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# University of Arizona

COLLEGE OF AGRICULTURE

AGRICULTURAL EXTENSION SERVICE

## METHODS FOR CONTROL OF FOWL POX

BY

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# METHODS FOR CONTROL OF FOWL POX

BY

WILLIAM J. PISTOR\*

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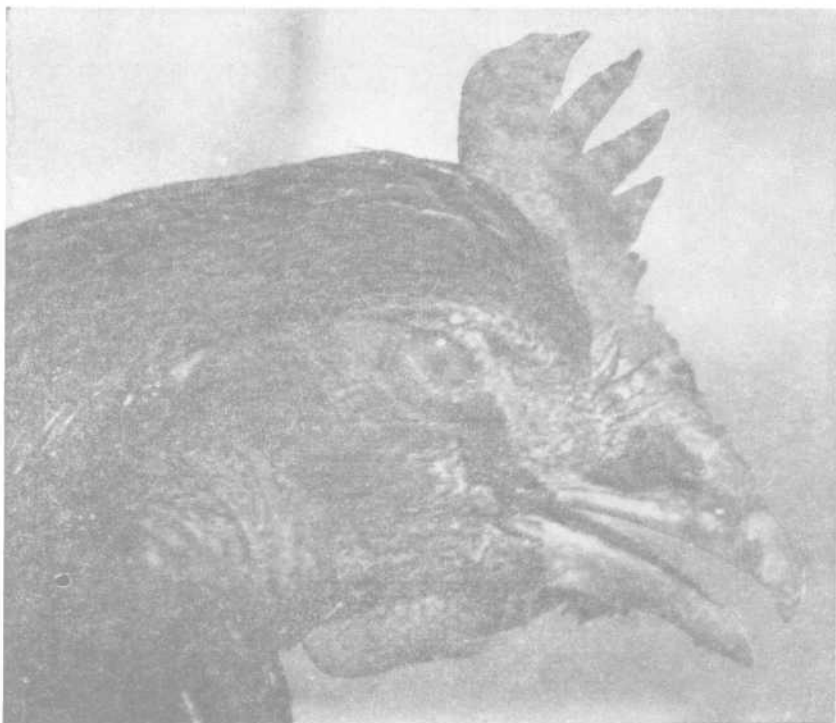
Fowl pox, which includes chicken pox, canker, contagious epithelioma, avian diphtheria, and sore head, is a highly infectious disease of poultry caused by a filterable virus. Two types of this disease usually occur in outbreaks. One type is manifested by wartlike growths on the wattles, comb, or skin of the face, and the other by the formation of masses of cheesy material in the mouth and the eyes. Although these two types of lesions are entirely different in character, they are usually due to the same cause—namely, the fowl-pox virus.

Outbreaks of fowl pox may occur at any season of the year, although the most prevalent time is during the fall and winter months. Several different modes of transmission of this disease are recognized. Chickens infected with the disease coming in contact with susceptible birds is the most important method of spread. Sparrows and other birds may carry the infection on their feet and bodies or by being infected themselves. Flies, mosquitoes, and other insects may carry the infection on their bodies from infected flocks to others. Salesmen and other visitors who have been on infected farms may carry the infection on their shoes or clothes. A very important way of introducing the infection on a farm or into a district is by the addition of pullets or older chickens which come from an infected flock or from flocks that may have the disease in the incubative stage. They will break out with pox soon after they are mixed with the flock or may act as carriers and infect susceptible chickens.

Pox outbreaks vary greatly in severity. In some flocks the lesions may be confined to the combs and wattles and only a few may become infected. There is no loss from death or in egg production. In other flocks the lesions may be in the mouth, forming cankers, causing considerable loss from death and a decrease in egg production. Other flocks may have a combination of comb and wattle lesions with the cankers in the mouth and eyes. Losses usually are great in this type. The length of time that the chickens may be infected varies with the intensity of the outbreak. The disease may disappear in a month's time, or it may be present in a flock for many months with only a few birds being affected at any one time.

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A typical case of chicken pox. Note prominent nodules around mouth and on wattles, also nodules in early stages on comb.

