

CULLING

THE POULTRY FLOCK

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Culling the Poultry Flock

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INTRODUCTION

CULLING means examining birds of any age to identify and eliminate the undesirable and low-producing ones. In any kind of plant or animal breeding a number of low-producing, unprofitable individuals always exist. The detection and elimination of these individuals is called culling.

Trap-nesting is the only accurate method of determining the exact egg production of the hen. This method is economical only for the poultryman doing careful, accurate, pedigree-breeding work. Trap-nesting under ordinary conditions is not practicable for the general farmer or commercial poultryman. The poultryman has to make one of three choices: to trapnest; to study and apply the principles of culling; or to continue keeping at a loss low-producing and money-losing hens.

Careful, systematic culling of the entire flock will not transform poorly housed, lousy, crowded, and improperly fed hens into high producers. Culling is profitable only when the flock has and will continue to have uniform and sensible care. Accuracy in culling depends on the judgment of the poultryman, and his judgment must be based on definite knowledge of the management of that flock during the preceding year. Any factor, such as moving, sickness, forcing under lights, partial molt, crowding, or change in feed or feeding methods, if not taken into consideration, will result in many errors of judgment. Many profitable hens have been sold as culls, not that the methods of culling as herein described were at fault, but because the poultryman failed to consider all the characteristics of the hen and the care she had received. A daily egg record of the flock during the preceding season discloses the care the flock has received and is a valuable asset in doing intelligent, accurate culling. As the flock owner is the only person in possession of all the information concerning his flock, he should, for this reason, do a more efficient job of culling than anyone else.

CULLING TIME

Culling should begin at the time eggs are selected for incubation. Weak, malformed, and undesirable chicks should be culled when they are transferred from the incubator to the brooder. Chicks

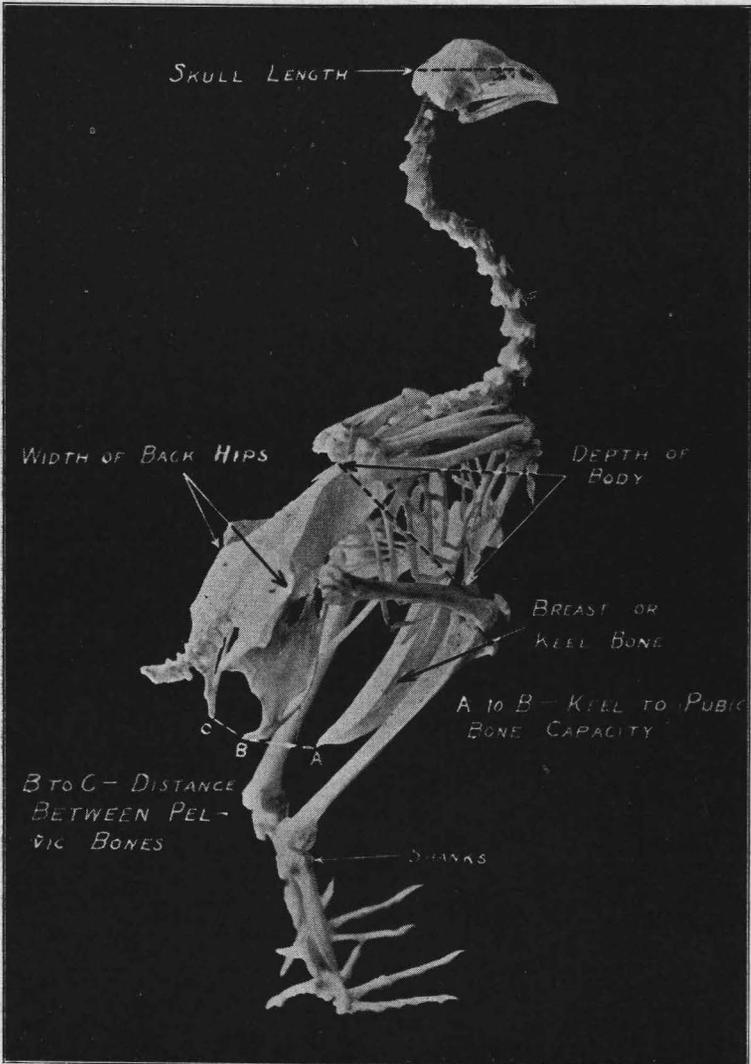


Figure 1. Skeleton showing measurements taken in culling.

that are of low vitality should be culled as soon as discovered during the developing period. Pullets that are a few months slower than the average of the flock in starting to lay should be culled. Individual cull hens should be removed at any season of the year that they are definitely detected.

