING SERVICE

March 1, 1954

SUMMARY OF STANDARDS FOR QUALITY DRESSED AND READY-TO-COOK CHICKEN
 (Minimum Requirements and Maximum Defects Permitted)

FACTOR	A QUALITY		B QUALITY		C QUALITY
<i>Conformation:</i>	Normal		Practically normal		Abnormal
Breastbone	Slight curve, 1/8" dent		Dented, curved, slightly crooked		Seriously crooked
Back	Normal (except slight curve)		Moderately crooked		Seriously crooked
Legs & Wings	Normal		Moderately misshapen		Misshapen
<i>Fleshing:</i>	Well fleshed, moderately long and broad breast		Fairly well fleshed on breast and legs		Poorly fleshed
Breastbone	Not prominent		Not prominent		May be prominent
<i>Fat Covering:</i>	Well covered—some fat under skin over entire carcass		Sufficient fat on breast and legs to prevent distinct appearance of flesh through skin		Lacking in fat covering over all parts of carcass
	Broilers or fryers only moderate covering				
<i>Pinfeathers:</i>	Breast and Legs	Elsewhere	Breast and Legs	Elsewhere	
Dressed:	Practically free	Practically free	Relatively few	Slight scattering	Numerous
Pins and hair	Practically free	Practically free	Few scattered	Few scattered	Scattering
Ready-to-cook	Practically free	Practically free	Few scattered	Few scattered	Few scattered
Nonprotruding pins	Practically free	Practically free	Few scattered	Few scattered	Few scattered
Hair	Free	Free	Free	Free	Free
Protruding pins	Free	Free	Free	Free	Free
<i>Cuts and Tears:</i> ¹	Free	1 1/2"	1 1/2"	3"	No limit
Missing skin ²	None		3 areas totaling not more than 3/4 inch	Tail to hip bone width of feather tract	No limit
Disjointed bones	1		2		No limit
Broken bones	None (except 1 nonprotruding wing bone if fryer)		1 Nonprotruding (may be in leg or wing)		No limit
Missing parts	Wing tips		Wing tips and if R-to-C 2nd wing joint and tail		Wing tips and R-to-C wings and tail
<i>Discolorations:</i> ³					
Flesh bruises	0"	1/2"	1/2"	1 1/2"	No limit ⁴
Skin bruises	1/2"	3/4"	3/4"	1 1/2"	No limit ⁴
All discolorations	1"	1 1/2"	1 1/2"	3"	No limit ⁴
<i>Freezer Burn:</i>	Few small (1/8" diameter) pockmarks		Moderate-dried areas not in excess of 1/2" in diameter		Numerous pockmarks and large dried areas

The quality designations specified herein are not applicable to birds possessing any of the following conditions; dirty or bloody head or carcass, dirty feet or vent, fan feathers or neck feathers or garter feathers, or feed in the crop.
¹Total aggregate length of all cuts and tears including incision for removal of the crop or its contents.
²Total to be included in total permitted cuts and tears.
³Maximum diameter of aggregate areas of all flesh bruises, skin bruises and discolorations.
⁴No limit on size and number of areas of discoloration and flesh bruises if such areas do not render any part of the carcass unfit for food.

Market Demands on Broilers

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MARKET DEMANDS ON BROILERS make it necessary that they have the following conditions: Grade A quality, tender, eye appeal, disease free and free of pin feathers, bruises and abnormalities. In addition, they should be processed ready to cook and many consumers prefer them disjointed. They also want them to be competitive in price with other food items and readily available.

Processing techniques and marketing practices have improved greatly during the past few years. New and improved equipment along with these improved practices is largely responsible for greater efficiency from an economic and service viewpoint. These advancements also have helped to improve sanitary conditions, and more chickens with Grade A quality are coming off the line. In addition to processing techniques, there has been a definite trend towards improved grading and inspection programs. These programs are designed to help producers, processors and consumers.

A summary of specifications for U. S. Department of Agriculture standards of quality for individually dressed and ready-to-cook chicken carcasses appears on the inside front cover. These specifications which include

broilers are used as a basis for grading all classes of chickens.

Grades of individual broilers are determined by considering the general conditions and cleanliness of each broiler, as well as body conformation, amount of flesh and finish and the absence or extent of bruises, tears, discolorations, pin feathers and broken and disjointed bones.

