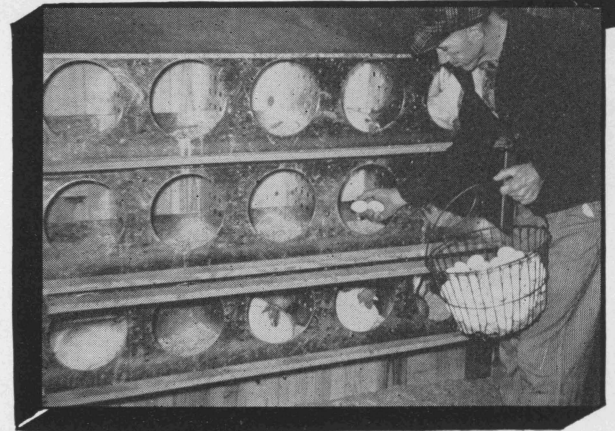
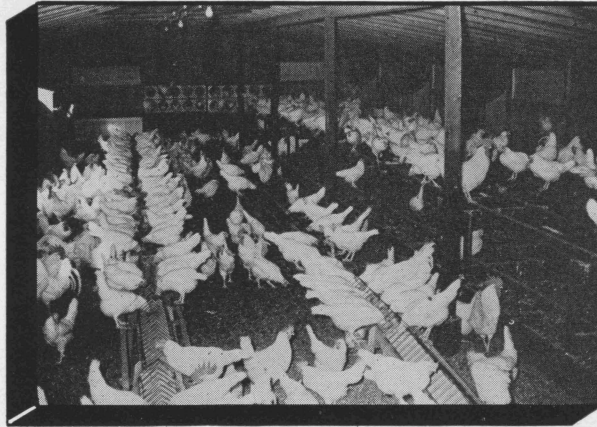
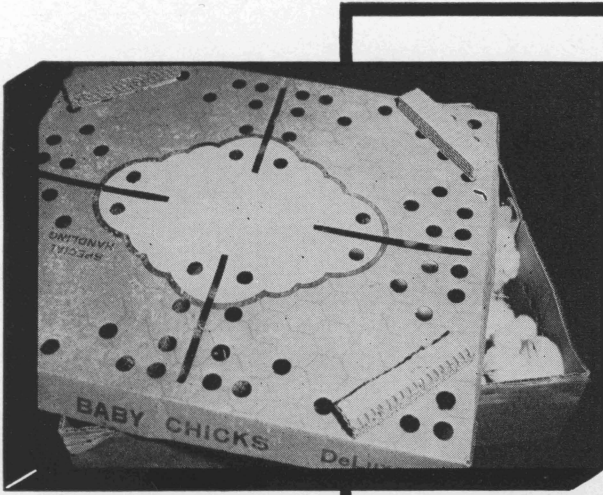


How To

Produce Quality Eggs



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How To Produce Quality Eggs

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Why Produce Quality Eggs

The demand for high quality eggs likely will continue to grow for some time. If producers are to benefit fully from this growing demand, they must know what constitutes high quality in eggs, how such eggs can be produced and how such quality may be retained.

Eggs are subject to rapid deterioration and so they are easily affected by unfavorable surroundings. In food value, flavor and general attractiveness, eggs are better when first laid than at any time later. Consumers are quick to discriminate against low quality eggs; therefore, it is important not only that the right kind of eggs be produced but that they reach the consumer with the least possible loss of their original quality.

What Egg Quality Is

Egg quality consists of the combined elements of an egg which increase the market value to the producer, the keeping quality to the middleman, and the appearance and nutritive value to the consumer. The exterior of an egg is judged to be good if the shell is smooth, oval-shaped, evenly colored, absolutely clean, and of good texture. Interior quality is usually judged by candling. For eggs to be of good interior quality, the yolk must be uniformly light colored and well centered. The chalaza must be indistinct and the air cell, small. No blood spots or meat spots should be apparent. Yolk color may vary from light cream to deep orange, depending principally on the amount of pigment bearing feeds the bird has eaten. Choice of yolk color varies with consumers. Some prefer light colored yolks over those that

are deep orange. Normally the albumen is a clean semi-transparent mass. Eggs in which the albumen stands up well around the yolk are high in quality and show that they have been held in low temperature.