In addition to spot culling of individuals, the commercial flock owner should schedule two tentative dates for examining carefully every hen in the flock. The first flock-culling date should be approximately June 1. At this season the peak of spring production has passed and a sufficient number of late starters, early quitters, and beefy hens will be culled out so as amply to justify the chore. The June-culled flock should be examined again during the first half of August. At this time the owner knows the number of pullets he will have to house and can cull the older stock according to the number of fowls his equipment will accommodate.

It is easier to see, interpret, and place proper values on the various culling factors when the work is done in midsummer. There is as definite a time for culling the poultry flock as there is a seasonal time to plant corn.

Following the second culling in August, if the flock is to be carried over or if breeders are to be selected, it is as important to stop culling as it is to start. Even the best hens will molt and go out of production during fall and winter. Culling the laying flock in December on the basis of principles that apply in August is most difficult and too often results in a severe depletion of the flock.

SELECTING BREEDING HENS

Breeding hens should be selected during September and October from flocks that have been carefully culled both in June and August. If pullets are to be used as breeders, the entire flock of pullets should be examined in November or December and the undesirable birds eliminated. Breeding flocks should be reasonably free from standard disqualifications and serious defects.

FACTORS TO BE CONSIDERED IN CULLING

Vigor and health

Vigor is the very foundation of a successful poultry business. An active disposition and a bright, clear eye with a normally shaped pupil indicate health. An abnormal or irregularly shaped pupil is an indication of fowl paralysis. Small, weak, deformed, inactive hens with long beaks and heads lack vigor and should be culled. Hens

with baggy abdomens should be carefully examined because they frequently have fluid in the body cavity. Such birds are commonly known as "water bellies" and seldom last long or recover.

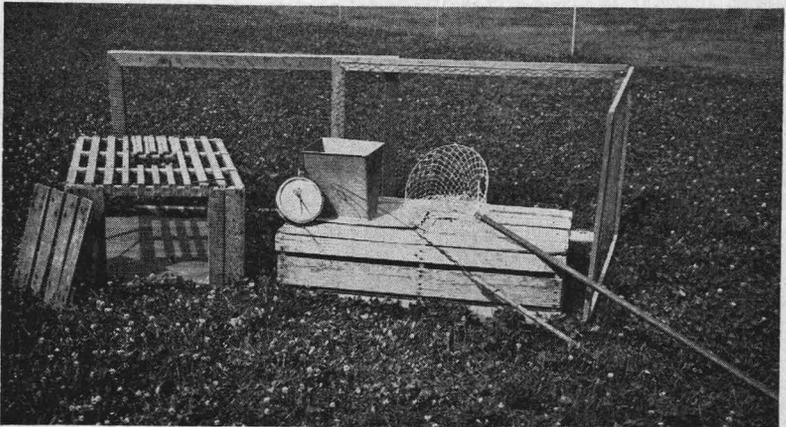


Figure 2. To do a good job of culling, adequate equipment is essential. This includes a catching crate, shipping crates, scales, collapsible panels, a catching hook, a catching net, and a funnel.



Figure 3. A catching net is a valuable aid in spot culling and should be used continuously.

Present production

Present production is indicated by the condition of the comb, wattles, pubic bones, and vent. If a hen is laying, her comb and wattles will be large, bright red, and soft; the pubic bones will be spread and flexible; and the vent will be moist and dilated. When a hen is out of production, the comb and wattles will be small, pale, and scaly; the pubic bones will be rigid and close together; and the vent will be dry and contracted.

