



GROW HEALTHY CHICKS

The greatest limiting factor in profitable poultry production is disease. Because of this fact, poultrymen should be vitally interested in the health of their flocks. The old saying that prevention is better than cure is particularly applicable to poultry, and, since prevention of disease depends to a large extent on the health of the growing flock, it is necessary to understand how to secure and how to grow healthy chicks.

Importance of Right Start

It is impossible to maintain a healthy flock unless one starts with disease-free chicks, and maintains this desirable condition. Consequently, it is important to give special consideration to each season's chicks, whether they are produced at home from the existing flock or are purchased from other sources. There are relatively few diseases which day-old chicks may carry directly from the incubator; consequently, chicks of this age are highly preferable for stocking or restocking purposes. Certain diseases, however, are transmitted by chicks of even this tender age and it is to the poultryman's advantage to know what they are and how they may be avoided.

Prevention of Common Chick Diseases

Pullorum Disease

Pullorum disease is the only contagion regularly transmitted through the egg, and for that reason it requires special consideration. This infection localizes in the egg cluster of the hen, and is carried on the yolk of the egg directly to the chick hatched from the infected egg. The infection is highly contagious for young chicks, and under suitable conditions the disease spreads rapidly from the occasional chick hatched with the infection to the other chicks in the same brooder. The disease is variable and deceptive and is difficult for the poultryman to understand. Unfortunately, pullorum disease cannot be cleaned up by destroying the chicks that die; certain of those that recover will harbor the infection throughout life. Some of these, in turn, will again transmit the infection through their eggs, thus maintaining pullorum disease from one generation to the next. In the adult fowl the course of the disease is chronic, with little if any visible evidence of its presence, but may, in rare instances, cause an acute form of the disease in older birds.

Fortunately, there is a means of diagnosing pullorum disease in the carrier-infected fowls, and if advantage is taken of this, the affected fowls can be detected and removed from the flock before the eggs are used for hatching. Con-

siderable concerted effort has been made in recent years to reduce pullorum disease, and results have been satisfactory. Unfortunately, all affected fowls do not react to the diagnostic test at one time; consequently, it is necessary to repeat the test in order to remove all of the infected fowls from the flock. It is highly desirable for the infection to be completely eradicated because a remaining trace of infection may, under suitable conditions, set up the disease in the chicks, with all of its serious consequences. Chicks, therefore, should be obtained from a "pullorum-free" source. Distinction must be made here between "pullorum-free" chicks and "blood-tested" chicks. In the latter class, the fowls have been tested and the reactors have been removed, but the process has not gone far enough to remove *all* the diseased fowls from the flock. Chicks from flocks of this class are commonly referred to as "blood-tested." Although pullorum-free chicks are available, the supply is limited and it is not always possible to obtain them; consequently, so-called blood-tested chicks must sometimes be accepted. Only chicks from pullorum-free flocks are assuredly free of this disease, while chicks from blood-tested flocks may be, and sometimes are, diseased. Furthermore, this testing for pullorum disease has nothing to do with freedom from any other disease, and the mistaken idea that pullorum-controlled (blood-tested) chicks will remain free of all diseases should be corrected. Complete information on the source of pullorum-free chicks in your province may be secured from the Provincial Department of Agriculture.

Another infection known as paratyphoid is somewhat similar to pullorum disease though the infection is not transmitted through the egg, and consequently is not of as frequent occurrence. A very careful laboratory diagnosis is the only means of distinguishing between these two diseases.

Infectious Bronchitis

In recent years infectious bronchitis has made its appearance among baby chicks to rather an alarming degree. The virus of this disease is highly contagious and spreads rapidly through the brood of chicks, and unfortunately is equally infectious for adult fowls. When chicks affected with this disease are brought on to the farm, the infection frequently spreads to the adult fowls on the premises, causing disastrous results in egg production, though the mortality in older fowls rarely runs as high as it does in baby chicks. One attack of this disease leaves the fowls immune to further infection with its virus, but probably leaves "carrier" infected fowls, and is the likely way by which the disease is maintained between generations. As a consequence of this, once the disease has been established on a poultry plant, one may expect its recurrence among the chicks in succeeding years unless control methods as outlined below are carefully followed.

Control of Chick Diseases

All too frequently home-hatched or purchased chicks become infected through brooder age or later by some one or other disease which is carried by the adult fowls on the premises. This includes such diseases as coccidiosis, parasitic worms, infectious bronchitis, epidemic tremors, and pullorum disease—the latter particularly where chicks from different sources are mixed. It should be remembered that these diseases do not spring up or develop spontaneously in the chicks but are foreign to them and must be acquired from some local source of infection. The usual source is affected adult fowls on the premises; consequently when endeavouring to prevent the occurrence of contagious diseases, adult fowls must be viewed with suspicion especially if illness has occurred in them at any stage of their development or at any time of their life. It is not necessary that chicks and affected adult fowl should come in contact with each other for the chicks to become infected. This may take place indirectly through infection carried by human beings. Persons trap-nesting or otherwise handling fowls may readily carry the infection of certain diseases on the hands and clothing and may transmit the disease to chicks which subsequently are cared for by them. In a similar manner, filth-borne diseases may be transmitted on the shoes of such

an attendant. Visible cleanliness alone does not constitute good sanitation. To be effective, sanitation must include the prevention of infections through contact between adult fowls and the chicks. A plan scientifically sound and economically practicable is as follows.