Low Quality in Freshly Laid Eggs

The quality of an egg cannot be improved after it has been laid; the quality can only be maintained. Double yolked eggs are sometimes produced by pullets just starting to lay. Occasionally two or more yolks mature at the same time and start down the oviduct together, producing double yolk eggs. However, few hens lay double yolk eggs consistently, and the producer has little control over them.

Blood spot or meat spot eggs contain blots or streaks of blood or flesh-like masses of material. Meat spots seem to be disintegrated blood spots. Sometimes the spots may appear as a white membrane-like material. Blood spot eggs are thought to be caused by hemorrhages that occur during or just prior to ovulation. If spots are larger than one-eighth inch in diameter, the egg is classed inedible.

Is breeding or management the cause of blood spots? Mainly, the problem is one of breeding, although management is of some importance. It has been proved that certain hens lay eggs with a higher percent of blood spots than others. A breeding program conducted by the USDA developed one line of chickens of the same strain averaging 80 percent of blood spots and another averaging 20 percent blood spots. Therefore, the major cause of blood spots appears to be heredity. Replacement chicks should be purchased from a breed-



Provide plenty of clean oyster shell at all times.

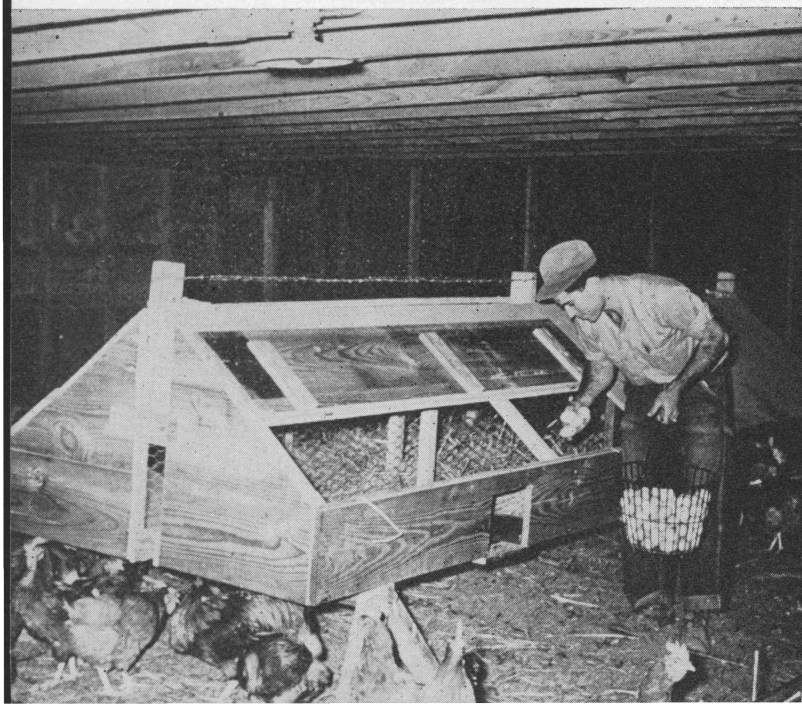
er or hatcheryman who is paying attention to the quality of his eggs, thereby eliminating birds that lay eggs with blood and meat spots.

Flock management seems to have some effect on the number of blood spot eggs that are laid. Good management should be practiced to keep blood spots at a minimum. There is no relation between rate of production or annual egg production and percent of blood spots in eggs.

Small Eggs

Small eggs are caused either by heredity or by the pullet laying too young in life. Egg size is an inherited characteristic; consequently, hens should be selected partially for their

Community nests must be well ventilated.



egg size. Again it is important to check the source of birds to see that they come from a strain that produces large-size eggs. If pullets are brought into production at too early an age or before mature body size is reached, they will tend to lay small eggs for a longer period.

Thin or Soft Shelled Eggs

One or more of the following factors may be responsible for soft shell or thin shell eggs: the hen, her environment, or the feed.

The ability to produce strong firm shells is an inherited characteristic. Certain birds may lay soft-shell eggs continuously even if they are supplied with sufficient Vitamin D, calcium and other essential materials. Certain strains of hens have been developed that can produce thick shelled eggs. Other strains have been found to produce thin shells, so breeding does affect the shell quality of the eggs; but a hen can produce good shells on her eggs only if she is provided with proper shell building materials. Calcium bearing feeds are essential for producing strong, hard-shelled eggs. This material is usually provided in the form of oyster shell. One pound of oyster shell contains enough lime for the shells of about eight dozen eggs. Along with the oyster shell there must be sufficient amount of Vitamin D furnished the hen so that she can make efficient use of the calcium. Oyster shell should be available to hens at all times. It should be placed in an open hopper and kept clean. Sprinkling shell on top of the mash two or three times a week increases calcium consumption. Regular size oyster shell should be fed since hens sometimes dislike it when it is finely ground. Vitamin D and essential minerals for the production of good egg shells are usually provided in commercial feed.

