

Quality of Fresh Chicken Meat

causes of downgrading of chickens handled in the Los Angeles market revealed in representative survey

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Producers of fresh dressed chickens for the Los Angeles market control more than half the causes of downgrading—from United States Department of Agriculture A Quality to B or C Qualities—at the wholesale level while processors control most of the causes of downgrading at the retail level—except broilers and roasters which the retailers control.

Deficient fleshing and finish was by far the most prominent producer cause of downgrading found in a sample at wholesale while of the processor defects, feed-in-crop was the most outstanding.

At the retail level, abrasions and lack of cleanliness were the most prominent processor causes of downgrading in a sample of 64 retail food stores in Los Angeles.

The conditions responsible for grading some of the chickens at retail to B or C Quality were recorded during a survey of representative food stores—chain and independent—of different sizes and in different income sections of the Los Angeles area.

All the chickens came from the southern California area except some of the ice-packed fryers which originated in central and coastal regions of the state.

Except for broilers, there was an insignificant proportion of the chickens offered at retail which were of C Quality.

Cut-up fryers appeared as higher quality than New York dressed fryers. The reasons for this appearance overlap. The higher quality occurs mainly because the cut-up fryers are sold in cellophane packages in self-service meat counters and are subject to closer scrutiny and criticism by consumers. Meat sold in the self-service style has to have greater emphasis placed on appearance for consumer appeal than that sold in butcher counter sales. Most merchants feel that the self-service meat counter must carry higher-than-average quality of product.

Ice-packed fryers were of somewhat lower quality than dry-packed fryers. There are several reasons for this: 1, many retailers do not merchandise the ice-packed product as the processor recommends—kept fully covered with chopped ice during the entire period in the store—so that discolorations show up more rapidly, 2, abrasions in processing show up more rapidly at retail when not displayed properly than they do on dry-packed fryers, 3, in general, ice-packed fryers were not as clean—free from pin and vestigial feathers—and not as well fleshed and finished as were dry-packed fryers.

During the first six months of 1950, a sample—at wholesale—of about 23,000 chickens received and dressed by city

processors in Los Angeles—where per capita consumption of chicken meat is about two-thirds of the national level—was graded by a licensed Federal grader in accordance with USDA quality standards.

The standards used were uniform for all breeds and classes graded. Each chicken was graded and the reasons for all downgrades were recorded. These chickens were typical of those received by city processors during this period.

City processors represent the most important type of handler of chickens in the local marketing system. For this reason chickens received by other handlers—such as live-chicken retail dealers, and receivers of fresh chickens from country processing plants, as well as those sold direct from producers to consumers and retail butchers, although important in total quantity—were not included in this sample. All chicken carcasses in the sample were graded in the dressing room or in the cooler shortly after picking.

Differences in quality between classes, while not large, were significant and have to be considered in marketing programs. The difference between broilers, fryers, and roasters was primarily one of age and weight, and fleshing and finish usually increase with age and weight.

The average quality of egg hens was

Classification of B and C Qualities of Fresh Dressed Chickens by Cause of Downgrade, Graded at City Processors in Los Angeles, January–June, 1950

Class	Numbers and per cent in B Quality							Numbers and per cent in C Quality						
	Total	F & F	Def.	Crop	Abr.	Pins & Imp. Bl.	Br.	Total	F & F	Def.	Crop	Abr.	Pins & Imp. Bl.	Br.
Broiler	979	534	30	193	64	61	98	121	97	3	..	4	2	13
per cent	100%	55%	3%	20%	6%	6%	10%	100%	80%	3%	..	4%	2%	11%
Fryer	1773	776	154	339	152	113	249	249	124	15	21	25	30	34
per cent	100%	44%	9%	19%	9%	5%	14%	100%	50%	6%	8%	10%	12%	14%
Roaster	142	73	5	11	23	8	22	12	5	..	..	2	2	3
per cent	100%	51%	4%	8%	16%	6%	15%	100%	42%	..	..	16%	17%	25%
Meat Hen	464	221	104	27	33	3	74	43	27	8	..	..	3	5
per cent	100%	48%	22%	6%	7%	1%	16%	100%	63%	19%	..	..	7%	11%
Egg Hen	372	244	51	23	21	3	30	33	21	1	..	..	7	4
per cent	100%	66%	14%	6%	5%	1%	8%	100%	64%	3%	..	..	21%	12%

