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CULLING

FOR EGG PRODUCTION



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CULLING CHART

Use the indications grouped below as a yardstick to measure the probable worth of each hen in your flock. Find out:

Is She Laying Now?

| | <i>Laying</i> | <i>Not Laying</i> |
|--------------|------------------------|-----------------------|
| Comb | Large, red, waxy, full | Small, pale, scaly |
| Beak | Bleached at base | Yellow at base |
| Abdomen | Full, soft | Shallow, tight |
| Pelvic Bones | Flexible, wide apart | Stiff, close together |
| Vent | Moist, large, bleached | Dry, puckered, yellow |

How Did She Lay During the Past Season?

Characteristics useful in spring and summer in judging how long a hen has been laying.

| | <i>Long-Time Layer</i> | <i>Short-Time Layer</i> |
|---------|------------------------|-------------------------|
| Shanks | Completely bleached | Yellow |
| Molt | After August 15 | Before August 15 |
| Plumage | Worn | Fresh, loose |

What About Her Future Laying Ability?

Both hens and pullets can be judged as to prospective value in flock during next laying period.

| | <i>Good Layer</i> | <i>Poor Layer</i> |
|-------------|--------------------------|-----------------------------|
| Health | Good—high vitality | Poor—low vitality |
| Temperament | Alert, friendly, active | Dull, listless, or wild |
| Body | Wide, deep, and long | Narrow, shallow |
| Head | Large, strong | Shallow and weak, or coarse |
| Face | Lean, clean-cut | Coarse, wrinkled |
| Eyes | Bright, prominent | Dull, sunken |
| Beak | Short, stout | Long, thin |
| Skin | Soft, thin, silky, loose | Coarse, dry, tight |

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Culling for Egg Production

CULLING is weeding out the poor hens and saving the good ones. The ordinary farm flock includes three groups of layers. Twenty per cent or more of the hens are poor layers. These should be removed at the end of the first year's laying to save feed and leave more room for the good layers. About 50 per cent of the flock are medium producers, laying 100 to 125 eggs a year and about paying for their keep. The remaining 30 per cent are the hens that lay early and late, making a real profit for their owners. This bulletin is intended to aid in weeding out the unprofitable hens from the farm flock, so it will produce more and better eggs with lower costs for feed, housing, and management.

No farm practice will show results more quickly than will systematic, continuous culling. In only a few years the entire flock can be improved almost beyond recognition. Handling each bird will teach the owner much about his flock. It will lead him to form the habit of observing daily the condition of the flock and to select the desirable birds and use them for continuous improvement of the entire flock.

When Should Culling Be Done?

Culling should begin with the egg and continue until the birds are disposed of. Eggs for incubation should be carefully selected. Only strong, vigorous, healthy chicks should be placed in the brooding pens. Unthrifty, stunted birds should be removed from the growing flock and no pullet should go into winter quarters unless she has good health and size, abundant pigmentation (yellow skin color), excellent type of head and body, early development, and freedom from serious breed defects. The small, undersized, slow-maturing, unthrifty pullets should be marketed.

Throughout the laying year, pullets that have lost vigor, that start laying late, or that are irregular producers should

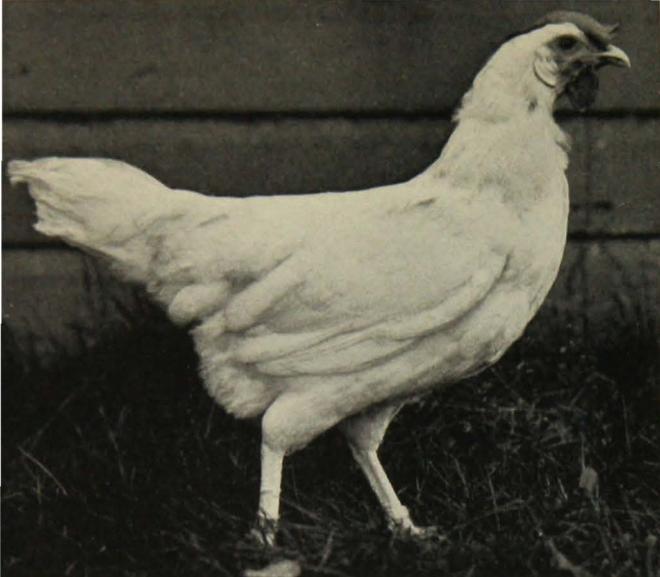


Fig. 1. Good Layer—211 Eggs
Note long, deep body and large,
strong head.

be removed from the flock as soon as detected. Systematic culling—that is, handling and carefully examining every bird in the flock—may be profitably done any time between June 1 and September 1. If the flock is to be culled but once, the work should be undertaken by the middle of August. Fully one fourth of most flocks can be culled out in early June, thus saving feed for the rest of the summer.