Diseased hens often will produce low quality eggs. Infectious bronchitis or Newcastle disease will frequently cause thin albumen, soft shells, or poor shell shape and texture. Only disease free, healthy birds should be kept in the laying flock.

Dark Yolks

Eggs with dark yolks are known as "grass eggs;" yet few are the result of eating grass.



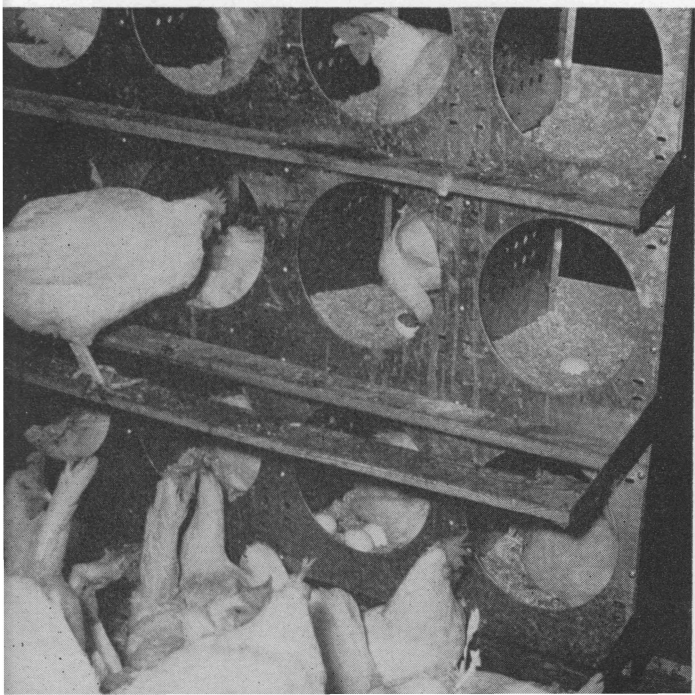
Dropping pits should be screened to keep birds out of droppings.

Acorns in the diet will cause yolks to be dark. Cotton leaves, cottonseed meal and certain plants such as penny cress and shepherd's purse will cause egg yolks to darken. Much of this darkening does not occur until eggs have been stored for a few weeks. Silage in the diet of hens has caused yolk darkening. Feeding of cabbage, garbage and large amounts of fish oils have been found to cause off odors and off flavors in eggs. By confining the flock, the kind of feed the hens eat can be controlled.

How to Produce Quality Eggs

Cleanliness is a must in profitable egg production. Consumers want and should get clean

Provide one individual nest for every four or five hens.



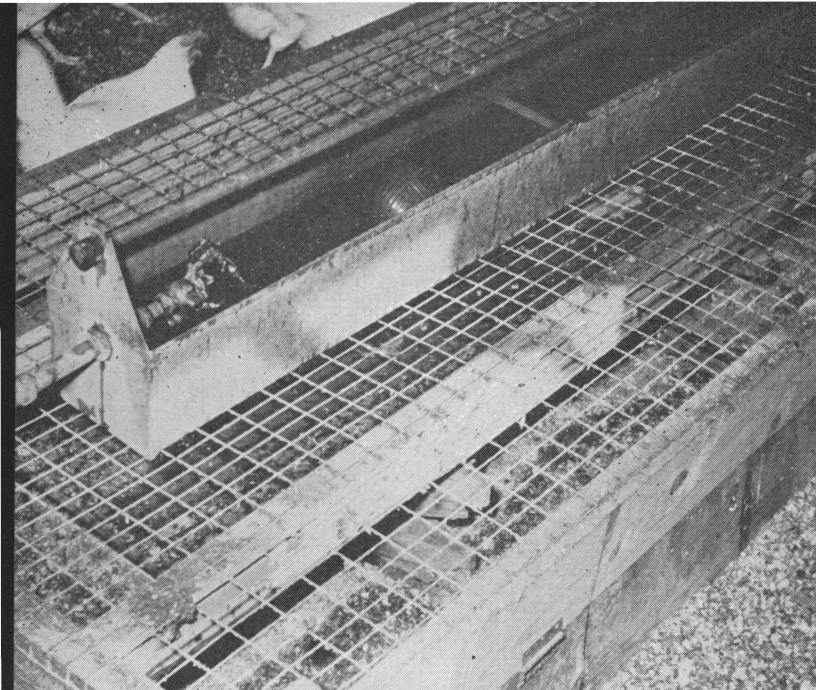
eggs. When an egg is first laid, it is clean. A dirty nest, a hen with muddy feet or broken eggs in the nest will cause dirty eggs. Provide at least one nest for each four or five hens. The two most common types of nest are the community and individual. The best nests are simple in construction, portable and easy to clean. They should also retain the nesting material and provide semi-darkness for the hens' comfort. The individual nest should be at least 14 inches wide by 16 inches deep and 12 inches high. Community nests should provide at least one square foot of floor area in the nest for each five hens. The floor as well as the back of the nest should be constructed with either poultry wire or hardware cloth to allow ample ventilation. Some type of litter should be provided for the nest. Nest pads, straw or saw dust, shavings, pea gravel, or rice hulls make good nesting materials.