F & F—Fleshing and Finish—Processor Responsibility
 Def.—Deformed—Processor Responsibility
 Crop—Feed in Crop—Processor Responsibility

Abr.—Abrasion—Processor Responsibility
 Imp. Bl.—Improper Bleeding—Processor Responsibility
 Br.—Bruise—Undetermined Responsibility

slightly lower than that of meat hens. High egg laying reduces the fleshing and fat accumulated on egg hens as compared to meat hens. This difference in average quality was probably one of the causes for the higher price obtained for meat hens in this market.

There is a sizeable quantity of the lower quality chickens produced which must be sold in competition with the higher quality. Presence of this lower quality creates a problem in consumer satisfaction since consumers are often unable to distinguish between different qualities.

The proportion of chickens in each class which are of B and C Quality will be higher when consumers buy them than were found in the wholesale sampling. This is because of the quality deterioration which occurs after dressing—during cooling, transportation, and retailing.

To check on this deterioration, a series of visits to a representative sample of retail food stores was made in order to grade the fresh chickens on display and record the reasons for the downgrades observed. This grading was done by workers, who, although not licensed graders, have had considerable training and experience in chicken grading.

Downgrading

The different causes for downgrading the chickens at wholesale are divided mainly into two groups—those which are the responsibility of the producer and those which are the responsibility of the processor.

Responsibility for bruises can not be definitely assigned, although most persons agree that deficient fleshing and finish and presence of deformities are factors which producers control. On the other hand, feed in crop, abrasions, and poor bleeding are considered to be factors which are controlled by processors.

About one half and more of the chickens fallings into B and C Quality categories were downgraded at wholesale due to causes which producers control. However, the marketing of young chickens which lack proper fleshing and finish may be due to the demands by buyers for small chickens, with little emphasis on their quality. Also it is related to the fact that most of them are Leghorn cockerels and would not mature into meat chickens at any time.

The high proportion of deformities in hens is understandable as they have a longer life than other classes and are subject to unavoidable occupational hazards.

Bruises are usually caused by crowded conditions and rough handling in loading in and out of coops.

Of the different causes for loss of quality by processors, feed in crop was the most important. This result was due to

the fact that all these chickens were graded immediately after being picked. Many chickens have feed before them continuously before being killed. Feed in crop is a defect which can be corrected before the birds are sold, and a large proportion of such downgrades at wholesale is so corrected.

In determining the quality of chickens at retail, it has been possible to note how the addition of retailing defects changes

the relative responsibility of each handler in the channel. Although in a comparable sample all the defects present in chickens when graded at wholesale were also present when graded at retail, the addition of other defects due to retailing, and the development of defects due to processing but which appear only after a time, change the proportions of defects due to any one handler.

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Quality of Fresh Dressed Chickens, by Classes, Graded at City Processors in Los Angeles, January–June, 1950

Class*	Number graded	Number and proportion graded meeting USDA specifications for:			
		A Quality	B Quality	C Quality	No grade
Broiler	4954	3795 77%	979 20%	121 2%	59 1%
Fryer	11,577	9506 82%	1773 15%	249 2%	49 1%
Roaster	1191	1037 87%	142 12%	12 1%	.. ..
Meat Hen	3327	2814 85%	464 14%	43 1%	6 ..
Egg Hen	1825	1416 76%	372 20%	33 2%	4 1%

* Definitions of classes are as follows:
 Broilers, fryers, and roasters: all young soft-boned chickens of either sex weighing, respectively, 1¾ to 2¼ pounds, 2¼ to 4 pounds, and over 4 pounds.
 Meat hens: Mature female chickens of all breeds other than Leghorn.
 Egg hens: Mature female chickens of all weights of the Leghorn breed only.

