A Weekly Page of Poultry Hints to You

Here is a Department Full of Bright Ideas For Readers of the Home and Farm Magazine Section.

The following is the fourth and last of a series of articles by Harry M. Lamon, Senior Animal Husbandman in Poultry Investigations, Animal Husbandry Division of Bureau of Animal Industry of the United States Department of Agriculture, on the natural and artificial incubation of hens' eggs.

Moisture and Ventilation.

Moisture and ventilation are closely related factors in incubation, the amount of each depending upon the other. The former is one of the uncertain factors, for as yet no very satisfactory rules have been evolved which will cover all conditions. Good hatches are secured both with and without using moisture, under aparently similar conditions, while each operator generally works out by experience the best amount of moisture to use under his conditions. The moisture and ventilation should, with correct heat, produce a normal chick at the end of the incubation period. Too much moisture may prevent the normal evaporation necessary to allow enough space for the chicken to turn in the egg and break the shell, while too little moisture may cause the chicken to become dried and stick to the shell. Moisture is used extensively in hatching in the South, in high altitudes, and in places where the incubator is run in a dry room.

Many methods are used to supply moisture in incubators, such as sprinkling the eggs with warm water at about 100 degrees F., or placing a pan of water, a receptacle containing moist sand, or a wet sponge below the egg tray. Another common method of supplying moisture is to sprinkle or soak the floor of the incubator room or to place a pail of water under the lamp. There is less danger of getting too much moisture in the incubator by this method than by putting moisture directly into the egg chamber. If a moisture tray or sponge have been added to a non-moisture machine, they should generally be taken out before the chicks pip. The question of moisture depends largely on the place where the incubator is located. If run in a room in a dwelling house, it is frequently necessary to add moisture even to non-moisture machines, while such machines run in an ordinary cellar in the same building might not need extra moisture. When a large number of machines are operated in one room extra moisture is more necessary than if only a few are kept together, while more moisture must be supplied in a very dry than in a humid climate.

The air cell varies in size with the size of the egg, while the shape varies greatly in different eggs. Moisture on the glass door of the incubator during hatching time is the best indication of correct moisture conditions during incubation. A good way to learn the proper amount of evaporation during incubation is to set one or two hens when starting the incubator, and compare the size of the air cell in the eggs under these two conditions when testing on the seventh and fourteenth days. As the weather becomes warmer more moisture is generally used than earlier in the season. Many oprators add moisture only during the latter part of the hatch, generally on the sixteenth, seventeenth and eighteenth days.

Testing Eggs.

An egg, whether impregnated or not, has a small grayish spot on the surface of the yolk known as the "germinal spot." As soon as a fertile egg is placed under a hen, or in an incubator, development begins. All eggs should be tested at least twice during the period of incubation, preferably on the seventh and fourteenth days, and the infertile eggs and dead germs removed. White eggs can be tested on the fourth or fifth day, while the development in eggs having brown shells often can not be seen by the use of an ordinary egg tester until the seventh day. Dead germs soon decay and give off a bad odor if allowed to remain in an incubator. Infertile eggs make good feed for young chickens, and are often used in the home for culinary purposes. Most incubator companies furnish testing chimneys with their machines which will fit the incubator lamps. Electric or gas lamps may be used in a box with a hole slightly smaller than an egg cut in the side of the box and at the same level as the light. They may also be tested by sunlight, or daylight, using a shutter or curtain with a small hole in it for the light to shine through.

A good home-made egg tester, or candler, can be made with a large shoe box, or any box that is large enough to go over a lamp, by removing the end and cutting a hole a little larger than the size of a quarter in the bottom of the box, so that when it is set over a kerosene lamp the hole in the bottom will be opposite the blaze. A hole the size of a silver dollar should be cut in the top of the box to allow the heat to escape.

The eggs are tested with the large end up, so that the size of the air cell may be seen as well as the condition of the embryo. The testing should take place in a dark room. The infertile egg when held before the small hole with the lamp lighted inside the box will look perfectly clear, the same as a fresh one, while a fertile egg will show a small dark spot, known as the embryo, with a mass of little blood veins extending in all directions, if the embryo is living; if dead, and the egg has been incubated for at least 46 hours, the blood settles away from the embryo toward the edges of the yolk, forming in some cases an irregular circle of blood, known as a blood ring. Eggs vary in this respect, some showing only a streak of blood. All infertile eggs should be removed at the first test. The eggs containing strong, living embryos are dark and well filled up on the fourteenth day, and show a clear, sharp, distinct line of demarcation between the air cell and the growing embryo, while dead germs show only partial development, and lack this clear, distinct outline.

Causes of Poor Hatches.