The floor of the house should be covered with a good, deep, dry litter. Confining birds to the house, especially in rainy weather, helps keep eggs and the litter clean and dry. Dropping pits should be provided under the roost so that hens will not walk through droppings and track them into the nests.

The type of waterer used may determine to some extent how many clean eggs are gathered in the laying house. Hens have a tendency to let water drip from their beaks and wattles. Drinking fountains that prevent this should be used. The hens tracking through the wet litter will carry some of the material to

Litter in the nest is necessary to help prevent broken and dirty eggs.





Wire platforms under waterers keep birds out of wet litter.

the nest and over the clean eggs. Waterers should be set on a wire platform so that any drippings that fall to the litter will not be exposed to hens.

Eggs should be gathered at least three times a day, preferably four times, to prevent deterioration and breakage. During hot weather, eggs will begin to deteriorate and lose quality rapidly if they are not gathered often and placed where they can cool. They should be gathered in a wire type basket so that they will cool faster. When eggs are allowed to pile up in the nest there will be more breakage, thus causing the other eggs in the nest to become soiled.

Market eggs should be infertile eggs. Keeping roosters in a laying flock producing market eggs is economically unsound. Roosters consume feed and are unnecessary in the production of market eggs. Fertilized eggs begin embryonic development at 68°F. Forty-eight hours of development at incubation temperature will make fertile eggs inedible.

All broody hens or sick hens which stay on the nest should be removed from the flock. The body temperature of a hen is from 104° to 107° degrees F. A setting hen, therefore, will lower the quality of eggs in a nest very rapidly. Setting hens are also responsible for many dirty and broken eggs. A broody or cull coop can be built near the nest, off the ground, where broody and cull hens may be confined.



Place cull and broody hens in confinement in cull coops immediately upon finding them. They can be marketed later.