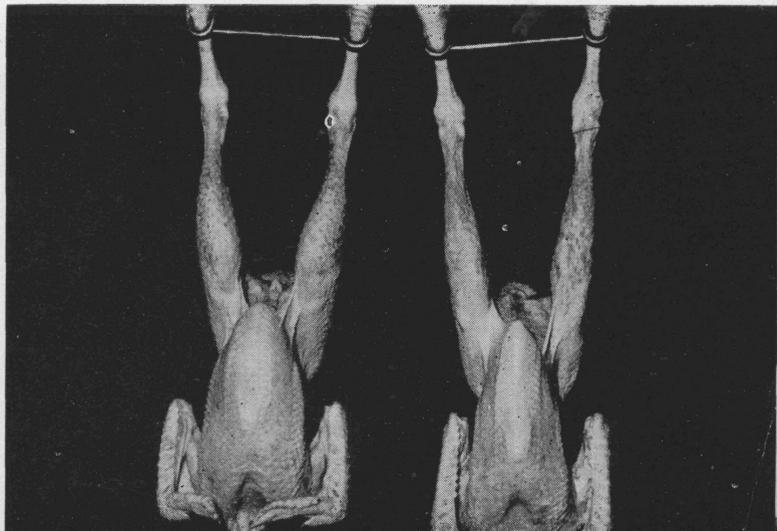
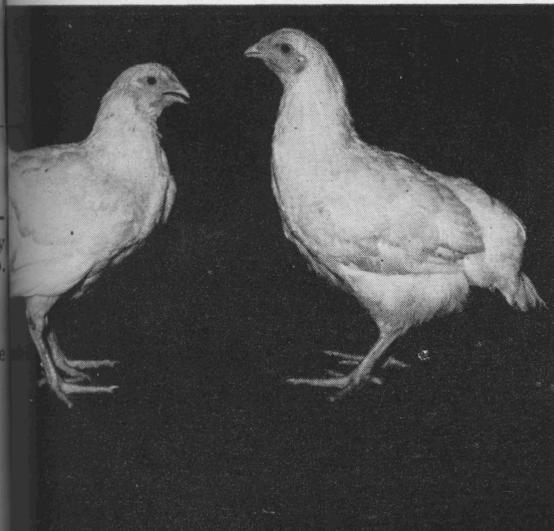
Commercial firms may use the prefix U. S. to identify the grade of poultry sold, by using graders licensed by USDA. They may make application to the USDA to have an official grade designation placed on the lot. They may also request full-time resident graders in their plants. By so doing they are able to apply the U. S. grade label to each individual package.

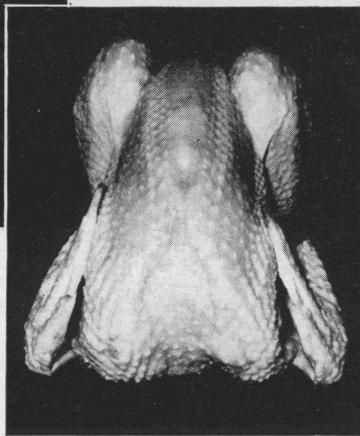
Commercial firms often use standards and grades as a basis for establishing their own specifications for their product. Some states provide a voluntary grading program. Such programs usually follow in whole or in part the standards and grades of USDA.

The use of the letters U. S. in connection with poultry grade legends, unless the product has been graded by an authorized grader, is considered to be in violation of Public Law 272.

LIVE BROILERS: Broilers are same age, breeding and weight and had same kind of feed and management. See picture at right for difference in fleshing and body conformation.

DRESSED BROILERS: Same broilers as on the left. They both are A quality, but vary in body conformation and amount of flesh. These quality factors influence dressing percentage and grade.





FRONT AND SIDE VIEW: Front view shows width and length of breast and body. Side view shows depth of body and note the breast and back are parallel and straight.



FLESHING VARIATION: Broilers are same age and each has enough flesh to be Grade A quality, yet they vary in amount of flesh on the breast.

Body Conformation

Three dimensions should be considered when determining if broilers have desirable body conformation. Broilers with desirable conformation will have broad backs and deep bodies. They also will have wide bodies that are uniform in width from front to rear. The length of their bodies should be long enough to balance their width and depth.

The amount of meat on the carcass will influence body conformation and also the percentage of meat to bone. This makes it highly important to have as much meat on the carcass as possible. The breast meat comprises about 29 percent of the total weight of a ready-to-cook broiler and both legs represent about 32 percent. This is why broilers need broad breasts and bulging thighs if they are to be of desirable body conformation.

