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The Baby Chick
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THE BABY CHICK



MICHIGAN AGRICULTURAL COLLEGE
EXTENSION BULLETIN

R. J. BALDWIN, Director

Brooding Practices

Thorough preparations for the reception of the chicks should be made several days in advance of their arrival.

1. The colony house or building used should be tightly constructed and one which can be easily ventilated. Adjustable openings in both the front and rear of the colony house, directly below the roof, should be provided, especially for summer ventilation. This permits good air circulation and releases the warm air which tends to accumulate near the roof. The growing chicks have all the open air benefits obtained while roosting in trees, with the additional advantage of shelter during inclement weather.

2. The floor of the colony house should be dry, warm and free from draughts. A covering of white sand to a depth of two inches provides ideal conditions and in addition supplies grit material.

3. The brooder stove should be operated two or three days previous to the arrival of the chicks. The automatic heat regulator should commence to check the dampers when the thermometers register 90° F. directly below the outer edge of the canopy or deflector. This will provide sufficient heat and allow the chicks to select the temperature required for their comfort. The thermometer can be discarded once the brooder has been regulated, and heat can be increased or decreased according to the demand of the chicks, as indicated by huddling or withdrawing from the heat.

4. A wire cloth screen should be placed around the brooder at a distance of 15 inches from the outer margin of the heat deflector. This confines the chicks, preventing them from straying too far from the source of heat before they are educated to return when uncomfortable. The screen may be removed after the third day, or gradually widened out, giving more floor space.

5. Avoid overcrowding—this applies both to brooder and house capacity. Many chicks are killed or ruined when the capacity of either is over-rated. A colony house 10 x 10 feet will accommodate 300 to 500 chicks quite satisfactorily. Larger units may produce excellent results, but require more experience in this special phase of work.

6. Chicks have a tendency to withdraw from the brooder as they get older and frequently crowd towards certain corners. Huddling may result, due to a sudden drop of temperature, should the fire get low. If this occurs, a high mortality usually results and a weakened condition is apparent in those that do survive. Keep the corners of the house screened off.

7. The chicks should be coaxed outside during the first and second week. Leg weakness can usually be avoided if the chicks cultivate the habit of running outside almost continuously. They appear thriftier and do not develop the hot-house appearance of closely confined chicks.

8. Low, flat roosts should be placed in the colony house after the second week, thereby educating the chicks to roost early. Once the chicks have taken to roosting the danger point is past.

9. Reduce the temperature as the chicks get older, but do not be too hasty in taking away the heat. Sudden showers may occur, in which case a little heat will provide greater comfort and may save the lives of many chicks if they get chilled.

10. Segregate the broilers and cull pullets and draw the colony house to a well shaded range where plenty of green food is available. Economic gains can then be made by hopper feeding, and labor is reduced to a minimum.

The Baby Chick

By E. C. FOREMAN

The destiny of the chick is largely determined before the egg is laid, and for this reason too much care cannot be exercised in selection and management of the breeding flock. In fact, the combined problems of breeding, feeding, housing, incubation, and brooding are all involved in profitable chick raising.

Success or failure in the poultry yard is largely dependent upon the number of high quality pullets produced each year. Egg production costs usually increase in direct proportion to the percentage of old stock maintained. Production of eggs during the pullet year exceeds by twenty-five per cent that of any subsequent year.

That seventy per cent of the entire flock should consist of pullets, if economic production is to be attained, is shown by a survey of the most successful poultry farms in Michigan and other states. The pullet flock, moreover, should be early-hatched, well matured, and capable of heavy fall and winter production. A surplus of early hatched chicks permits rigid culling before the pullets are placed in winter quarters.

Successful handling of baby chick problems is fundamental and vital, the results forecasting either success or failure in the poultry business. Many factors must be considered in this connection, and the more important of them are reviewed in the following pages.

BREEDING STOCK

The numerous advantages derived from maintaining only pure bred stock outweigh all considerations which could favor mixed breeding or mongrel

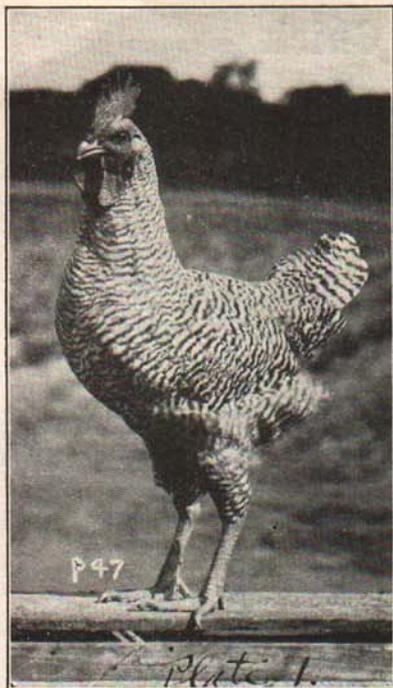
stock. Increased interest and pride taken in pure bred stock usually give rise to better care and resultant increased profit. From the standpoint of economy of production, both of eggs and of flesh, the pure bred stock has repeatedly demonstrated superiority. The relatively low cost of pure bred day-old chicks should be an added incentive for improvement of the farm poultry flock.

