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EC1413 The Essentials of Poultry Hygiene

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THE ESSENTIALS OF POULTRY HYGIENE

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In all branches of animal husbandry the size of the disease problem and the accompanying difficulties are proportionate to the extent of the development of the industry. In Nebraska, with its numerous and valuable farm flocks, the problem of disease also has assumed proportions that no poultry raiser can afford to ignore.

INTRODUCTION

Disease either resulting in death or in recovery always means a loss, and in connection with farm live stock, including poultry, is exclusively an economic question. It is a factor most seriously affecting the items of profit and loss. This disagreeable factor is usually met by two modes of procedure, one of which aims to cure disease and the other to prevent it. When pertaining to those kinds of animals of which each individual represents a considerable amount of invested capital, both methods mentioned have a definite value, even if the preventive one is, practically as well as economically, the sounder of the two. In other words, disease prevention is not only the most efficient but also the cheapest solution of the problem.

This is particularly true in the case of poultry diseases. Curative treatment of sick fowls is not only of an extremely dubious value, commonly resulting in failure, but the individual animal as a rule has a low value as compared with cost in time and material occasioned by special attention. The cost of curing, even if this should be successful, often exceeds by far the value of the fowl saved.

In general the doctoring of poultry does not pay, while on the other hand, efforts along the line of disease prevention as well as intelligent flock management can be counted on as extremely helpful in the solution of the disease question.

A FLOCK PROBLEM

The disease problem as it affects poultry thus does not pertain to individuals so much, but is entirely a question pertaining to the flock as a whole. Poultry hygiene and sanitation above all aims to save flocks from the inroads of disease. In given cases it even prescribes the destruction of individuals in order that the whole may be protected.

FOUR DIVISIONS

For the sake of convenience the field of poultry hygiene may be divided in four principal lines of endeavor. They pertain to, 1st, the selection of sound breeding stock; 2nd, the establishment of suitable and wholesome surroundings; 3rd, correct methods of feeding, and 4th, the control of communicable diseases.

In the foundation and the propagation of the flock the most vigorous breeding stock is highly essential. While it may be true that a rugged constitution is not always respected by certain forms of infection, it is also true that vigorous physical properties are never less than a valuable asset under all circumstances. Both from the viewpoint of the sanitarian as well as that of the poultry producer it is important that the less vigorous members of the flock be the first ones to be culled out for market or table. The same pertains to the older birds and the flock which is not permitted to include birds over two years old is stronger because of it in a sanitary as well as an economic sense.

Of the animals set aside for breeding purposes, both male and female, should be well developed, mature, vigorous, active and showing all evidence of good health. They should be attentive of what is going on about them. The rooster should show himself anxious to answer any challenge and if he is not a paragon of gallantry a successor should be appointed. The pullet in good health is garrulous and industrious in foraging and scratching as well as in the enjoyment of the dust bath. Listless fowls with dull staring feathers and drooping wings are objectionable as breeders and their offspring will probably be faulty and predisposed to disease.

Particularly important is the selection of hatching eggs derived from other flocks. The general state of health of the latter should be known to the purchaser, remembering that one of the most disastrous diseases of incubator chicks, bacillary white diarrhea, is transmitted through the eggs of infection carrying chickens.

The surroundings influencing the health of poultry flocks include such factors as housing, ventilation, yards, etc. In a sanitary consideration of poultry houses the first point of interest is its location. The sites for poultry houses should be selected with a view to dryness and shelter. A sandy, gravelly soil is most commonly to be preferred as a building site and the latter should always have a free, natural drainage. Whenever

this is not obtainable some artificial means of drainage should be provided. Low places must be avoided as being too cold and too damp, conditions seriously adverse to poultry health.

Shelter may be obtained from surrounding trees or by having the houses located on the leeward side of a hill or larger buildings. The shelter provided should, however, not be sufficient to exclude direct sunlight altogether. A southern exposure is always to be preferred.

POULTRY HOUSES

In the construction of the poultry house many kinds of material can be used for foundation and floors. The financial means of the builder and the location of his farm yard will probably exercise a considerable influence in regard to the selection of building material. From a sanitary viewpoint concrete construction offers certain decided advantages. It is smooth, dry and durable, at the same time impervious to moisture and vermin and rat proof. Its good heat conducting qualities, however, detract from its value, as this is apt to make the floor quite cold in winter. Placing the concrete on a layer of hollow tile will in a measure somewhat mitigate this undesirable quality. Whatever material be used, the floor should be laid on an incline in order to provide drainage for the water which may be used in cleansing.