The cause of poor hatches is a much-discussed question, which depends on a great variety of circumstances. A poor hatch is more apt to be due to the condition of the eggs previous to hatching than to incubation, although improper handling of either factor will produce the same results. When eggs fail to hatch, see whether the breeding stock is kept under conditions which tend to produce strong, fertile germs in the eggs, if the eggs have been handled properly before incubation, and whether the conditions were right during incubation, as judged by the time of the hatch.

A daily temperature record should be kept of each machine. The operator can thus compare the temperature at which the machines have been kept, which may prove of value in the future work, especially if the brooder records can be checked back against those of the incubator.

Disinfecting and Storing Incubators.

After the hatching season is over, clean and disinfect the incubators, empty the lamps, and carefully store the parts in the machine. Lamps containing oil which are left in their proper place on the incubator for some time after the hatching season is over will cause trouble when it is started again, as the oil tends to work up into the hood. The incubator should be disinfected once a year, or oftener if any disease is present in the hens or chickens. Some operators prefer to disinfect their incubators before or after each hatch. A strong solution of a reliable coal-tar disinfec- and may be used to wash out the machine and to disinfect the egg trays and nursery drawer. If the burlap on the bottom of the incubator is very dirty it may be cheaper to renew than to clean it. For an incubator of about 3 cubic feet capacity one may pour one-half ounce of formalin, which contains 40 per cent formaldehyde, on one-half ounce of permanganate of potash, in a pan in the incubator, which produces a very penetrating gas and thoroughly disinfects the machine. The door of the incubator should be closed just as soon as the liquid is poured into the pan, and left closed for 12 hours or longer. Incubators should be well aired before they are used after disinfecting, especially when formaldehyde or any disinfectant which produces a gas has been used.

Summary.

Follow the manufacturer's directions in setting up and operating an incubator.

See that the incubator is running steadily at the desired temperature before filling with eggs. Do not add fresh eggs to a tray containing eggs which are undergoing incubation.

Turn the eggs twice daily after the second and until the nineteenth day. Cool the eggs once daily, according to the weather, from the seventh to the nineteenth day.

Turn the eggs before caring for the lamps.

Attend to the machine carefully at regular hours.

Keep the lamp and wick clean.

Test the eggs on the seventh and fourteenth days.

Do not open the machine after the eighteenth day until the chickens are hatched.

Poultry Hints

FREQUENT changes of litter and nest box material are called for these August days. Burn the old material as soon as possible. Lice multiply at an alarming rate and dirt and filth double their harmfulness under the influence of summer heat. Now is the time to begin to think of the moulting season and prepare for it. Study the subject carefully as it has an important bearing on winter egg production. Winter eggs are eggs of gold nowadays.

Fine feathers count for a great deal in winning prizes at poultry shows.

Commence to gather dry road dust and put away in barrels in a dry place for next winter's use.

Don't crowd the hens in warm weather, for it makes them quarrelsome and leads to feather pulling.

Plan now to provide comfortable quarters for the poultry during the winter when the price of eggs is highest.

Those hens that moult early in the season and get well feathered out by October or November can be counted as winter layers.

Fresh, clean water is particularly important during hot weather and a fresh supply should be given at least three times a day.

The object at this season is to reduce the flocks to a profitable basis, as it does not pay to winter useless birds. Sell them now.

The hens that moult early will be the best winter layers, and their feed should be of that kind which makes good the loss they sustain in losing their feathers.

Summer days are anxious days to the alert poultry breeder. Now if at any time he must be wide awake and on the lookout daily to see that everything is provided for the comfort and well-being of his flock.

Should you feed cabbage stumps, lettuce or other vegetable matter be sure to remove what is left over before it begans to decay, which happens quickly in the hot weather. Decayed vegetable matter is no better for chickens than it is for men.

Keep an eye on the chickens with the matter of culling next month in mind. Birds that are getting old or show a lack of vitality should be fattened up preparatory to being sold or furnishing a tempting addition to a Sunday dinner.

The best way to get a line on what your birds are worth is to enter some of the best ones at the local, county and larger poultry shows. If they are prize winners your flock increases greatly in selling value and if they are not winners you can see where they are deficient. The education is worth the expenses of showing, even if you do not win.

Treat the Ducks Well.

A Pekin duck responds readily to good treatment. They appreciate plenty of food and comfortable quarters, but they should not be fed or housed with chickens, nor, in fact, with any other fowls, for they are very timid creatures and should be kept as quiet as possible.

Composition of Egg.

More than three fourths of an egg is water, so you can see how necessary it is that the fowls should be kept supplied with an abundance of water. It should be pure, and be given to them in some way they cannot get it foul.

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