However, much useful culling can be done without handling the entire flock several times during the summer. Non-producers can be detected on the floor, or on the roosts at night by using a flashlight.

Trap-nesting Aids Culling

The trap-nest is to the laying flock what the scale and Babcock test are to the dairy herd. Trap-nesting is the one and only means of determining with complete accuracy the production of the individual hen. This method, however, involves a large amount of time and work and is recommended only to specialized breeders who can capitalize on trap-nesting records through pedigree breeding.

The trap-nest makes it possible to study the laying performance of individual birds along with the external body changes that take place from time to time. From such studies have come certain rules or guides to culling by which the low, medium, and high producers may be recognized with a high degree of accuracy at certain seasons of

Fig. 2. Typical Poor
Layer—Not Laying
Note shallow body and head.



the year and the undesirable birds removed. The experience and care of the operator, of course, have much to do with his ability to cull accurately.

Requirements for Successful Culling

The first requisite of accurate selection for production is a normal flock, a flock that is of good vigor, free from disease, and that has had good feeding, housing, and general management.

Equipment and preparation—To have the birds handy, confine them to the house the night before. If possible, use a wire catching crate like that shown in figure 3. The birds may be driven into this from either end and easily removed from either end or the top. A convenient crate is about 42 inches long, 24 inches wide, and 16 inches high, with sides made of wire, ends with full-sized sliding doors of wire, the bottom a solid wood platform, and a top slatted with a center door. The top should be well supported to provide a seat when removing or handling the birds. An ordinary shipping crate may be used if necessary, but is not so convenient.

A catching hook made of stiff No. 8 or No. 9 wire is handy for picking up individual hens at any time, or in catching the stray hen while culling. Take care to prevent undue excitement or injury of the birds.

Provide extra market crates or a convenient room to hold the culled birds so they may be removed from the flock



Fig. 3. Catching Crate
*Remove bird by wing, held close
to body.*

immediately. Do not attempt to band or mark the culls and allow them to run with the selected hens. A culled bird running with the flock may lose her band or shed her cut tail feathers and then pass as a choice layer.

Catching the birds—The best method is to place the catching crate at the poultry exit door on the outside of the house or between pens. If the exit door is near one corner of the house or pen it will aid in driving the birds into the crate. Up to 30 birds may be driven into the crate at a time, depending on its size. Do not crowd the hens.



Fig. 4. Catching Hook

If none of the equipment mentioned can be had, take about 10 feet of 2-inch mesh fencing or other close-woven wire fencing about 5 feet high, with a wooden strip fastened at each end and weights along the bottom to prevent the birds from getting under. Short strips of 2x4 lumber will answer the purpose. Nail one end of the wire to the wall about 5 feet from the corner of the room. Hold the other end out into the room and drive the desired number of birds into the corner, closing in the fence behind them and fastening the loose end to the wall. The person who is to catch the birds should stay inside the fence and hand the birds over to the one doing the culling.

Fig. 5. How to Hold a Hen



Holding the birds—With your right hand grasp the hen firmly by the right wing, close to the body, and remove her from the catching crate. Now run the palm of the left hand along the breast bone until you can clasp the thighs close up to the body. With the hen's head toward you, with your thumb hold her right thigh. Your first and second fingers will help support her breast and your third and little fingers will hold her left thigh, the breast resting on the palm of your hand. (For left-handed persons the hands may be reversed.)