Past production

Past production is determined mainly by pigmentation. Pigmentation is the yellow color that appears in the body of yellow-skinned breeds, mainly in the beak and shanks. As a hen continues to lay, the pigment leaves the body in the following order: vent, from 4 to 6 days; eye rings, about 2 weeks; ear lobes, 3 weeks; beak, 4 to 6 weeks; and shanks 4 to 6 months. As the pigment leaves, the beak



Figure 4. The comb and wattles will contract and shrivel when a bird stops laying. The hen on the right stopped laying and started to molt in June. Such a bird should be culled at that time.

starts to fade first at the base and gradually outward. In the case of the shanks, the bottom of the feet are bleached first, the front of the shanks next, and the back of the shanks last.

When a hen goes out of production, the pigment returns in the same order in which it leaves: first to the vent, then to the eye rings, ear lobes, beak, and shanks. While it takes 4 to 6 months for the

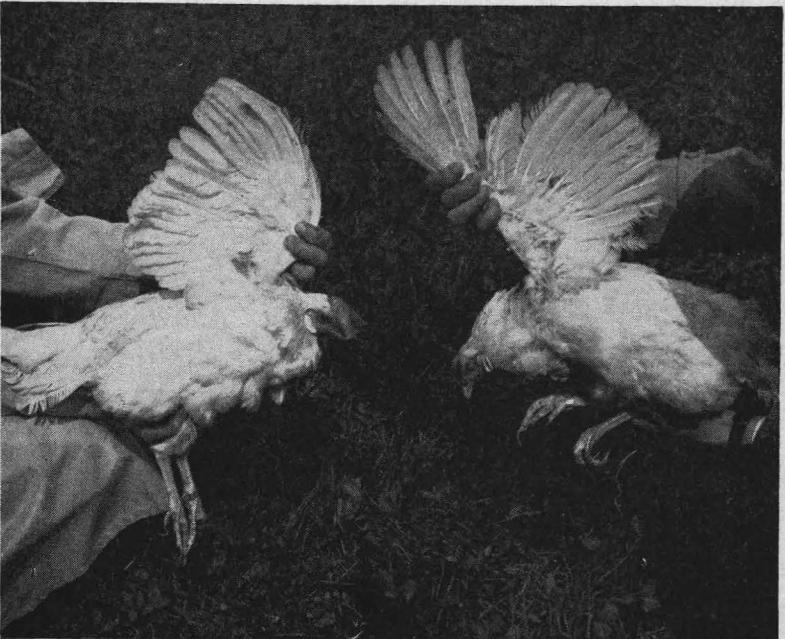


Figure 5. High producing hens will continue to lay through the summer and will not molt until September or October. The bird on the right has stopped laying as indicated by her comb and wattles and has dropped two primary feathers. The hen on the left is still in production and has a full set of wing feathers.

pigment to leave the body, it will return in 4 to 6 weeks. There is quite a variation among individual hens in the rate that the pigment leaves and returns to the body. This is influenced to a considerable extent by feed, skin texture, and production rate. A fast-laying hen or a hen with high intensity will have a tendency to lose her pigment sooner than the slow producer. As a rule, in judging for egg production, the vigorous bird that possesses the least yellow pigment has been the best producer.

Rate of production

Some hens have a much faster rate of production than others. For example, some hens may lay only every other day, others may lay 2 days and miss a day, while others will lay many eggs before a day is skipped. The best indication for rate of production is the handling quality of the bird, which is indicated by texture of skin, condition of abdomen, pubic bones, and keel bone. A hen with a high rate of production will often show more refinement about the head; the skin will be loose, soft, and pliable; the keel will slope downward; the abdomen will be soft, pliable, and free from fat; and the pubic bones will be thin, flexible, and well spread.

A hen with low rate of production will usually show more coarseness about the head; the skin will be thick and underlain with fat; the abdomen will lack that soft, pliable texture and may carry considerable fat; and the pubic bones will be thicker, rigid, and have a tendency to turn in.