Fat, well distributed under the skin over the entire carcass, also helps to improve body conformation, but it does not influence conformation as much as flesh.

A, B, C QUALITY BROILERS: These 3 broilers show different amounts of fleshing. They represent the amount of fleshing needed to Grade A, B and C qualities.

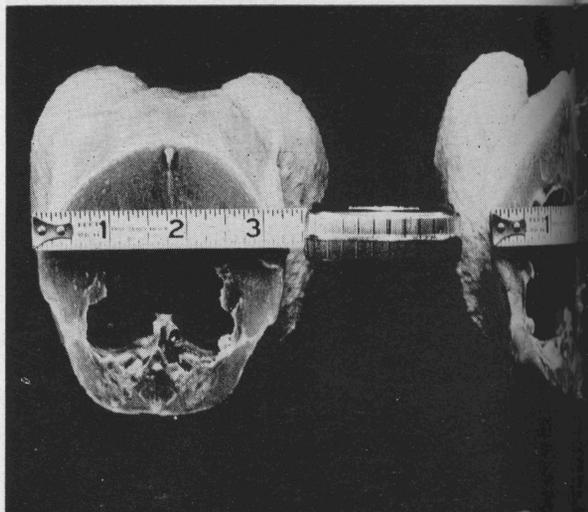


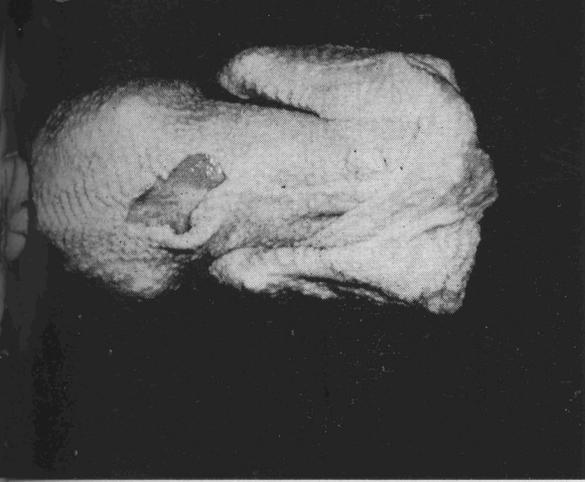
Flesh and Finish

Fleshing refers to the amount of meat on the live or ready-to-cook broiler in relation to its skeletal size. The dressing percentage and the percentage of meat to bone is influenced by the amount of flesh. A fully fleshed broiler has a wide breast, well distributed over the breast bone, bulging thighs and heavily meated drumsticks. Flesh is also well distributed over the back. Research shows that lack of flesh and finish are major causes for low-quality broilers.

Finish means fat. Broilers add fat first in the feather tracts. Additional fat is added between the feather tracts and on the back as it is deposited under the skin. A good covering of fat over the back usually indicates a well-finished bird. A creamy yellow fat is more desirable, while a bronze-colored fat is objectionable. Fat color is influenced by the feed. The amount and distribution of flesh and finish also determine to a considerable degree its attractiveness and eye appeal and influence grade.

BREASTS CROSS SECTIONED: These broilers are the same as the two shown above, but are cross sectioned to show the variation in width of flesh more clearly.





TORN OR CUT SKIN: Location of tears and cuts on the body makes a difference in determining grade. Tears on back are less serious than those on breast or legs.

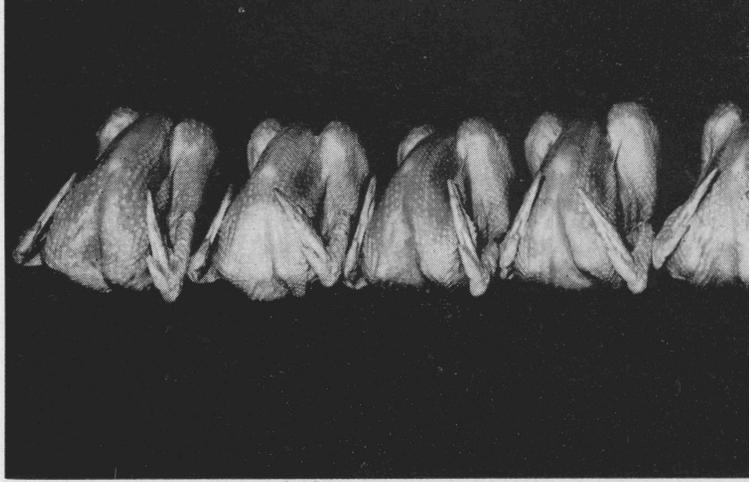
Tears and Cuts

Tears and cuts of the skin not only detract from the appearance of the ready-to-cook broiler, but such injuries permit the flesh to dry out and result in reduced eating quality. When the skin is torn or cut, bacteria are more likely to infect this portion of the broiler.

