צילום יג

UNITED STATES DEPARTMENT OF AGRICULTURE
ANIMAL AND PLANT HEALTH INSPECTION SERVICE
FEDERAL BUILDING
HYATTSVILLE, MARYLAND 20782

December 6, 1977

Rabbi Sholom Y. Gross
Executive Director
International Kashrus Association
P.O. Box 163, Dyker Heights Station
Brooklyn, NY 11228

Dear Rabbi Gross:

This letter is in response to your letter of November 12, 1977, concerning the vaccination of fowl. It is impossible to indicate by letter every route of inoculation used by all producers of poultry and eggs. This letter will try to describe the practices being used by 98 to 99 percent of the producers in the United States.

Vaccination is a means of exposing a specific antigen to the cells of an animal so that the animal will respond naturally by producing antibody against this antigen and thereby protect that animal's health. This process may be done artifically or naturally and is more or less a normal continuous process. The antigens may be nonliving or living. The nonliving antigens may be killed whole organisms, or the antigens may be simply a specific organic compound from an organism which will stimulate immunity or protection from that organism. The live antigen may be a disease-producing organism or more often an organism which has been modified or attenuated by various means to produce protection but not disease. The vaccines that are capable of producing disease are often administered by a different route or at a time when the disease is easily controlled and has little effect on the animal, or when the animal has some natural protection, such as parental immunity or antibody, from its mother.

The routes or methods of administering the antigen or vaccine depend on several factors. First, it has to be effective. Second, depending on the disease, it must be done as practical from a cost standpoint as possible. Many of the vaccines, particularly the attenuated viruses, normally have natural routes of administration. By natural route indicates that the method of administration is the route that the virus or bacteria normally invades or infects the animal. This method usually involves the mucous membranes of the conjunctiva of the eye, respiratory system, or the digestive system.

The injection of vaccine (parenteral inoculation) because of the greater expense is limited in use in commercial poultry production because of the greater cost of handling the individual animals. It is used, however, when the cost/benefit of the vaccination and disease is indicated. Certain diseases, such as fowl pox, demand another route to produce reliable immunity. Intramuscular or subcutaneous (under the skin) injections are used in the case of killed vaccines because this is the most efficacious means of producing immunity with this type of vaccine. This immunity will result in the production of healthy, wholesome animals for the market.

There are times when certain live vaccines (e.g., Marek's disease vaccine) must be administered in the muscle or under the skin early in the life of the chick before the disease-producing, ubiquitous virus enters naturally. The vaccine virus or virus that does not produce disease, incidentally, is present naturally in most turkeys marketed in the world and was derived from turkeys. The virulent virus, or disease-producing virus enters the body by natural means and coexists, at least for a while; however, the immune systems prevent the cancer-forming virus from transforming the particular white blood cells into tumor cells.

With the above as background information, I will try to answer the questions you specifically asked in your letter. All commercial chickens (i.e., egg-type and meat-type chicks) are immunized against Marek's disease at 1 day of age. The vaccine is administered, except for the exceptions noted in my previous letter, under the skin just behind the head. Because of the ubiquitous nature of the Marek's disease virus, it is believed that all chickens and other susceptible avian species are exposed to or naturally vaccinated against this virus early in life, become viremic (virus in blood), and depending on the virus, are able to develop immunity, control the transformed cells, or are afflicted with the disease.

Chicks raised for broiler production, with the exception of the vaccination for Marek's disease at 1 day of age, and at times for fowl pox, are exposed to various vaccines only by the natural route; i.e., exposure to the mucous membranes.

Chicks raised for egg production because of their greater value and longer life span (up to 2 years of age) require a different vaccination program. In addition to the Marek's disease and other vaccinations just discussed, the pullets may receive a vaccination in the web of the wing or skin for fowl pox. In a small percentage of the layers, avian encephalomyelitis and Newcastle disease may also be administered in the web of the wing (the webbing of skin connecting the front portion of the wing bones).

In a small portion of the commercial egg layers, an intramuscular vaccination for Newcastle disease may be given. Because of the speed of the inoculation, an exact location cannot be described. It is usually in any fleshy portion either in the breast or the thigh. In some cases, a killed bacterin may be administered; this is usually administered under the skin behind the head.

Commercial turkeys are usually immunized less frequently than chickens. In some areas, they may be vaccinated by a natural method (mucous membranes) against Newcastle disease and fowl cholera. In other areas, an intramuscular vaccination, as described above, may be given for Newcastle disease. In some areas, killed bacterins to protect turkeys against fowl cholera and erysipelas are given once or more frequently. The bacterins are usually administered under the skin just behind the head; this portion is discarded at the processing plant.

The vaccination programs for commercial chicken and turkey breeding flocks are more complicated. This is because it is often necessary to provide parental protection to the baby poultry against many agents or organisms that are potentially capable of affecting the health of poultry and because the cost/benefit ratio dictates a program based on protection rather than cost.

The time spent in answering your letter should indicate to you our appreciation of your concern in this area. Cattle and sheep vaccinations of all forms, including intramuscular inoculations, have commonly been performed for hundreds of years.

Sincerely,

Irvin L. Peterson

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