1943

Poultry Improvement

R. E. Norton
Iowa State College

Follow this and additional works at: https://lib.dr.iastate.edu/iowastate_veterinarian

Part of the Large or Food Animal and Equine Medicine Commons, and the Poultry or Avian Science Commons

Recommended Citation
Norton, R. E. (1943) "Poultry Improvement," Iowa State University Veterinarian: Vol. 5 : Iss. 4 , Article 5.
Available at: https://lib.dr.iastate.edu/iowastate_veterinarian/vol5/iss4/5

This Article is brought to you for free and open access by the Journals at Iowa State University Digital Repository. It has been accepted for inclusion in Iowa State University Veterinarian by an authorized editor of Iowa State University Digital Repository. For more information, please contact digirep@iastate.edu.
Poultry Improvement

Aid by veterinarians needed

R. E. Norton, '44

Previous to the first World War, poultry production was limited largely to relatively small flocks. Poultry and eggs were primarily a farm by-product. Each farm flock was self sufficient. No outside breeding stock, commercial feed, or complicated system of marketing was involved in poultry production during the prewar period.

The postwar period marked the beginning of a new era in poultry industry. Farm flocks remained as one of those “extras” for the farm housewife; but in addition to small farm flocks, poultry raising of greater commercial significance to the individual producer was started on many farms. The invention of mammoth incubators initiated commercial hatcheries that made it possible for producers to get a large number of chicks at one time; this in turn started the movement toward poultry raising as a distinct enterprise. The mushroom growth of the poultry business continued until it had reached such proportions that a need arose for some means of breeding standardization and disease control in poultry.

Organizations Arose

Many varied organizations arose to provide some method of supervision to aid in the proper advancement of the industry. The activity of some of these organizations was confined to but one field, such as hatching or breeding. The American Poultry Association, a prominent poultry organization since about 1900, concerned itself chiefly with the creation of breeds and varieties of poultry and simple trials of them by producer experience. From these trials five breeds; the White Leghorn, White Rock, Barred Rock, Rhode Island Red, and its counterpart, the New Hampshire, came into popularity. A poultry organization which came into prominence after the first World War is the International Baby Chick Association. This organization has aided in the development of the commercial hatchery by pooling knowledge of hatchery operation and management. It is significant that no organization gave a great deal of attention to poultry disease control, so the poultry remedy houses have had a fertile field in which to operate.

Objectives Differed

State poultry associations began in the postwar period with the states of Massachusetts, Connecticut, New Hampshire, Maine, and Rhode Island leading the way in pullorum disease control; while Ohio, Michigan, Kansas, Iowa, and Indiana forged ahead in production breeding improvement. The associations established cooperation with state educational and regulatory agencies in more effective production breeding and pullorum control programs. There were, however, differences in objectives of the state associations, and their terminology and standards were not uniform. Advertising lacked a basis for statement and was often misleading. There was no standardized basis for exchange of stock between states. It became increasingly apparent that some method of federal control would be necessary if poultry improvement was to be carried on satisfactorily. Such a method of federal control grew out of the various
state plans and is known as the National Poultry Improvement Plan. The National Poultry Improvement Plan became operative in 1935 with funds appropriated by Congress to the Bureau of Animal Industry of the United States Department of Agriculture. The funds are used in cooperation with state authorities in the administration or regulation for the improvement of poultry, poultry products, and hatcheries. The plan is nation-wide in scope, but participation is optional on the part of the states and members of the industry within the states. The plan embraces four progressive poultry breeding stages, and four pullorum-control eradication classes with minimum requirements for each stage or class. The plan is designed to bring about poultry improvement through poultry breeding and hatchery control.

The requirements of the various breeding and control stages are herein briefly outlined. Before outlining the stages it would be well to define certain of the titles and phrases used by the Poultry Improvement Plan. The “Official State Agency” is the agency recognized by the Bureau of Animal Industry and the state government to cooperate in administration of the plan within the state. A “State Inspector” is an employee of the official state agency whose major duties comprise the official inspection of flocks, eggs, chicks, hatcheries, poultry premises, records, and methods employed in carrying on the work of the plan. An “R. O. P. Inspector” is an employee of the official state agency or other agency officially recognized by the state government whose major duty is the official inspection of flocks and records of the United States Record of Performance (U.S.R.O.P.) breeders. A “Flock Selection Agent” is a person who has taken a course of training in standardbred and production judging prescribed by a properly qualified state agency, and who has passed an examination and been authorized by the official state agency to do the flock selection work as provided for in the U. S. Approved and U. S. Certified breeding stages.