Most tears and cuts are caused from poor management on the farm and careless handling during marketing procedures or processing.

USDA standards do not permit tears or cuts on the breast and legs of Grade A live or ready-to-cook broilers and only 1½ inch elsewhere. The location and sizes of tears and cuts influence the seriousness with respect to grade. Standards for Grade B permit 1 to 1½ inches on breast and legs of ready-to-cook broilers and 3 inches elsewhere. There is no limit for Grade C anywhere on the broiler.

TORN OR CUT SKIN: Requirements for Grade A broilers do not permit tears and cuts on breasts and legs. Careful handling will reduce these blemishes.



UNIFORM BROILERS: These A quality broilers are uniform in width, length and depth of body and are well fleshed. These kind are in greatest demand.

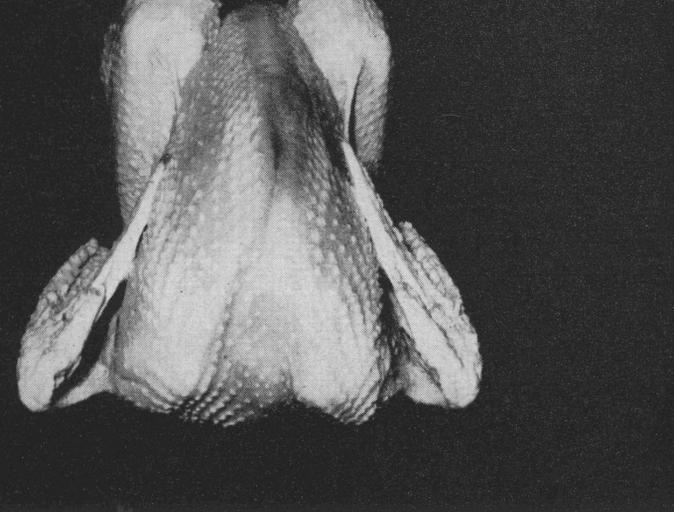
Uniformity

Either sex in a house of live broilers that are uniform with respect to fleshing, finish and size is more likely to sell at top prices than broilers which lack uniformity.

Ready-to-cook broilers for wholesale and dealer levels usually are packed in boxes with ample ice to keep them cool until they reach their destination. Broilers weighing the same and of the same grade usually are packed together. This makes a pack with maximum sales and eye appeal. It also is an aid in providing satisfaction to the buyer, especially with respect to handling and meeting the demands of customers. From the retailer's viewpoint, it affords him an opportunity to buy the size and grade customers demand. This affords the consumer an opportunity to buy for family needs as to quantity or size; also as to price when more than one grade is offered at price differentials for each grade. These facts suggest the importance of producers having available uniform broilers for sale.

BROILERS LACK UNIFORMITY: Although each of these broilers are free of abnormalities and defects, they vary in fleshing, size and body conformation.





FLESH BRUISE: These are serious and will cause loss of meat. Specifications for A quality do not allow flesh bruises on breasts or legs.