Persistency of production

Persistency of production refers to the length of time a bird continues to lay before she starts to molt. The time of year and rate at which the bird molts are a good indication of persistency of production.

The high-producing hens will continue to lay through the summer and will not molt until September or October. The lower-producing hens will molt in June, July, or August. As a rule, the poorest producers will be the first to start molting and require the longest time to complete the molt. The order of molt is: head, neck, body, wing, and tail. The outer 10 feathers of the wing, called the primary feathers, exhibit a quite regular order of molting. The molt in the primary feathers is used as a guide to determine the length and rate of molt that are indications of production.

Usually the wing is made up of 10 primary feathers and 14 secondary feathers which are divided by a short axile feather. The first primary feather to drop out is the one next to the axil and the molt continues outward in the 10 primaries. The low producers will drop 1 feather at a time, and the high producers may drop from 3 to 5 at once. The feathers are dropped about 2 weeks apart. It takes about 6 weeks for the new feathers to complete their growth. If a hen drops only 1 primary at a time, it will take her about 24 weeks to complete the molt. If a high-producing hen drops 5 primaries at once, she will complete the molt in about 8 weeks.

Generally speaking, after a hen starts the wing molt she will stop laying and will not start again until the molt is finished. Occa-

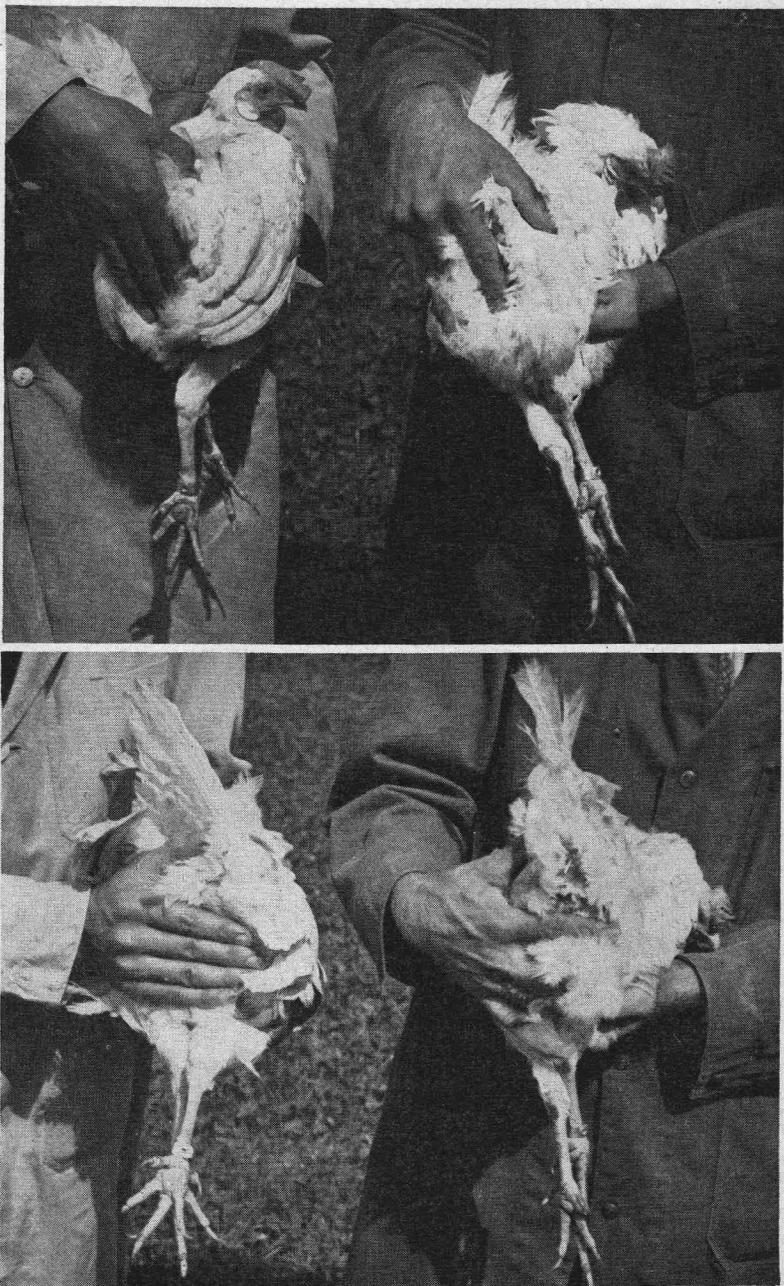


Figure 6. High producing hens will have a good spread between the pubic bones and from the pubic bones to the tip of the keel or breast bone.

sionally a high-producing hen with considerable vitality will continue to lay while molting. The poultryman should keep in mind that the low producers molt early and slowly, and the high producers molt late and fast.

Body size and conformation

The large birds within the breed will lay more and larger eggs with less mortality on the average. Small birds usually lay smaller eggs and frequently do not have the vigor and vitality to continue to lay over a long period. High-producing hens possess good body weight, but at the same time are free from excess fat. The back should be broad with the width carried well toward the rear. The body should be deep with well-sprung ribs, with a good spread between the pubic bones and from the pubic bones to the tip of the keel, to make room for digestive and egg-producing organs.