The walls of the poultry houses should be constructed so as to promote dryness and warmth within and yet in such a manner that such vermin as rats, mice, lice or mites will not readily find lodging places. A wall constructed of studding, sheeted with matched lumber on both sides, each side resting on a layer of tar paper. The space between each studding can then be filled with porous cinders. This will render the space less fit for the use of rats and other predatory animals. In this connection a further advantage is secured by mixing with cinders sharp pieces of glass, such as broken bottles and the like.

In order to prevent insect and other pests from concealing themselves between the seams, it is well to paint the joints with a thick coal tar before the boards are joined together. This at the same time is apt to promote the tightness of the walls.

Whenever the cost of the house is not to be seriously considered, it may be provided with a tight ceiling. This furnishes a dead air space below the roof which naturally promotes warmth in winter and coolness in summer. In structures in which cheapness of construction must be considered, a loose

ceiling covered with straw will in a measure lead to the same result. Such an arrangement is not conducive of cleanliness and furnishes an excellent hiding place for vermin.

A poultry house must be adequately provided with windows in order to secure a good lighting of the interior. This promotes health and cleanliness. An excess of windows, on the other hand, is apt to render the space too cold in winter. One square foot of window area for every twelve square foot of floor space may be regarded as sufficient under ordinary circumstances.

In the construction of poultry houses, ventilation requirements must not be overlooked. In the smaller structures, door and window ventilation will usually be sufficient and especially so if instead of the common windows, the sash is provided with muslin instead of glass. An even better arrangement is to construct frames over which the muslin is stretched and of such dimensions that they can be inserted under the raised windows.

In the larger establishments special provision must be made. This commonly consists in the construction of special inlets and outlets. The former are so arranged that a suitable opening is made in the outer sheeting of the wall between two studdings and close to the foundation plate. A similar opening is made in the inner sheeting, but close to the ceiling. The space within the wall thus serves the purpose of an intake flue. In the ventilation of large spaces, direct draft is prevented by establishing several such intakes in the place of one large one. The arrangement by which the air is forced to pass upward between the studdings is likewise designed to do away with draft. If in spite of this the direct air currents prove to be too strong, this disadvantage can be further overcome by placing a horizontal muslin screen immediately below the inner opening.

The outlet flue is usually centrally placed within the space to be ventilated and this must be so arranged that the outgoing air enters it near the floor. The flue is made to project above the roof so that the outside opening is well exposed to the wind.

It has been computed by King that outlets as well as intakes should provide for an area of four square inches, cross section, for every bird or at the rate of two hundred square inches for every fifty fowls. All inlets should be provided with sliding valves, so that the inflow of air can be regulated in accordance with the requirements imposed by varying weather conditions.

All interior fixtures of the poultry house should be readily

removable and constructed in a manner that they can be easily taken apart. This feature is an important aid in the control of parasites and in the practice of disinfection when the latter should be required.

INTERIOR FIXTURES

The roosts should be placed in the warmest part of the house. The perches should be on the same level, if at all possible, and each fowl should have no less than from six to eight inches of perch room. A common two by four with the narrow edge uppermost and properly rounded and smoothed is a suitable perch. Perches should never be of such a diameter that the birds are compelled to clutch them in order to maintain their position. This interferes with their rest and is not an infrequent cause of defects of the feet.

CLEANLINESS

In the management of poultry houses a high degree of cleanliness should be the first care. Filth and disease always go hand in hand. In the case of large flocks a daily cleaning is advisable, but when only a restricted number of fowls inhabit the house a good cleaning once or twice a week may be deemed adequate.

YARDS AND PENS

If it is possible to select the poultry yard, preference should be given to a light, sandy or gravelly soil. This is conducive to warmth and dryness and the meeting of those two requirements is an important factor in the success of poultry husbandry. The yards should be placed in a more or less protected location; they should be large enough to prevent crowding and a certain amount of shade should be available.

There is an abundant amount of evidence which shows that the ground on which poultry is kept plays a more important part in the promotion of certain diseases than is commonly suspected. A flock of poultry continually kept on the same piece of ground gradually leads to the condition that the fowls are constantly in intimate contact with the body wastes, which means a daily contamination of food and water.

Internal parasites, tuberculosis, cholera, etc., are very common diseases among Nebraska poultry and in the dissemination of these scourges the infected soil is always a very potent factor. The numerous specimens of diseased poultry which the author has seen during the last four years show that intestinal worms,

tapeworms as well as round worms, are more common among our farm flocks than is good for the industry. It is practically impossible to free poultry from those parasites by the use of medicines and we are here, as well as in the case of all our important poultry diseases, dependent on purely preventive measures. Among those, the periodic rotation of poultry yards is the most effective one. It is usually possible to have available three poultry yards, with one in use by poultry and the other two put to other uses. By this method it becomes possible each year to take the flock, especially the young chicks, to ground where no poultry were kept for two years and thus avoid the sources of disease which may be present in the continually used yards. We fear that, on some farms at least, the practice of keeping poultry in the common farm yard may have to be abandoned in time in order to escape the ever increasing worm infestations.