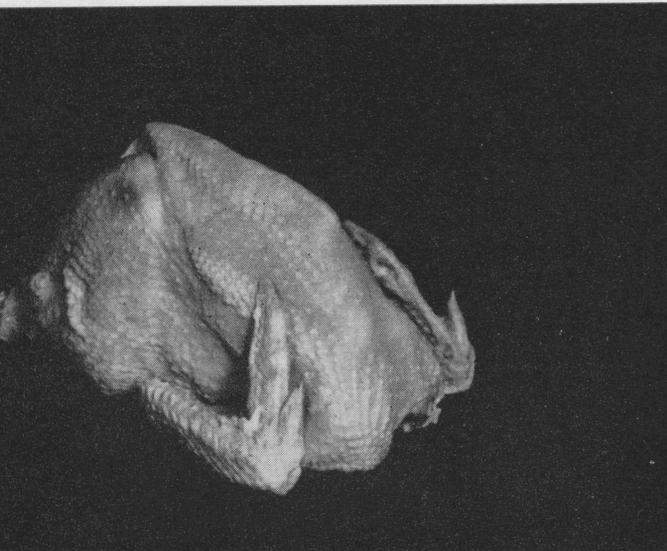
Bruises

Bruises are second in importance to lack of flesh and finish as the principal cause of low grade in market broilers. Bruises usually result from improper handling prior to or during the marketing process. *These bruises always occur before the broiler is thoroughly bled.* The location, size and kind of bruises determine the extent to which the grade is lowered and market value is lost. No flesh bruises are permitted on the breast or legs of a U. S. Grade A carcass.

Flesh bruises can cause loss of edible meat, reduced market value and a lower grade. After the injury takes place, flesh bruises often become bluish or greenish black.

Skin bruises are not as serious a defect as flesh bruises. These bruises are contained within the skin and are not connected with the flesh. A skin bruise can be moved from one point to another by pulling the skin but a flesh bruise is stationary.

SKIN BRUISE: These are less serious than flesh bruises. One-half inch may appear on breast and legs and $\frac{3}{4}$ inch elsewhere on the body and be A quality.



BREAST BLISTER: These blemishes are serious and cause a lowering of grade. Ready-to-cook broilers with blisters are not allowed in any U. S. grade.

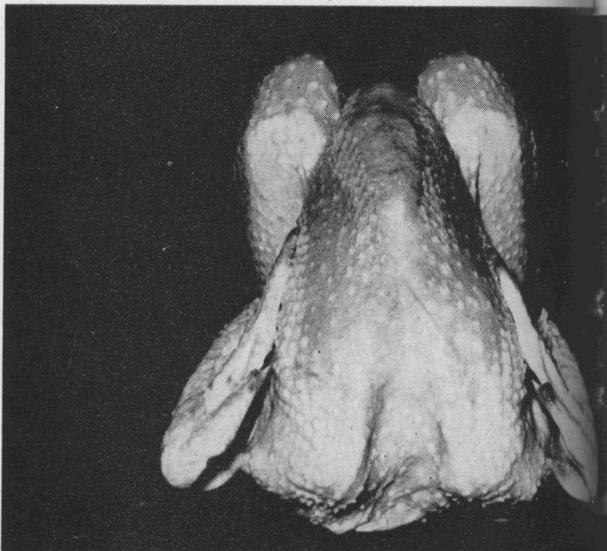
Breast Blisters and Callouses

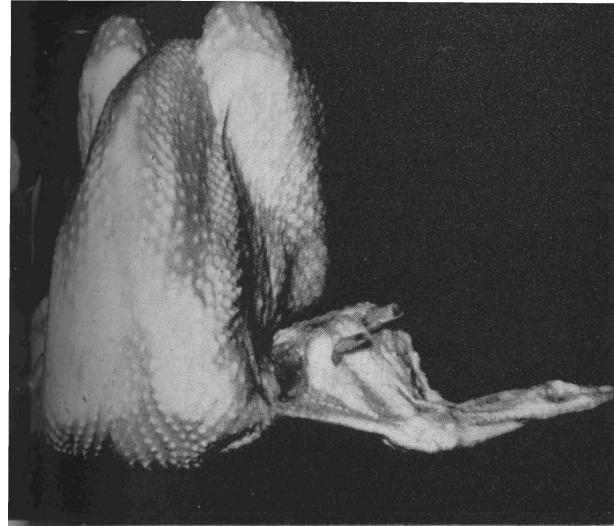
Irritation on the breasts of broilers sometimes causes blisters which usually contain a watery fluid. These are caused by injury of the skin and muscle tissue. Brooding on wire and damp, rough, hard litter will cause a greater incidence of blisters.

Blisters, as with other abnormalities, are unsightly and objectionable to consumers. When broilers are processed under government inspection, blisters are opened and usually the skin is removed. This is a precautionary measure against selling infected birds. A ready-to-cook broiler with a blister is not permitted in any U. S. grade.