Quality of Fresh Dressed Chickens, by Classes, Displayed in Retail Food Store Sample in Los Angeles Area, January–June, 1950

Class	No. displays	No. carcasses in displays	Proportion of carcasses meeting USDA specifications for:			
			A Quality	B Quality	C Quality	Total
Broiler	34	178	73%	20%	7%	100%
Fryer (Dry-Packed)	394	2490	72	27	1	100
Fryer (Ice-Packed)	111	1288	61	38	1	100
Fryer (Cut-up)	274	1925	82	18	1	100
Roaster	116	596	87	13	0	100
Meat Hen	404	2303	86	14	0	100
Egg Hen	219	1785	61	37	2	100

Classification of Reasons for Downgrade of Chickens in Grade B Displays in Retail Food Store Sample in Los Angeles Area, January–June, 1950

Class	No. grade B displays	No. carcasses in grade B display	No. reasons for downgrade	Proportionate causes for downgrade			Total
				Production defects	Processing defects	Retailing defects	
Broiler	5	35*	44	67%	17%	16%	100%
Fryer (Dry-Packed)	79	745	880	28	61	11	100
Fryer (Ice-Packed)	53	628	744	31	60	9	100
Fryer (Cut-up)	23	259	366	11	63	26	100
Roaster	7	34*	49	0	29	71	100
Meat Hen	26	159	162	6	55	39	100
Egg Hen	86	849	1055	28	39	33	100

* It should be noted that the number of broiler and roaster carcasses is small because these are B Quality carcasses which represent a smaller proportion of total carcasses graded than most other classes.

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DOWNGRADING

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The drop in quality of dry-packed fryers and egg hens from the wholesale to the retail level is indicative of the loss in quality occurring from one handler to another. These two classes make up the bulk of all fresh chickens sold and are the most frequent price leaders in advertising and merchandising operations.

On the other hand, there was little difference in going from wholesale to retail, in quality of the broilers, roasters, and meat hens. This is due primarily to the fact that the chickens in these classes graded at wholesale for this study were not exactly comparable to those graded at retail because of the segregation of qualities at wholesale. These classes go to a more selective trade and to types of stores where quality is of more importance than price. In this segregation by the processor, some of the lower quality may be sold to other outlets such as lower price restaurants and institutions.

When considered at retail, processing defects are greater than any other kinds of defects for all classes, except broilers and roasters. For broilers, the high proportion of birds having defective fleshing and finish still holds at retail. For roasters, nearly all the defects appear after the birds left the processor.

The high proportion of processor defects at retail is in contrast to the grading at wholesale where defects due to producer handling were more evident. The primary reason for this is that skin abrasions not apparent at wholesale, appear quickly at retail due to changes in temperature and humidity during transportation and display.

A comparison between dry-packed and ice-packed fryers indicates that for every 100 fryers of each type which fell into the B Quality category, there was not a significant difference in the responsibility of handlers for the downgrade. However,

out of every 100 fryers, as received by processors, twice as many ice-packed fryers as dry-packed are graded down because of producer defects, and a large proportion more are graded down because of processor defects.

No analysis of the reasons for downgrade of the chickens graded C Quality at retail was included because the number was negligible.

Before quality improvement can be effected, producers and handlers need to know the cause and source of low quality chickens and then consider ways of eliminating the causes.

Many of these ways involve additional cost of operation such as more labor or longer time needed to load in coops. Then an additional consideration finally deter-

mines whether the steps are taken—this is whether the higher income received from the higher quality product equals, exceeds, or falls below the higher cost of producing it.

Marketing chickens in the absence of a uniform grading system, as at present, makes it difficult to determine whether quality improvement would pay an individual producer or processor more income.

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