A clean brooder house is essential. If the building has been previously used to house poultry, it requires a thorough cleaning including a washing of the walls and floor, preferably with hot water and lye. Water containing lye is a good cleanser, and will destroy coccidia, and worm eggs, which cannot be destroyed readily with the usual disinfectants. During the brooding period and subsequently, the chicks require complete separation from adult or older fowls directly or indirectly, and must be kept off ground which may have been contaminated by infected fowls. In poultry plants where several attendants care for the various fowls, the work should be divided so that the chicks are attended by one person and the care of the older fowls is left to another. The activities of each should be restricted to his respective duties.

If there is any suspicion of disease in the adult fowls as indicated by excessive mortality and unprofitableness, the entire flock should be disposed of and removed from the premises as soon as sufficient eggs are collected for the hatching of the required number of chicks. This plan provides for replacing the flock by hatching from it and at the same time producing disease-free chicks without the loss of existing blood lines, providing the parent flock is free from pullorum disease which is the only disease known at present which is transmitted through the egg.

A still safer plan is to dispose of all fowls, clean up the building, and then obtain chicks from an assured disease-free source. This replacement of the flock need not be repeated yearly but only if the flock should again become infected.

While the major losses in chicks are due to various contagions, there are also many other diseases which are not infectious that cause considerable losses. These result from the breaking down of some vital body organ and are known as organic diseases. In chicks they are most frequently due to dietary defects.

Common Nutritional Diseases

Give Needed Care in Feeding

Baby chicks have a high body temperature, and with their rapid growth and great activity they require special feed. Dietary deficiency diseases are of common occurrence, particularly those due to a lack of vitamins, minerals and proteins, or to improper balance between these food substances. Early hatched chicks require special rations; otherwise, deficiency diseases follow. Considerable progress has been made in recent years in the knowledge of the chick's needs, and a much better balanced ration can be made now than formerly. While good chick rations are more expensive than poor ones, it pays in the long run to use only rations which will grow sturdy, healthy chicks. Manufacturers of poultry feeds compound rations to meet varying conditions, and the poultryman should purchase or prepare mashers to meet the needs of the particular conditions under which the chicks are to be fed.

Among the more important diseases arising from lack of proper rations are the following:—

Crazy Chicks

This is a disease of the nervous system, and the ailing chick shows freakish movements, staggers, falls down and dies. The largest and best-grown chicks are the ones most commonly affected. It is not known just what deficiency causes the disease, but the factor that prevents it is found in a large number of vegetable oils. Soybean meal evidently carries a considerable amount, and should be added to the ration at all times, with the possible exception of the period when chicks have natural green range and weather conditions which permit its full use.

Curled Toe Paralysis

The toes are turned in and the feet usually rotated with sufficient crippling effect to prevent walking. Death follows unless treatment is given at an early stage of the crippling. Milk powders, if used in sufficient quantities, act as a preventive or a remedy, supplying the necessary Vitamin G or B₂.

Visceral Gout

Death usually results from this condition without previously marked visible symptoms. After death, the heart, liver and other organs are covered with a white deposit as if they were dusted with flour. This may be due in part to a Vitamin A deficiency which may be avoided by the feeding of fresh green alfalfa and yellow carrots.

Avian Rickets

This disease has long been known to be due to a Vitamin D deficiency and an improper balance of calcium and phosphorus in the diet. Crippling of the legs is the chief symptom, and its prevention consists in using a ration known to contain the correct proportions of the preventive factors.

Slipped Tendon

This is a crippling believed due to a lack of manganese in the diet. Required only in minute quantities, it must be present for normal health. Many chicks develop as monstrosities, and die in the shell, while others are seriously affected, hatch, and later succumb. These chick losses are preventable by supplying the breeding flock with the needed amount of manganese, and it may also be used in the chick diet to prevent subsequent crippling.

Housing Requirements for Health

Health cannot be maintained when the housing conditions are unhygienic. Light, ventilation, and heat in keeping with the age of the chicks are essential to good health and disease prevention. The dangers of under-heating are appreciated, but unfortunately the possible harmful effects of over-heating are sometimes not understood, especially if in addition to over-heating there is also inadequate ventilation. There should be sufficient change of air to avoid stuffiness in the room, remembering that chicks are more sensitive than humans. Large numbers of chicks brooded together require greater care than fewer chicks, because of the possibility of producing conditions favourable to the rapid spread of disease. Baby chicks are relatively delicate and their natural requirements in all these respects must be met if they are to remain healthy; at the same time, they should not be coddled beyond their requirements as this would tend to destroy their natural hardiness.

Considerable losses early in the season result from insufficient ventilation in the brooder house. It appears principally on the better farms where the well-constructed brooder house permits admission of but little air when the windows are tightly closed. Under these circumstances the coal-burning hover uses up oxygen and gives off poisonous gases from combustion. This unhygienic condition causes illness and death. The chicks develop an unthrifty appearance with lassitude, which is more noticeable in the morning after the house has been closed for some time. Brooder houses should be fitted with ventilating devices permitting the necessary oxygen supply, especially early in the season when fear of sudden changes in the weather causes the operators to shut the house too tightly during the night-time. Adequate attention to this essential would save the lives of many chicks and improve the health of vast numbers which survive but with impaired health.

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