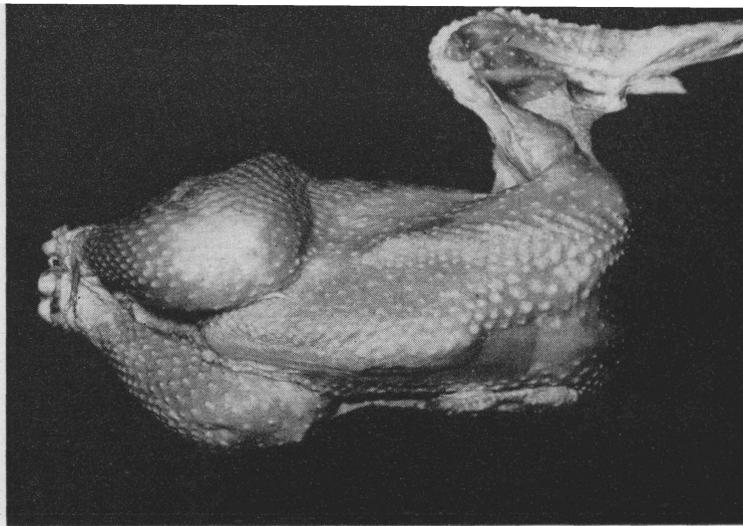
Callouses may have fluid or puss under them but most of them are dry, hard, thickened and scaly. Broilers with callouses processed under federal inspection are examined and if there is any infection, the callouses are removed. This lowers the grade. Live broilers may have slight callouses and be Grade A. Callouses detract from eye appeal. Consumers discriminate against them when buying.

BREAST CALLOUSES: This defect is usually not as serious as blisters. If they show any sign of infection, they must be removed, thus lowering the grade.





BROKEN BONES: If bones are broken after bleeding, either protruding or nonprotruding, they will not cause bruises but will lower the grade.



DISJOINTED BONE: Consumers hesitate to buy broilers with disjunct bones. Likewise they lower the grade but are not as serious as if bones are broken.

Broken and Disjunct Bones

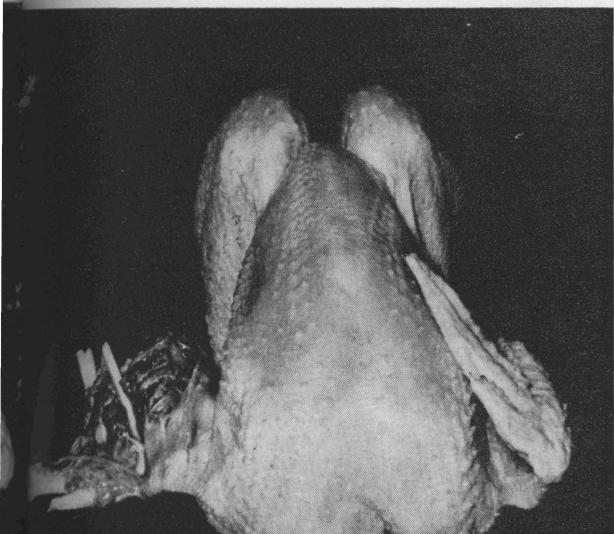
Broken and disjunct bones usually result from mishandling on the farm or during processing. When a bone is broken or disjunct prior to the time the bird is bled, bruises frequently result.

Protruding and nonprotruding broken bones are serious defects which influence grade and consumer acceptance. When bruises occur with broken or disjunct bones, the defect is even more serious.

Disjunct bones are less serious than broken and do not influence as much the grade of the ready-to-cook broiler. If bruising is associated with disjuncting of bones it becomes more serious, as in the case of broken bones. Broken or disjunct bones affect buyer reaction.

These defects usually occur during processing, but they can occur on the farm, in transportation or retail handling.

BROKEN BONES: If bones are broken before bleeding, either protruding or nonprotruding, bruises usually result. Grade is lowered if otherwise above C quality.