With more emphasis being placed on meat production, the keel bone of breeders should be reasonably long and straight. The breast should be broad or at least plump with the width carried toward the tip of the keel.

Leghorn hens, to be saved for breeders or second-year producers, should weigh at least $4\frac{1}{2}$ pounds, New Hampshires and Rhode Island Reds $6\frac{1}{2}$ pounds, and Plymouth Rocks $7\frac{1}{2}$ pounds.

Temperament and activity

A high-producing hen is more active and nervous than a poor layer, yet more easily caught and handled. The high producer is friendly, while the poor layer is shy, stays on the roost or outer edge of the flock, and squawks when caught. The first hens off the roost in the morning and last to go to roost at night are the best layers.

PRECAUTIONS TO OBSERVE IN CULLING

Culling is an intelligent comparison between hens of the same flock that have had equal opportunity to lay so far as housing, feeding, and management are concerned. No set rule or rules will apply to all flocks because culling is a matter of intelligent judgment based on uniform management of the flock.

It is not safe to judge a hen solely by any one of the indications previously discussed. Such procedure will result in untold errors. Only when all indications are applied to each hen can intelligent judgment be passed.

Unless hens have been kept under conditions favorable to egg production, no one can do accurate culling work. Parasitic infection, improper feed or irregular feeding methods, poor housing conditions,

crowding, and forcing for egg production at some season of the year will cause many otherwise good hens to be classed as culls. There are culls that are so because of poor inherent ability to produce, and there are hens easily mistaken for such because of the poor care they have received.

In culling for egg production, the questionable hen should be given the benefit of the doubt. In selecting breeders the questionable bird should be eliminated.

The age of the hens to be culled should be given careful consideration. Culling February-hatched pullets that have been in production 12 to 14 months presents a slightly different problem from culling April-hatched pullets that have been in production 10 to 11 months, or fall-hatched pullets that have been in production only 5 months prior to the August culling.

Hens that have been forced into molting, or kept under all-night lights during the fall and winter, do not conform as uniformly to the culling principles described herein as hens that have received normal treatment.

Fowls to be culled should be caught with the least amount of fright and disturbance. The best method is to use a catching crate or collapsible panels. The crate may be placed outside the laying