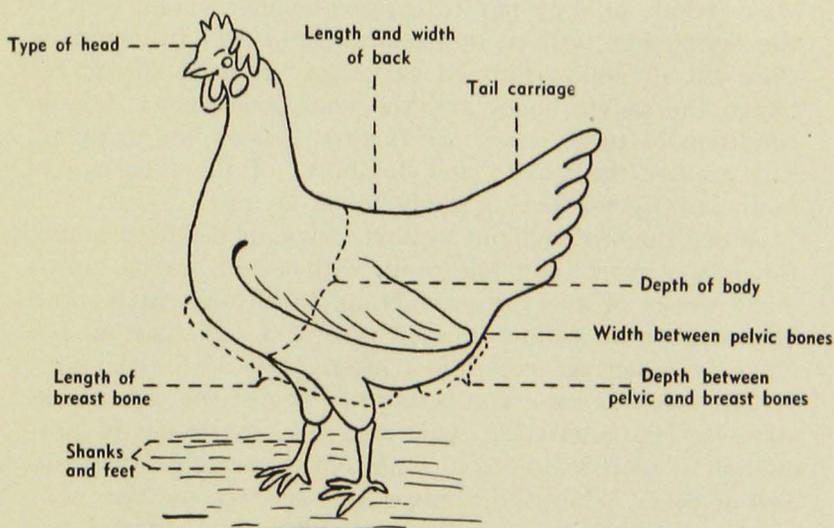


Fig. 6. Characters Used in Judging Laying Ability

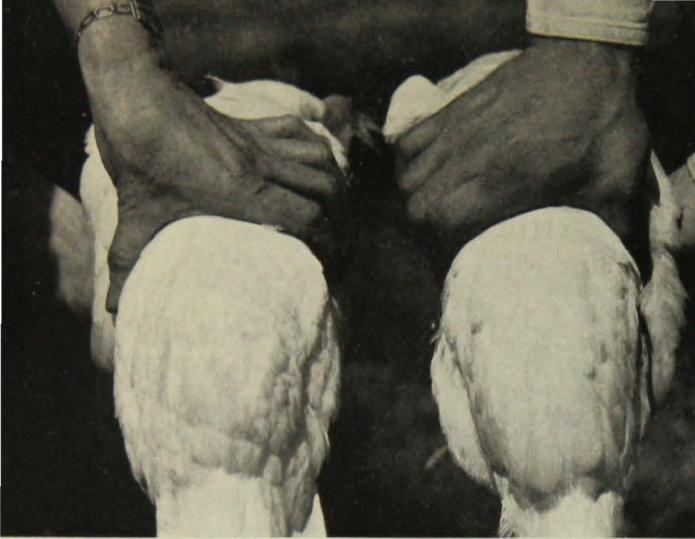


Fig. 7. Wide Back, Left;
Narrow Back, Right

In this position the bird is comfortable and relaxed and may be turned in any direction without releasing the hold of the left hand. The right hand is free for making whatever examination is desired.

External Characters

Laying or not laying—When culling, it is always important to know whether or not the hen being handled is laying. The hen in laying condition shows it by her red waxy comb, and by her full, soft abdomen. The vent of the laying hen will be large, moist, and free from yellow color (in all yellow-skinned varieties). A wide spread between the pelvic bones and the keel bone and a flexible condition of these bones are further indications of laying. The greater the spread and flexibility of these parts, the more heavily the hen is likely to be laying.

When the bird is about to start to lay, or has been laying for only a short time, the comb will be hot. After six to eight weeks of average production, the beak will be well bleached (on all yellow-skinned varieties). The earlobe (on yellow-skinned varieties) fades after a few days of laying.

The condition of a non-laying hen is just the opposite in all these characteristics. One sign that she is out of production or soon will be is a comb that is shriveled, dry, and cool or cold. When the comb is as described, the vent will be dry, puckered, and yellow (on all yellow-skinned varieties). Examine the base of the feathers on the neck and

Fig. 8. Measure Depth
at Front



body for signs of molt. This is indicated by the presence of pin-feathers; the old broken, worn, soiled feathers that are dry at the base are being replaced by new, bright, clean feathers that have quills often filled with a bloody fluid at the base. A bird shedding her feathers during early summer is likely to be out of laying.

If the signs described are not clearly seen, examine closer. The beak may be all yellow (on all yellow-skinned breeds) or show yellow returning at the base of the beak, indicating that the bird has stopped laying and has replaced all or part of the yellow coloring. Likewise, the earlobes will be a pale to a deep yellow (on white-earlobed breeds). The pelvic bones will be thick, blunt, and close together. The abdomen will be shrunken, the skin hard and thick. When the hen has been out of production long enough to color the beak entirely, the legs, or shanks will also show the return of yellow color. Hens that have developed physical weakness or are sick should be culled immediately; they are seldom, if ever, laying.

Most Hens Lay, But Not All Are Good Layers

Heavy egg production requires that the birds have plenty of body capacity for consuming large quantities of feed and for the manufacture of eggs.