Since chicken pox is so widely spread in all poultry sections and causes so much loss of production and mortality in chickens, the question of proper control methods should be carefully studied by the poultryman so as to prevent such losses. There are a number of important steps which should be followed as carefully as possible to insure proper control and also prevent the losses from a large variety of causes following control methods. These control methods consist of vaccination of birds with the live virus of chicken pox or pigeon pox.

Since chicken pox vaccination employs the live virus which causes the natural outbreak, care should be taken in handling the vaccine, and it is also necessary to consider carefully that vaccinated chickens pass through a definite course of chicken pox. The virus is prepared so as to make the attack less severe but if not properly employed may cause heavy losses. Chicken pox vaccination will be discussed in a question and answer form and will be divided into preventive vaccination and control methods in infected flocks.

## PREVENTIVE VACCINATION

Q.—On which farms should preventive vaccination be used?

A.—On all farms that have had outbreaks of chicken pox or on farms situated in districts where pox is prevalent on adjoining or near-by farms. Those farms which buy pullets and hens or introduce cockerels from other farms which have had pox should vaccinate. Those poultry farms free from chicken pox that buy day-old chicks and are situated away from infected farms should not vaccinate.

Q.—At what age should chickens be vaccinated?

A.—Experience has shown that between sixty and ninety days is probably the best age at which to vaccinate. Lately considerable work has been done on day-old-chick vaccination. Results have been varied so that it is not advisable to vaccinate at this age unless it is done by one who has had experience or under the guidance of an experienced person.

Q.—What vaccine should be used?

A.—Properly prepared fowl-pox vaccine from a reliable biological supply company should be used to give proper immunity to the chickens. The use of pigeon-pox vaccine to vaccinate chickens has been advocated because it does not produce as severe a reaction on the chickens as fowl-pox vaccine, but it must be remembered that neither does it give lasting immunity against a natural infection and outbreaks may occur following vaccination. Mixed bacteria are being sold to protect chickens from fowl pox, but this product has no value in preventing fowl pox. It is used in colds and roup with limited results.

Q.—How does vaccination affect chickens?

A.—There is a definite reaction produced in chickens following successful vaccination. After an incubation period of seven days the chickens run a course of fowl pox which lasts from three to four weeks. During this period the chickens may become listless and lose their appetites. Their resistance to other disease is lowered and if not properly cared for they may become infected with colds or other prevailing diseases. Chickens which have been vaccinated can transmit chicken pox to susceptible chickens on the farm. Susceptible birds are birds which have not had chicken pox or which have not been previously vaccinated. Chickens which have been vaccinated should not be mixed with susceptible birds for at least three months after vaccination.

Q.—Which chickens should be vaccinated?

A.—This problem is important and should be carefully considered. Only healthy chickens free from intestinal parasites and chickens which are not suffering from malnutrition because of faulty management or incorrect feeding should be vaccinated. The flock should be carefully culled and examined for disease or parasites and *only the healthy chickens should be vaccinated*. The culls and chickens suffering from other diseases can be segregated and placed in a yard by themselves until they are in proper condition to vaccinate. When worm treatment is given just as a

routine measure it is safe to administer worm remedies at the time of vaccination.

Q.—What method of vaccination should be used?

A.—There are two methods of vaccination which are commonly used and which give good results if properly applied. The feather follicle method consists of applying the vaccine with a small brush to about four or five feather follicles on the leg after the feathers have been plucked. This method is carefully described in most of the pamphlets which accompany fowl-pox vaccine purchased from reliable firms. These methods described on the pamphlets should be carefully followed.

The stick method consists of making two or more pricks through the skin of the leg, breast, or wing web with an instrument having sharp points about  $\frac{1}{8}$  inch long immediately after it has been moistened with vaccine. These instruments usually have a buffer made of string or some absorbent material to hold the vaccine. The newer instruments have a small cup to contain the vaccine. This method is also described in pamphlets accompanying vaccine, and the method described should be followed.

These methods are both very satisfactory and give the same results if carefully applied.

Q.—How should chickens be cared for after vaccination?