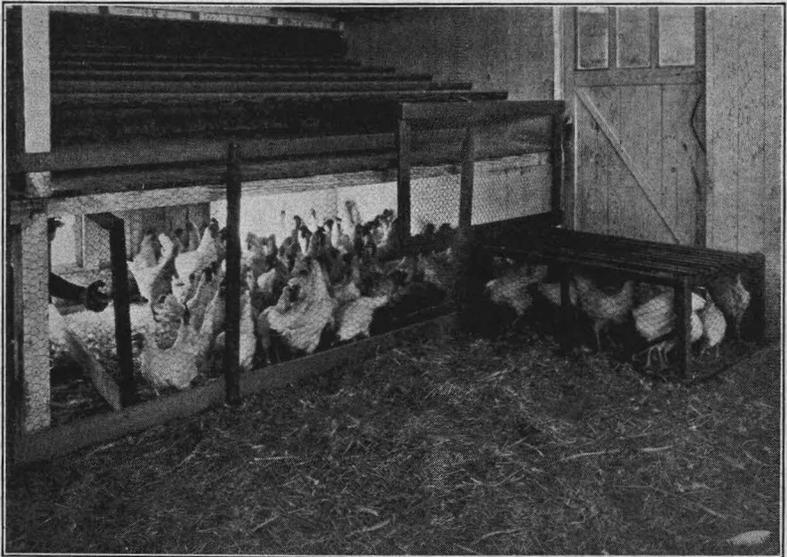


Figure 7. The catching crate and panels used to confine the flock in a restricted area simplify the catching problem.



Figure 8. Scales are desirable to check body weights. Leghorn hens at one year of age or older should weigh at least $4\frac{1}{2}$ pounds; New Hampshires and Rhode Island Reds, $6\frac{1}{2}$ pounds; and Plymouth Rocks, $7\frac{1}{2}$ pounds.

house on a level with the exit door. The fowls are driven into the crate, the exit door closed, and each fowl removed through the door in the top of the crate. The crate may be used more conveniently inside the laying house where the hens are penned under the dropping board by the use of panels and forced through the catching crate (Figure 7). The birds may also be driven into a small pen made from the collapsible panels in a corner (Figure 8). One person in the pen with a short-handled catching hook can catch the birds rapidly and hand them to the person doing the culling.

DISQUALIFICATIONS AND DEFECTS

A disqualification is a fault serious enough to eliminate the bird from competition or breeding flocks, according to the American Standard of Perfection.

A defect is a fault not serious enough to eliminate the bird from competition but one that should be taken into consideration in judging birds and selecting breeders.

Many of these disqualifications and defects have no bearing on egg production, but they should be taken into consideration when selecting breeding stock. To qualify for an R.O.P. male or female in the Record of Performance program under the National Poultry Improvement Program, the birds must be free from disqualifications.

In the U. S. Certified breeding flocks under the National Poultry Improvement Plan the females must be reasonably free from disqualifications and serious defects. The males in certified flocks must be R.O.P., which means they must be free from disqualifications.

In the U. S. approved breeding flocks the males and females must be reasonably free from disqualifications and serious defects.

Following are the most common qualifications and defects listed by the American Standard of Perfection.

General disqualifications

1. Deformed beaks, crooked or otherwise deformed backs.
2. A wing showing clipped primaries or secondaries, or both.
3. A split wing (abnormal division between primary and secondary feathers).
4. A slipped wing (carried in a drooping position).
5. Twisted feather or feathers in the wing or tail of any specimen.
6. Side sprig or sprigs on all single-comb varieties.
7. Positive enamel white in the ear lobes of males or females of all American, Asiatic, and English varieties except Dorkings, Redcaps, and Lamonas.
8. Stub, stubs, feather, feathers, or featherlike growth on the shanks, feet, or toes of breeds required to have unfeathered shanks.
9. Any down, stub, feathers, or featherlike growth on the hock disconnected from feathers on thigh.
10. Shank, shanks, foot, feet, or toes of color foreign to breed.
11. Black in the quills of primaries or secondaries of white varieties.
12. Foreign color in any part of the plumage of white varieties, except slight gray ticking.
13. One or more entirely white feathers showing in outer plumage of Rhode Island Reds.

14. Red or yellow in any part of plumage; two or more solid-black primaries, or two or more solid-black secondaries, or two or more solid-black main tail feathers in Barred Plymouth Rocks.
15. Rhode Island Reds or Plymouth Rocks falling 2 pounds below standard weight; Leghorn males below $1\frac{1}{2}$ pounds; and Leghorn females below 1 pound.