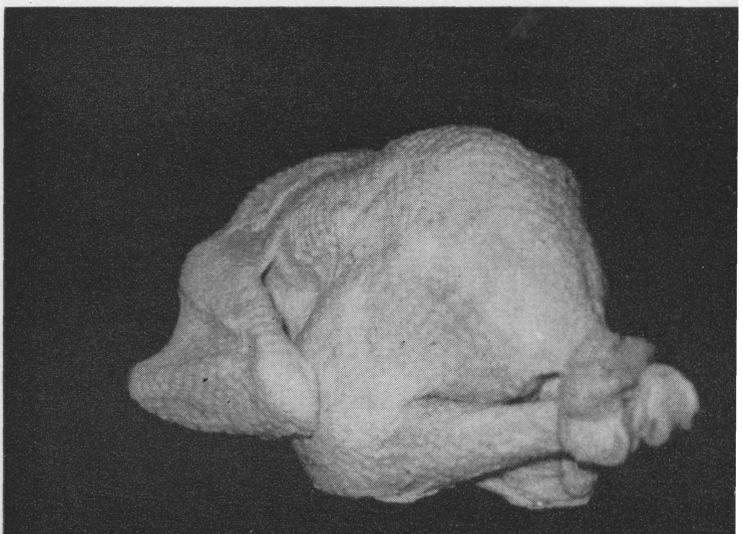


Deformed Backs and Breasts

Deformed backs, like many other abnormalities, reduce the percentage of meat to bone. Serious defects such as crooked backs or hunchbacks are unsightly and make packaging difficult. Carcasses with these defects usually have buyer resistance and less market value. Such broilers when fairly well fleshed, are permitted in U. S. Grade B if moderately crooked, and Grade C if seriously crooked.

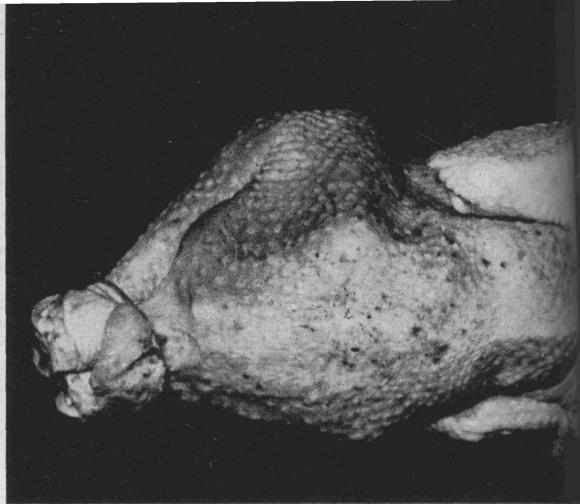
Grade A broilers may have a slight curve in breastbone and a dent in breast not to exceed $\frac{1}{8}$ inch. Broilers of Grade B may have dented and curved breasts and may also be slightly crooked. Broilers with seriously crooked breast bones are Grade C if fairly well fleshed. The percentage of live broilers with these defects in the flock will influence the percentage of Grade A ready-to-cook carcasses the processor has for sale. Usually a small percentage of these defects occurs in broilers.

CROOKED BACK: This influences grade, percentage of meat to bone, body conformation, consumer acceptance, market value and finally buyer resistance.





LIVE BROILER: Broilers with bare backs and pins elsewhere on body, such as this, require more time to process. Picture on right shows pin feathers when processed. They lower grade.



PROCESSED BROILER: Because of pin feathers, broiler is lowered in grade. Requires more time to process, and has less eye appeal. Buyer and consumer hesitate to buy.

Pin Feathers

Consumers who buy ready-to-cook broilers want them free of pin feathers as the term implies. They realize that more work is required in the preparation of broilers to cook when they have either protruding or nonprotruding pin feathers or hair-like filoplumes on the carcass. Pin feathers and filoplumes also detract from eye appeal; thus one or more of these conditions may cause a loss in sales.

Protruding pin feathers are those which are developed enough to protrude through the skin and usually can be removed by modern picking equipment. Broilers processed ready to cook which have protruding pins cannot be of Grade A quality. Nonprotruding pin feathers are those which have not yet emerged from the skin. USDA specifications for standards of quality with respect to nonprotruding pin feathers state that Grade A must be practically free; Grade B, few scattered pin feathers and Grade C, a scattering of pin feathers.

External Parasites

Blue bugs, lice and ticks may cause blemishes on live and ready-to-cook broilers. These blemishes show as small red spots after the birds are processed. Discolorations caused from these external parasites influence grade.

USDA specifications for standard of quality state that no more than 1 inch (maximum diameter of aggregate area) of discolorations from any cause may be on breast and legs of a Grade A ready-to-cook broiler. There may be up to 1½ inches elsewhere.

Blemishes from external parasites detract markedly from the appearance and as a result affect consumer reaction when buying.

Before live birds are marketed they should be examined closely for blemishes caused by these parasites. If any are found the birds should be treated immediately. After treatment ample time should be given for blemishes to leave before broilers are taken to the market for sale.