A.—The chickens should be examined for "takes" after vaccination. A big percentage of larger flocks and all of the smaller flocks should be examined after five to seven days for takes or lesions. These takes are raised scabbed areas at the point of vaccination and are indications of proper vaccination. At least 90 per cent of the chickens should have takes. If there are only a few slight takes and many birds without any, the vaccination has not been successful and should be done over. The conditions responsible for no takes are poor or old vaccines. Vaccines which have been mixed with the diluent too long lose their strength. The vaccine may not have been applied properly over the follicles or sticks because of haste. Care is necessary in assuring proper vaccination.

The vaccinated chickens should receive special attention for a period of at least four weeks following vaccination. The chickens should be protected from all weather changes and provided with sanitary surroundings. The feeding should be altered to encourage the consumption of feed during this reaction period. A satisfactory method used is to reduce the amount of mash to about one half the usual quantity and in its place give a feed of rolled barley soaked in milk as a morning feed. About 3 pounds of barley to one hundred chickens is sufficient. Usually the amount is regulated by the length of time it takes the chickens to eat it. Enough should be fed so that it is all consumed in about forty-five minutes. In the place of the barley feeding, scalded bran should be given every fourth morning. The quantity is the same. Mash should be restricted to about four hours during the middle of the day, and in the evening grain should be fed. This care of

vaccinated chickens is very important and many times success or failure is dependent on how carefully the chickens are nursed through this period.

Q.—How long are vaccinated chickens immune to pox?

A.—A proper vaccination usually gives immunity to fowl pox for a period of two years. One vaccination is usually sufficient because few birds are kept after their second laying season.

## CONTROL METHODS

Natural outbreaks of fowl pox occur in laying flocks or younger pullets, and measures for control are necessary. In considering control measures it is necessary to study the effect of pox on the flock. This has been discussed in the description of pox. Control measures should therefore consist of a program that will stop the disease although it may cause a sharp decline in production.

Sanitation is the first step in the control of fowl pox. This includes the isolation of all affected chickens, litter, feed hoppers, watering troughs, or other equipment that may be contaminated with the virus. If only a few chickens are infected they should be removed to separate quarters, and the house and yards should immediately be cleaned and disinfected. The healthy flock should be watched daily and any additional sick birds should be taken out. If 25 per cent of the flock is infected it probably is advisable to move the healthy birds to new clean quarters and leave the infected birds in the contaminated quarters. By starting these sanitary measures when the disease first breaks out it may be possible to control the losses from death and in egg production, but outbreaks may continue and last for several months, causing severe losses. Since vaccination with fowl-pox vaccine will immunize chickens to fowl pox within a month after vaccination it is sometimes advisable to use this method with proper sanitation. The same precautions are necessary in adult vaccination that were outlined for pullets or prevention. There are several important additional points to consider that do not necessarily exist in preventive vaccination:

1. The egg production in flocks will be materially reduced for a period of thirty to sixty days. The chickens may go into a molt if vaccinated during heavy production.
2. Vaccination of an infected flock will not stop the spread of the disease immediately. It usually requires from three to six weeks to produce immunity.
3. The use of pox vaccine does not increase the severity of the lesions on the chickens that are already infected or that become infected after vaccination.
4. If one pen becomes infected and vaccination is used as a control, it is necessary to vaccinate all susceptible chickens on the premises.



5. The use of vaccination in controlling outbreaks of pox is to hasten the course of the disease to a period of three to four weeks. Sometimes a natural outbreak will run a short course while other outbreaks will last several months.
6. Vaccination with pigeon-pox vaccine is used and recommended by various agencies because egg production is not affected as much as when fowl-pox vaccine is used. It is doubtful in many instances if pigeon-pox vaccine is effective in checking an outbreak of fowl pox.

The treatment of individual infected chickens consists in the immediate removal of these infected chickens from the flock to clean, well-ventilated quarters. The scabs on the combs and wattles should be removed and the areas painted with tincture of iodine. The cheesy material which collects in the mouth and eyes should be removed and the raw areas should be painted with tincture of iodine. When material collects in the lid, tincture of iodine can be applied to the eye without endangering the eyesight. This cheesy material should be removed by squeezing the lids.

In connection with these individual treatments or control methods in infected flocks, it is always necessary to feed the chickens as suggested in the method of handling chickens after preventive vaccination.