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Vaccination of Poultry

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Issued October 1963

4 pages

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VACCINATION OF POULTRY

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NEED FOR VACCINATION - Under Michigan conditions, it is imperative that ALL chicken breeding and laying flocks be protected against infectious bronchitis, Newcastle disease, fowl pox and epidemic tremor. Failure to protect laying hens against these diseases invites disaster in all poultry enterprises. These diseases cause economic loss from mortality, inefficient growth, reduced egg production and low egg quality. Protection can be accomplished by use of vaccines.

VACCINATION PROGRAM - Chicks, at the time of hatching, carry parental (passive) immunity against infectious bronchitis, epidemic tremor and Newcastle disease; this immunity is acquired from the eggs from which they hatched. Vaccinating chicks during the first week in the brooder house does not stimulate maximum immunity to these diseases. It is necessary to withhold vaccination until the parental immunity has subsided. (See table)

Vaccinations, whenever administered, cause a reaction (stress) in the birds because the vaccine produces a mild form of disease. It is recommended that the several vaccines be administered separately rather than in combination to reduce the reaction observed 5 to 7 days following administration.

FIVE VIRUS DISEASES - These can be controlled by the use of available attenuated virus vaccines: 1) Infectious Bronchitis, 2) Newcastle Disease, 3) Epidemic Tremor, 4) Fowl Pox, and 5) Laryngotracheitis.

NEWCASTLE DISEASE is a highly contagious and destructive viral disease of chickens of all ages. Turkeys are much more resistant but the disease is occasionally diagnosed in turkey breeder flocks. The virus shows a high resistance

to adverse environment and tends to persist in poultry brooding and laying quarters. The symptoms and course of Newcastle disease closely resemble or are identical with those of other respiratory diseases; it often triggers chronic respiratory disease in laying flocks. The disease is a killer and ruins egg quality. Immunity to Newcastle disease by vaccination is not permanent; therefore, subsequent revaccination is necessary.

INFECTIOUS BRONCHITIS is a viral disease of the respiratory tract of chickens. The characteristic symptoms in young chicks are nasal discharge, gasping and coughing. Survivors may be permanently impaired as potential egg producers due to permanent injury to the oviduct. When the disease occurs in a laying flock, egg production declines and some of the eggs will be misshapen, rough and soft shelled.

Vaccination is the only means to keep this disease under control as strict isolation and sound management practices are not adequate to prevent infectious bronchitis.

FOWL POX, another viral disease of poultry, is characterized by the appearance of eruptions or wartlike nodules on the unfeathered parts of fowl and by diphtheritic membranes in the mouth. Chickens of all ages, sexes and breeds, unless previously protected are equally susceptible to fowl pox. The mortality due to fowl pox is variable but egg production suffers during an outbreak and convalescence.

EPIDEMIC TREMOR is a viral disease that kills chicks up to the age of 5 weeks and/or practically stops egg production for 2 to 3 weeks in mature birds. All chicken breeder flocks

(turkeys are very resistant) should be protected against epidemic tremor to assure protection from this insidious disease developing in recently hatched chicks. Chicks immune to epidemic tremor lose their immunity about the time they reach highest egg production as layers. To prevent a 2-3 weeks' loss of eggs, each succeeding laying flock should be vaccinated prior to the beginning of egg production. (See table)

LARYNGOTRACHEITIS, fortunately, does not occur extensively in Michigan. Only rarely will it be found necessary to vaccinate for this disease.

ALL OF THESE DISEASES EXCEPT LARYNGOTRACHEITIS SHOULD BE THE CONCERN OF ALERT MICHIGAN POULTRYMEN.

VACCINES are suspensions of large amounts of attenuated (tamed or less virulent) viruses in a diluent. When purchased, the virus is found in dry form in a vacuum-sealed vial and the diluent in a second vial. The dry virus is added to and thoroughly mixed with the diluent just prior to being used. (The exception is the killed type of Newcastle disease vaccine.)

Strains of viruses differ, much as strains of chickens of a particular breed. Strains selected for making vaccines are usually mild so as not to cause serious infection but to produce immunity.

MASS VACCINATION is the administration of vaccines to an entire flock of birds at one time. It includes such methods as spraying, dusting or adding the vaccine to a measured volume of drinking water. Every bird may not become immunized during the first mass vaccination. Thus a second and frequently additional vaccinations are needed. This situation especially applies to Newcastle disease.

The success of mass vaccinations demands that the manufacturer's recommendations on storage, mixing and administration of the vaccine are closely followed.

Immunity is not permanent in some diseases. As chickens grow and mature or continue in heavy egg production, immunity tends to subside. Therefore, it is imperative to repeat or give booster vaccinations for infectious bronchitis, Newcastle disease and epidemic tremor. This is particularly true when the vaccine is water-administered.

DANGERS - Vaccines, except for the killed type of Newcastle disease vaccine, contain living viruses intended to cause a mild form of the disease, thus developing immunity to field strains of the respective viruses. Actually, the vaccines

do cause a systemic reaction. The reaction will be mild if:

- (1) the birds are healthy at the time of vaccination.
- (2) the chicks' environment is clean and dry
- (3) there are no sudden changes in management practices
- (4) the brooder temperature is maintained (the temperature may be raised 3 to 5 degrees for a few days after vaccination)
- (5) the instructions accompanying the vaccine are followed
- (6) booster vaccinations are from the same manufacturer as the original vaccine

To assure adequate protection from these several diseases, it is important that the birds be in good health when vaccinated.

VACCINATION NO SUBSTITUTE FOR SANITATION

A sanitary environment is free from all agents injurious to health. Good management and sanitation include:

- (1) Clean, dry, not-overpopulated houses
- (2) Adequate amounts of a balanced ration
- (3) An ample, clean water supply
- (4) Rearing young birds well separated from older stock
- (5) Precautions against bringing diseases on the premises by visitors
- (6) Use of uncontaminated feed sacks, feeders, waterers and cleaning equipment

PULLET GROWERS SHOULD KEEP VACCINATION RECORDS - If you raise your own replacement pullet flock or if the pullets are purchased at laying age, a detailed record of the vaccination history should be available.

These records should include:

- (1) Dates of administration
- (2) Manufacturer
- (3) Type of vaccine and method of administration
- (4) Serial number of the vaccine
- (5) Expiration date of the vaccine

A Recommended Vaccination Program

Age of Birds	Vaccine	Method of administration
7 - 10 days	Infectious bronchitis	Drinking water or dust
17 - 21 days	Newcastle disease	Drinking water, dust or spray
8 - 14 weeks	Fowl pox	Individual wing-web
10 - 16 weeks	Epidemic tremor	Drinking water
4 months	Newcastle disease	Drinking water, dust or spray
Booster every 3 months in egg production	Newcastle disease	Drinking water, dust or spray

Vaccine Application Methods

Drinking water - the vaccine is added to a measured volume of water which the birds are required to drink.

Dust - the vaccine is lightly dusted over birds while roosting or hovering - a special powder duster must be used.

Spray - the vaccine is sprayed over the roosting or hovering birds using an aerosol spray or similar equipment.

Wing-web - the vaccine is impregnated into the skin on the underside of the web at the elbow using a grooved double needle instrument.

Cooperative extension work in agriculture and home economics. Michigan State University and the U. S. Department of Agriculture cooperating.
N. F. Halston, Director, Cooperative Extension Service, Michigan State University, East Lansing. Printed and distributed under Acts of Congress,
May 8 and June 30, 1914.

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