The heavy producer has a long, broad back, the width extending well to the rear, and has depth from the back to the breast bone. The depth should extend well to the rear also. The breast is full and deep. The head is large in

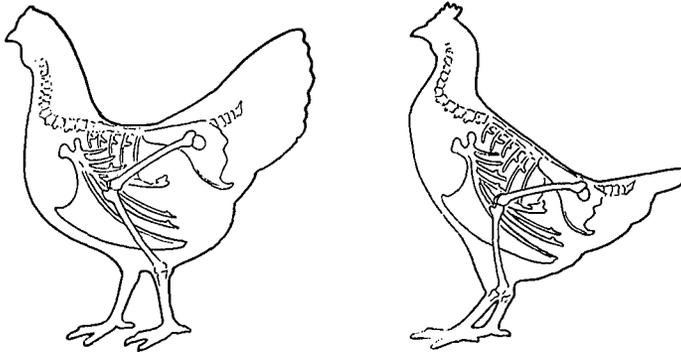


Fig. 9. Laying Hen and Non-Laying Hen

Note downward spread of keel and outward spread of pelvic bones in the layer.

proportion to the body and has a bright, alert, intelligent appearance.

The good layer molts rapidly and sheds her coat of feathers during late summer or early fall. The late molters are as a rule our best producers; the later the better, provided molting is completed before severe cold sets in. The pelvic bones are thin, sharp, pliable, and relatively wide apart. The breast bone will also be relatively far below the pelvic bones, giving the layer great width and depth, allowing greater capacity for her increased requirements for egg production.

To make a good year's record, a pullet must start laying at six or seven months of age. A pullet that does not begin to lay before November 1 and that does not show definite indications of persistent production by March 1 should be removed without further delay.

The type common to the poor layer is a shallow, short body, lacking in width and depth. A back that tapers decidedly to the rear or slopes downward indicates poor capacity. The long-legged, pigeon-toed, knock-kneed, cross-eyed, crow-headed individuals are useless as layers.

The molt—As long as a hen lays regularly she usually keeps her old feathers. When a hen in good physical condition stops laying she usually starts to molt. This means that, as a rule, the early molter is a poor layer while the late molter is a good layer. The neck usually molts first, followed by the back, wings, and body. The neck molt is

common at any season of the year, even among good layers. If the molt progresses to the back, the primary feathers of the wing generally molt out also. This stage of molting generally means that the bird has ceased laying entirely. By early summer the plumage of the good layer that has not molted is rough, dry, soiled, and worn; the tail and wing feathers are usually broken, ragged, and worn; the new plumage of the hen that has been out of laying for a few weeks is easily recognized by its clean bright color, with every feather perfect in shape. At the base of the new feather, the quill will be soft and filled with a bloody serum, while the quill of the old feather is dry and hard. Often the old feather will have an accessory plume (a small feather at the base of the large feather). A partial molt is usually due to a sudden change in the program of feeding, management, or housing.

The wing molt—When a general molt starts, that fact is registered in the primaries or outer section of the wing; and the length of time a hen has been molting can be determined by the number, shape, and length of the new feathers. When the molt starts, the feather next to the axial or center feather drops out, and, on the average, six weeks is required for the new feather to grow to full size. An additional feather