Strong, vigorous, well matured parent stock is necessary to the production of healthy, robust chicks. Every member of the breeding pen should be pure bred and selected on the basis of constitutional vigor and heavy egg production.

Inbreeding or breeding from low vitality stock should be carefully avoided. Immature pullets that are laying small eggs do not make very desirable breeders, although well developed pullets, laying normal two ounce eggs generally give highly satisfactory results both in the percentage of eggs that hatch and in the low



High Producer and Vigorous Breeder
College Queen, Record 302 Eggs



Early Maturing and Vigorous Breeder

pelvic arch. A deep, angular body is also desired in an egg type male. Slow feathering males, with abnormal or twisted wing feathers should be discarded. The progeny of such males are usually slow in developing and difficult to raise, in addition to being inferior producers.

The females used in the breeding pen should likewise be well matured and should be selected on the basis of winter laying ability. An age limit of two hundred days from the time of hatching until the first egg is produced should be demanded of all pullets included in the breeding pen. The better laying strains, including the heavy breeds, will have a large number of pullets laying when they are 165 days old.

Yearling hens are generally considered the most desirable breeders, although well matured pullets mated to strong, well developed males will produce strong, vigorous chicks.

mortality of their progeny. Forcing for production is usually detrimental to the hatching qualities. This is especially true among the heavier breeds, and, to a limited extent, among the lighter egg breeds. A more rugged type of fowl, capable of withstanding forcing methods, including both artificial illumination and highly concentrated feeds, should be bred.

The desirable type of breeding male is one that has 200 egg breeding, matures early, feathers quickly over the entire body (especially the back region), crows early, and, when mature, has a large, solid, compact body. The head should show a well developed comb; bright, prominent, expressive eyes; moderately narrow skull, and full face of medium length.

Ordinarily the male bird that shows strong masculine tendencies while young will prove a valuable breeder of early laying stock. In body conformation the male should possess a broad, flat back, as indicated by the width across the hips, which should carry back uniformly to the



Slow maturing—undesirable breeder

FEEDING THE BREEDERS

The importance and influence of proper feeding is seldom recognized or appreciated in the production of good, hatchable eggs.



A World Record M. A. C. Pullet. Hatched Feb. 1; laid first egg May 12. Result of breeding for early maturity

The breeding stock should be sound constitutionally, and, moreover, they should be properly fed to maintain the best possible physical condition. Over fatness, due either to faulty feeding or to the natural disposition of the hen, usually results in a high percentage of deaths in the shell. The feeding practice should be so designed that the hens are continually busy. Deep litter feeding of scratch feed is important in maintaining healthy, vigorous breeding stock.

Heavy feeding of wet mashes during cold winter weather usually suppresses all inclinations to exercise and may even be followed by outbreaks of colds if large numbers of birds are confined in single units. The huddling that usually follows heavy, wet mash feeding, during cold weather, is almost a sure indication of off-condition, which registers a corresponding slump in production.

Forcing methods also exact their toll, usually by lowering fertility and hatchability. This is to some extent an individual characteristic, as some hens are naturally more rugged than others, and the physical strain of production affects individuals differently. The hen that is sufficiently rugged to yield heavily during

the winter months, with or without the aid of artificial illumination, and shows no inclination towards moulting, in addition to producing eggs normal in size, shape, and shell texture, is the most desirable type of breeder.

The feeding practice will have to be modified and to some extent regulated according to the age and general flock conditions. Protein rich feeds, especially those of animal origin, with the exception of milk by-products, have a slightly detrimental effect on the hatching qualities of the egg. For this reason, the breeding stock should be fed liberally on skimmilk, buttermilk, or some of the other milk by-products. This will permit of reducing the meat scrap content of the dry mash from 20 per cent to 10 per cent, without lessening production, and at the same time improving the general physical condition of the hen to such an extent that the eggs produced hatch approximately 10 per cent better. Green feed is an extremely important factor in relation to hatchability. The vitamins that are so essential to both health and growth are found in quantity in the more common green feeds, such as sprouted oats, cabbage, etc. In addition to containing these physiologically indispensable substances, green feeds are extremely palatable, stimulating the hen's appetite and thereby increasing food consumption, with a corresponding increase in production of good, hatchable eggs.

A good feeding practice is one that will keep the hens in good flesh, thereby indicating that the physical strain of production is in no way interfering with quality of eggs produced, and that will at the same time avoid all tendency towards sluggishness or fat production.

The following ration is suggested for breeding stock:

Scratch Feed: 3 parts cracked corn.
2 parts wheat.
1 part heavy oats.

Dry Mash: 30% Cornmeal.
20% Bran.
20% Middlings.
20% Ground Oats.
10% Meat Scraps.