General defects

1. Crooked breast or keel bone.
2. Slate under color in Rhode Island Reds.
3. Light-colored shafting in buff and red varieties.
4. Mealiness in plumage or smutty under color in Reds.
5. Black feathers in Barred Plymouth Rocks.
6. Irregular barring in Barred Plymouth Rocks.
7. Gray specks in any part of plumage of white varieties.
8. Brassiness or yellow in all varieties.
9. Creaminess of plumage or quill in white varieties, except where specified creamy white.
10. Lack of tail development.

STANDARD WEIGHTS FOR THE MORE COMMON BREEDS

LEGHORNS

Cock	6 pounds	Hen	$4\frac{1}{2}$ pounds
Cockerel	5 pounds	Pullet	4 pounds

NEW HAMPSHIRE

Cock	$8\frac{1}{2}$ pounds	Hen	$6\frac{1}{2}$ pounds
Cockerel	$7\frac{1}{2}$ pounds	Pullet	$5\frac{1}{2}$ pounds

RHODE ISLAND REDS

Cock	$8\frac{1}{2}$ pounds	Hen	$6\frac{1}{2}$ pounds
Cockerel	$7\frac{1}{2}$ pounds	Pullet	$5\frac{1}{2}$ pounds

PLYMOUTH ROCKS

Cock	$9\frac{1}{2}$ pounds	Hen	$7\frac{1}{2}$ pounds
Cockerel	8 pounds	Pullet	6 pounds

A *cock bird* is a male fowl 1 year old or older.

A *cockerel* is a male fowl less than 1 year of age.

A *hen* is a female fowl 1 year old or older.

A *pullet* is a female fowl less than 1 year old.

The cock and hen weights apply to birds 12 months old or older.

The cockerel and pullet weights apply approximately to birds from 6 to 12 months of age.

Cockerels and pullets as a rule will make some increase in body weight from 6 to 12 months of age.

A CULLING CHART*

JUDGING FOR PRESENT PRODUCTION

	Laying hen	Nonlaying hen
Vent	Large, dilated, oblong, moist	Small, contracted, round, dry
Pubic bones	Flexible, wide apart	Rigid, close together
Comb	Large, red, full, glossy	Small, pale, scaly
Wattles and ear lobes	Prominent, soft, smooth	Inconspicuous, rough, and dry

JUDGING FOR PAST PRODUCTION

	Long-laying period	Short-laying period
Vent	Bluish-white	Flesh-colored
Eyelids	Thin, and edges white, prominent, keen, sparkling	Listless, sunken
Ear lobes	Enamel white	Yellow-tinted
Beak	Pearly white	Yellow-tinted
Face	Clean-cut, sunken	Full, well-fleshed, yellowish
Shanks	White, flat, thin, creased	Yellow, round, smooth
Plumage	Worn, soiled, lifeless, close-feathered	Signs of molting, loose-feathered

JUDGING FOR RATE OF PRODUCTION

	High rate	Low rate
Keel	Slopes downward	Slopes upward
Pubic bones	Tips thin, points straight	Tips thick, curved in
Capacity	Four to five fingers	Two fingers
Abdomen	Soft, pliable, dilated	Fatty, hard, contracted
Rump	Broad, width carried back	Narrow, cramped
Skin	Soft, thin, loose, silky	Thick, dry, underlain with fat
Lateral processes	Prominent, pointed outward	Hard to find, pointed inward

JUDGING FOR PERSISTENCY OF PRODUCTION

	High persistency	Low persistency
Time of molt	In September or October and molts rapidly	In June or July and molts slowly
Wing molt	Drops 3 to 5 or more primary feathers at one time	Drops 1 or 2 primary feathers at once
Laying period	Eleven or twelve or more months of continuous production	Short-laying period accompanied by early and slow molt
Plumage	Worn, soiled, lifeless, and close feathered	Signs of molting and loose feathered.

* From Kansas Agricultural Experiment Station Circular 147.

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