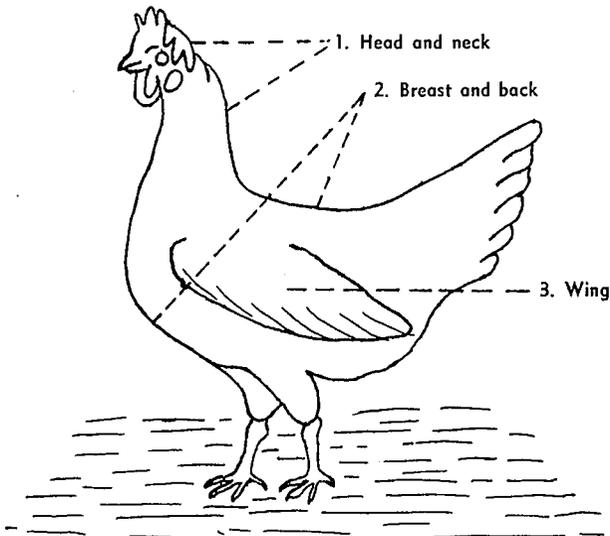


Fig. 10. Order of Molt

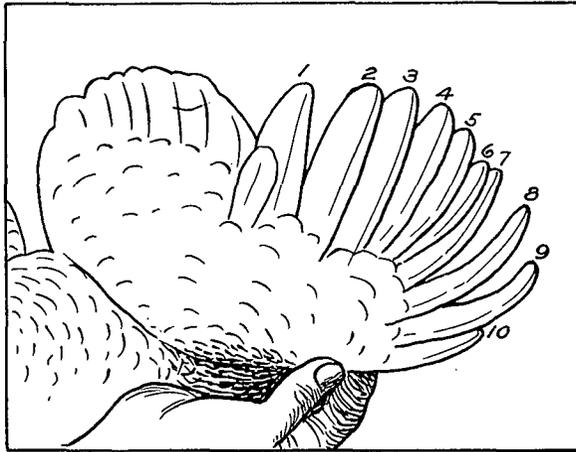


Fig. 11. Primary Wing Feathers
Molt starts with No. 1.

is dropped every two weeks. Thus with 10 primary wing feathers, a bird molting in this order would require about 24 weeks or six months. The good layer usually drops many feathers at one time and replaces them as one feather, thus shortening the molting period.

The stage of the molt assists in determining the length of the laying period by showing when the bird stopped laying.

Pigmentation or skin color—This is an indication of what the bird has done, rather than what she will do. In all yellow-skinned varieties, before the birds start to lay they show yellow color in the beak, eye-ring, earlobe (in all white-earlobed varieties), vent, skin, and shanks. The intensity of this yellow coloring is influenced by many factors—the kind of feed, the size and health of the bird, the intensity of production, and breeding. Birds fed yellow corn and plenty of green feed will have this yellow coloration more pronounced than those fed no corn and little or no green feed.

As production starts and continues, this yellow coloring fades from the various parts. Fading takes place in a definite order, starting in the softer parts of the body. The vent bleaches with the production of only a few eggs, the eye-ring almost as fast as the vent. With moderate continuous production, earlobes will bleach in two or three weeks. The beak is bleached in about six weeks from the base outward. If the shanks are well bleached on a yellow-

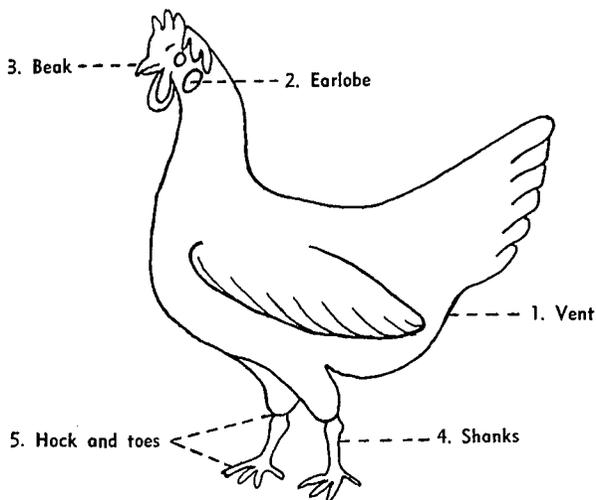


Fig. 12. Order of Color Fading

skinned bird, we may assume that the hen has been laying fairly heavily for at least 20 weeks.

As soon as the bird stops laying, the color returns in the same order in which it left, only more quickly.

Thus pigmentation can be used to determine not only whether the bird is laying, but how long she has been laying or not laying.

When culling birds with a skin color other than yellow, pay no attention to color changes. Breeds having earlobes other than white show no change in color of earlobes.

Other Factors

Early and continued laying—Other things being equal, the pullets that reach maturity first are likely to develop into better layers than those that mature slowly. The rate of maturity may be influenced by so many factors—late hatching, rearing conditions, management, or climate—that early laying is a less reliable index of production than is continued laying. With good management, pullets that develop in about five or six months, depending on the breed, and are mature and laying by September or October should be banded or marked in some way. The same pullets, if they show indications of continuous laying late into the following summer or early fall should be selected and used