All poultry yards, including the common farm yard, must be well drained, must not have pools and puddles in which stagnant water can accumulate and must be kept as clean as circumstances permit.

FEED

The feed of poultry must contain the required amount of nutrient substances. Spoiled, musty or mouldy grain as well as partly decayed or tainted meat scraps and bone must be avoided. Overfeeding should be guarded against. The feed should be provided in hoppers and not be thrown on the always more or less contaminated ground, unless we are dealing with fowls which do not exercise without hunting for food. The feeding of incubator chicks must be especially safeguarded against faulty ingredients and wrong methods of application. The department of poultry husbandry of the College of Agriculture has some good advice to offer on the subject in the shape of a brief pamphlet which every poultry breeder should read.

WATER

The question of pure drinking water is a most important one in the poultry yard. Many diseases of poultry are water born because it cannot be otherwise after contamination by the droppings of the birds. All sources of water supply which are open to such contamination should be removed or discarded. Water fountains in which the contents are protected against outside pollution are to be most highly recommended. Such

fountains should be placed sufficiently high above the ground to avoid the entrance of fecal matters. The water must be frequently changed and the containers scalded by means of boiling water. Cleanliness must prevail in all the details of feeding and watering. The addition of chemicals and medicines to food and water is always superfluous and quite often harmful.

DUST BATH

Special attention must be given to the factors which tend to keep our birds free from external parasites. Among those the so-called dust wallow occupies a very prominent place. Not only does this enable the fowls to shake off at least a part of their guests, but it also tends to remove the dead scales, scurf and loose feathers from the skin. It promotes individual cleanliness. The dust of the bath must be very dry, fine and light. Fine sand to which a certain amount of cheap snuff has been added is most excellent for the purpose. The best place for the dust wallow is in the free, open air, but when weather conditions force us to keep the poultry within doors a box or a screened off portion of the poultry house must answer the purpose.

LICE AND MITES

To combat lice and mites in poultry houses the use of kerosene emulsion is the cheapest and at the same time the most efficient method. It is prepared as follows:

Dissolve about one-quarter of a pound of common laundry soap in one gallon of soft water by boiling. When the soap has all dissolved and the solution is still hot, pour into it two gallons of kerosene and stir mixture vigorously.

Of the resulting creamy emulsion one part is added to eight or ten parts of warm soft water. This can be used as a spray or applied by means of a brush.

The fowls themselves may be freed by dusting in between the feathers a fine powder of commercial sodium fluoride. Another powder recommended for the same purpose is prepared thus: Take one part of cresol and three parts of gasoline and add to it enough plaster of paris to take up all the moisture. As a rule one gallon of plaster of paris will be required for every quart of the liquid mixture. The resulting brown powder is dusted under the feathers of the fowls affected.

DISEASE PREVENTION

The methods of prevention of the communicable diseases of poultry vary somewhat with the nature of the infection confronting a given flock. Some general principles of disease prevention may be given consideration without unduly enlarging the scope of this circular.

To begin with, the poultry owner should always look upon a sick fowl with considerable suspicion. When one or more members of the flock are moping and drooping around, it is always well to consider the presence of specific infection as imminently possible. Such sick birds should be immediately segregated away from the flock if not destroyed and burned outright. If birds die in numbers from unknown causes the carcasses may be sent to the department of animal pathology and hygiene of the College of Agriculture, whenever the nature of the disease cannot be ascertained by local veterinary practitioners or whenever such are not available to give prompt advice.

Dead birds should never be carelessly disposed of. They should always be burned and the same measure should be applied to the entrails and offal of poultry killed for the table use.

Newly purchased fowls as well as those returning from fairs and shows must always be kept in segregation until observation continued for two or three weeks indicate that they are in perfect health.

A well organized poultry establishment should always be prepared to move the healthy part of an infected flock to new and noninfected quarters.

INFECTION MANAGEMENT

In the face of the more virulent poultry diseases, among which the one known as fowl-cholera is the more prevalent type, the following measures can be unqualifiedly recommended:

Remove all the members of the flock yet in apparent good health to clean, unexposed ground and quarters and there divide them in as many small, separate groups as possible.

Kill all sick birds without spilling any blood on the ground and destroy all carcasses by burning. Disinfect all eating and drinking utensils and poultry houses in a most thorough manner. Leave the infected yards or quarters unpopulated by poultry until they have been exposed for at least two months to the purifying influences of warm weather. During this period all pools and puddles should be drained and filled in.