Skimmilk or buttermilk.

Green Food—Choice of sprouted oats, cabbage, etc.

Oyster Shell—Grit—Granulated Bone.

HOUSING THE BREEDERS

Damp and unsanitary housing conditions are ruinous to production, fertility, and health.

An abundant supply of fresh air, combined with dryness and comfort, is fundamentally important in the production of husky, vigorous chicks.

Overcrowding, especially of pullets, usually causes rapid dampening of the litter, with the usual disastrous results. A system of ventilation that will maintain pure air conditions should be installed in all breeding pens. Deep, dry litter induces exercise and therefore promotes health. Four square feet of floor space is a safe allowance for units larger than one hundred, and six square feet per bird in small, single matings.

INCUBATION

The recommendations given with each incubator should be carefully followed. Eggs which are porous, chalky, or of uneven shell texture should be discarded. Uniformity of color, shape, and size of eggs can be greatly improved by selection previous to incubation, but the eggs so selected should in every case come from high producing stock.

Breeding stock should be watched and treated regularly for lice; otherwise high infertility may result. The Sodium Floride treatment has proved very effective.

FEEDING THE BABY CHICKS

Much of the success of our laying pens depends upon the way in which the chicks have been reared and grown. Good, healthy, robust chicks mean strong, vigorous layers capable of a large and profitable winter production.

While there is possibly no one best method of feeding for most rapid growth and for low mortality, a number of conditions are imperative for optimum results.

The chicks should receive no set-backs from the time they are hatched until they are placed in the laying pens. These can most easily be avoided by

practicing limited or retarded early feeding. The appetite of the chick must be closely watched and the amount of food fed regulated so that the chicks will always be hungry and keen for the next meal.

Nature has provided the chick with a "bread-basket" containing sufficient food to last three or four days. Before the chick emerges from the shell, the remainder of the yolk which has been used for nourishing the growing embryo is absorbed into the intestine. For this reason, limited early feeding should be practiced until the yolk is completely assimilated by the chick; otherwise digestive disorders are likely to occur.

First Day—After incubation the chicks should be left in the incubator to "harden off." During warm weather the incubator door may be opened slightly to provide a good supply of fresh air and to reduce the temperature within the machine.

Second Day—Remove chicks to the brooding quarters which have previously been heated. Clean white sand makes an ideal floor covering for the first two weeks. The chicks will pick at and consume enough of these gritty soil particles, which are essential in getting the digestive tract in good working order ready for the first feed. Sour skimmilk, or buttermilk should be provided in shallow dishes. The acid of the milk has a beneficial effect on the digestive system of the chick and will help control losses due to Bacillary White Diarrhea. The food value of the skimmilk also stimulates the chick, causing rapid growth and developing strong resistant powers. Sour skim, milk should not be fed in galvanized dishes, because lead impurities, found in this metal, may be released upon the addition of sour skimmilk. The lactic acid is likely to cause this chemical reaction, which can generally be noted by the changing color of the galvanized drinking fountain. Glass, earthenware or wood receptacles are ideal containers for sour skimmilk.

Third Day—The initial food given should be easily seen and nutritious. The growing embryo was developed on raw egg; so by using the infertile eggs that were taken out at the first test and carefully preserved in a cool place one has an ideal starter.

For each hundred chicks, mix two handfuls of clean bran; two handfuls of rolled oats (breakfast food); and one raw egg. This proportion should give the proper consistency, and it makes a very palatable and nutritious chick feed. Feed five times, with feedings two and one-half hours apart. Keep skimmilk available throughout the growing season if possible.

Fourth Day—Feed commercial chick feed twice. Feed egg mixture three times at regular intervals throughout.

Fifth to Fourteenth Day—Two feeds of commercial chick feed; three feeds of egg mixture; one feed of green food, sprouted oats preferred. Place bran in flat hopper available at all times. Commercial buttermilk mashes can be substituted after the tenth day and fed continuously to the broiler age.

Fourteenth Day to Ten Weeks—Quickest gains can be secured by moist mash, feeding the following ingredients: bran, middlings, ground oats, and corn meal, in equal parts. This should be moistened with skimmilk. If skimmilk is not available, ten per cent of meat scrap or high grade tankage should be used in the mash to supply the animal protein. Coarser grains such as cracked corn and wheat can be substituted for the chick feed just as quickly as the chicks can handle it. If labor is scarce, the grain can be hopper fed after the chicks are six weeks old. Free range, with plenty of green food and shade, produces the most economical growth.

Ten Weeks to Maturity—Segregate broilers and hopper feed both the scratch feed and dry mash.

Scratch Feed: 50% Wheat.
50% Cracked Corn.

Dry Mash: 35% Bran.
20% Cornmeal.
20% Middlings.
20% Ground Oats.
10% Meat Scrap.
5% Buttermilk (powdered).

Grit and skimmilk should be available.



M. A. C. Colony Brooder House, 10 x 10 feet. Capacity 300 to 400 chicks.