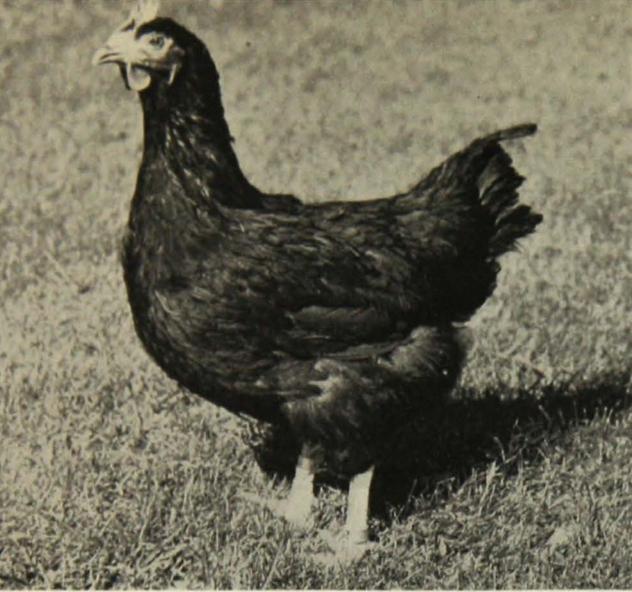


Fig. 13. A Good Laying Rhode Island Red

as foundation stock. Only by selective matings can there be any hope of improving the flock.

Regardless of the quality of the male birds, little improvement, if any, will ever result from mass or flock breeding.

Age in relation to culling—Production decreases with age. Ordinarily a hen's production the second year will be about three-fourths of her first year's lay, and the third year about half. Most of the production after the first year comes during spring and summer, when eggs are low in price. Thus the returns for each succeeding year fall much faster than does the rate of egg production. Therefore, if old birds are held over it should be for breeding purposes, rather than for production. Hens of heavy breeds should not be kept for layers after their second year and in most flocks not over 40 per cent of them past their first year. In the light breeds, hens that are especially heavy producers may be kept as long as the third year.

Culling the general-purpose breeds—This bulletin applies most specifically to the culling of egg breeds, but with some limitations it may be used for the general-purpose breeds or even the meat breeds.

The general-purpose breeds—Rhode Island Red, Plymouth Rock, and Wyandotte—can be culled successfully with allowances made for changes in the body and in color, the red

Fig. 14. A Poor Layer



earlobe in place of the white as found in the egg breeds, increased size of the birds, and lower production ability of the breeds. Color and body changes due to production will be the same in the heavy breeds as in the light but much slower. As mentioned in the section on "Pigmentation," white-skinned breeds such as Orpingtons must be judged without the help of color-fading.

Broody hens—When a hen goes broody, her reproductive organs shrink very rapidly. She eats less and her whole abdominal region contracts. On the average a hen loses about two weeks from production each time she becomes broody, even though she is "broken up" at once. Broody hens are not necessarily cull hens and need not be disposed of when found unless they are habitual offenders.

Culling the pullets—Early development is an important factor in the culling of pullets. The ideal time to cull pullets is when they are just starting to lay. The mature early layer is usually the best layer in the flock. Only the pullets that are large for their age and of excellent health and vigor, with an abundance of body coloring, of fine breed type, possessing early development, and freedom from serious breed defects, should be retained in the flock.

Hens may be culled on the basis of past production, that basis being much more accurate than pullet culling.

CHOOSING BIRDS

Keep the Hens

1. That are strong, vigorous, healthy, active, busy.
2. That have large deep heads, stout beaks, and large, bright, prominent eyes.
3. That lay latest in the summer.
4. That lay continuously long enough to bleach their shanks completely.
5. That molt after August 15.

Discard the Hens

1. That are unhealthy or unthrifty.
2. That have crow heads, long shallow beaks, or small, sunken eyes.
3. That stop laying before August 15.
4. That stop laying before their shanks are completely bleached.
5. That molt before August 15.

Selecting the breeding males—To a large extent, the scrub or mongrel rooster is responsible for the low average egg production found on the farms in Minnesota. From the standpoint of future production, the male is half the flock, and special care should be taken in his selection. He should be vigorous, having a deep body and a wide, long back. His pelvic bones should be thin and evenly curved. He should have large size, excellent health, and should be of clean breed type. He must be an excellent representative of his breed.

Organizations Assist in Breeding

The American Poultry Association publishes the American Standard of Perfection, which is our best guide, and we urge its use in the selection of quality males from high-producing hens. The Minnesota Poultry Improvement Board, the Live Stock Sanitary Board, and the American Poultry Association are co-operating with the University of Minnesota in aiding the poultry breeder, the hatcheryman, and the farmer toward improvement of their poultry flocks.

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