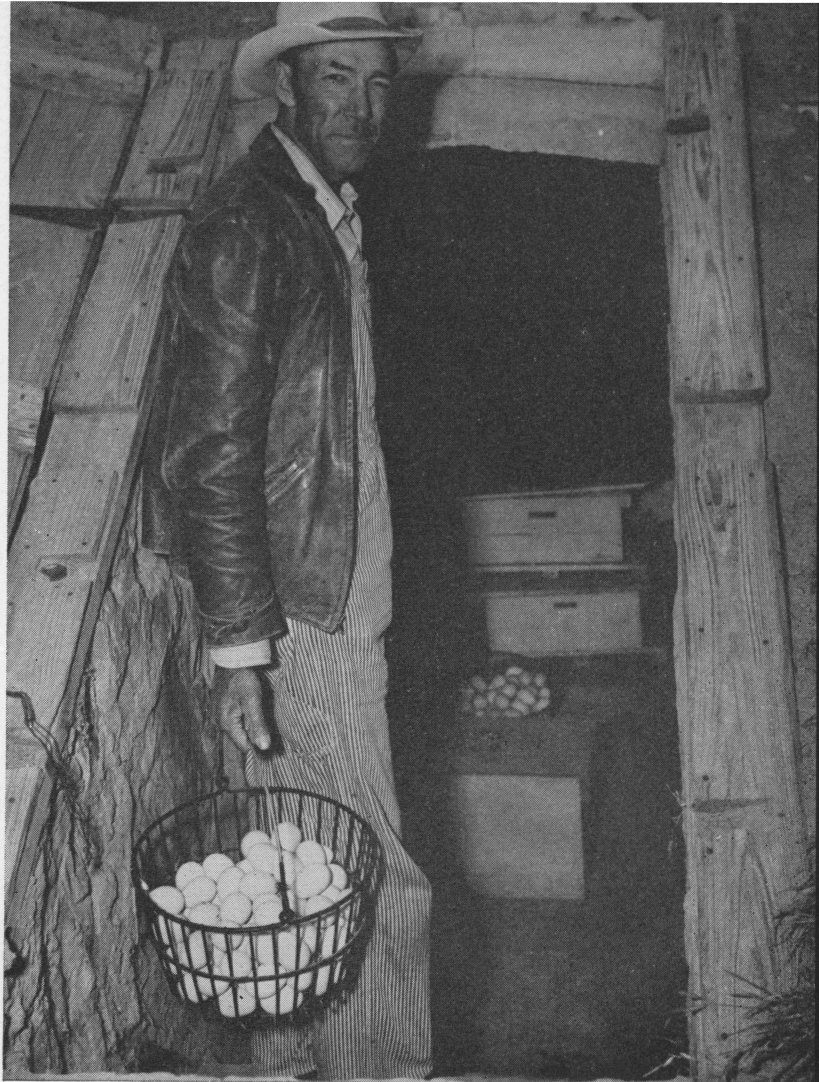
Clean any dirty eggs with sand paper, emery cloth or steel wool before casing.



This coop should have a wire floor and be provided with both fresh water and feed.

Eggs are perishable even though nature has provided them with a protective cover. The temperature of an egg is approximately 107° F. when laid. The more rapidly this egg can be cooled to 50° or 55° F., the slower the deterioration of that egg. The animal heat should be removed from the egg quickly. A cool moist storage room should be provided on every farm so the eggs can be cooled properly before they are cased. The time necessary to cool eggs will depend upon the type container used for cooling. In a room that has a temperature of 50° to 60° F., eggs spread on a wire tray cool to 60° in about three hours. When a wire basket is used to hold eggs while cooling, the temperature is reduced to the proper level in approximately five hours. Eggs held in a solid pail require approximately 11 hours to cool and eggs cased immediately after gathering require about 19 hours to cool.

Moisture is essential in maintaining egg quality. The relative humidity in the egg cooling room should be 80 to 85 percent. Moisture may be added to the cooling room in various ways. Water can be run through it in a trough on the floor or it may be more convenient to let water drip on hung burlap and evaporate in the room. Some producers cover the floor with sand and sprinkle it with water each day to provide the necessary moisture.



Cool eggs in cool, humid cellar or room soon after gathering.

Remember These Rules for Producing Quality Eggs:

- Start with birds that have inherited ability to lay high quality eggs.
- Feed a balanced ration.
- Have adequate nesting space. (One nest to five hens).
- Cull all broody or sick birds.
- Provide clean litter or pads in the nest.
- Keep litter deep and dry in the laying house.
- Clean all dirty eggs before marketing them.
- Gather eggs in wire baskets.
- Cool eggs in cool humid cellar or cooler before casing them.
- Case eggs with small end down in cases that have been cooled and humidified.

OTHER POULTRY BULLETINS RELATED TO EGG PRODUCTION

Available From Your County Agricultural or Home Demonstration Agents

- FHH-368 Cannibalism in Chickens and Turkeys
- B-173 External and Internal Parasites of Poultry
- C-298 Growing Chicks for Flock Replacement
- C-324 Guide for Controlling External Parasites of Livestock and Poultry
- C-322 Trouble Shooting Chart for Poultry
- B-71 Poultry Yard Equipment
- MS-887 Poultry Disposal Pit
- B-206 Managing the Laying Flock
- C-338 Laying Cage Management
- C-260 Keep Hens Happy
- C-274 Culling Poultry for Profit

Information in this publication emphasizes some of the steps in the Texas 9-Point Livestock and Poultry Program, sponsored by the Texas A. & M. College System. See your local Extension agents for more details on this program.