The most elementary of the breeding stages is the U. S. Approved breeding stage. To qualify for U. S. Approved flocks, both males and females are selected for constitutional vigor, standardbred and production qualities, and banded by state inspectors or flock selecting agents. The hatching eggs must weigh at least 1 11/12 ounces each, and at least one-third of the flocks supplying eggs to a hatchery are inspected and approved by a state inspector.
if and when the breeders are selected and banded by flock selection agents. Each U. S. Approved hatchery must be inspected at least once during each hatching season by a state inspector.

The U. S. Certified breeding stage differs from the U. S. Approved stage in the requirements for hatching eggs and males. The males in U. S. Certified flocks must come from U.S.R.O.P. single male matings while those of U. S. Approved flocks need not be pedigreed. The hatching eggs must average 24 ounces per dozen in addition to weighing 1 11/12 ounces each.

**U.S.R.O.P.**

The most popularly discussed breeding stage is the U.S.R.O.P. breeding stage. To qualify for this stage, the females are trapped-nested and must lay 200 or more eggs in one year. Both males and females must conform reasonably well with standard requirements, and eggs during the first year of laying must weigh an average of at least 24 ounces to the dozen and thereafter average at least 25 ounces to the dozen. All flocks are inspected by an R.O.P. inspector five times during the year. All chicks are individually pedigreed and wing-banded at hatching time.

The most advanced breeding stage under the National Poultry Improvement Plan is known as the United States Register of Merit (U.S.R.O.M.). In this stage, recognition is given only to U.S.R.O.P. males and females whose progeny excel in performance. A U.S.R.O.M. male must have at least one-third and a minimum of twenty of his daughters qualify as U.S.-R.O.P. females. A U.S.R.O.M. female must have one-third and at least four of her daughters qualify as R.O.P. females.

**Pullorum Control**

The National Poultry Improvement Plan provides for four stages in the control and eradication of pullorum disease. When testing for pullorum disease, the standard tube agglutination test, the stained antigen, rapid whole-blood test, or the rapid serum test may be used. The technique for each of these tests is described in detail in veterinary literature\(^1\), \(^2\), \(^3\), and reprinted in U.S.D.A. Miscellaneous Publication No. 300. The general plan of the program is to eliminate all breeding stock harboring pullorum infection, thus breaking the life cycle of the causal agent of pullorum disease, *Salmonella pullorum*.

The most elementary pullorum control stage is in the U. S. Pullorum-Tested class. Each flock in this class must contain fewer than 8 percent of reactors in 1942-43, fewer than 7 percent of reactors in 1943-44, fewer than 6 percent reactors in 1944-45, and fewer than 5 percent of reactors in 1945-46 and the following years. The testing work must be done within the 12 months immediately preceding the date of sale of hatching eggs or chicks. All chickens introduced into the breeding flock also must have been tested and be

(Continued on page 181)

**Mammoth incubators stimulated growth of the poultry industry.**

*Courtesy of James Mfg. Co.*
negative to the test used. Chicken eggs or chicks from non-tested flocks are not to be incubated or brooded in the same machine or in the same room with eggs from U. S. Pullorum Tested flocks.

The next class of pullorum control is the U. S. Pullorum-Controlled class. The requirements for this class are the same as for the U. S. Pullorum-Tested class except that the flock must be tested until less than 2 percent of reactors are found, and that incubation and hatching of eggs from such a flock is not carried on in the same hatchery with eggs from non-tested or U. S. Pullorum-Tested flocks.

Qualifications

To qualify for the U. S. Pullorum-Passed class, all chickens on the premises are tested after 5 months of age by an employee of the official state agency. The flock must not contain reactors on the last test made within the testing year which immediately precedes the date of sale of hatching eggs, chicks, or breeding stock. Birds introduced into the flock must be from U. S. Pullorum-Passed or U. S. Pullorum-Clean flocks. No eggs or chicks other than from U. S. Pullorum-Clean flocks are incubated or brooded in the same incubator or in the same room with eggs from U. S. Pullorum-Passed or U. S. Pullorum-Clean flocks.

The most rigid pullorum control class is the U. S. Pullorum-Clean class. In this class, all birds to be used as breeders are tested annually by a state pullorum tester when five months old or more. The flock must be tested in two consecutive tests which are conducted by an employee of the official state agency taken not less than 6 months apart, the last test being within the testing year immediately preceding the date of sale of hatching eggs, chicks, or breeding stock. Birds introduced into the flock must be from U. S. Pullorum-Tested, U. S. Pullorum-Controlled or U. S. Pullorum-Passed flocks only. Chicks from other flocks are not hatched or brooded in the same hatchery with chicks from U. S. Pullorum-Clean flocks.

The control of poultry disease under the improvement plan is at present confined to pullorum infection. The veterinary profession has in the past played too small a part in controlling and combating disease in this billion dollar industry. As a result of this negligence the extension departments, flock owners, short-course laymen, and associated poultry groups have made provisions for the control and actual treatment of poultry diseases.

The National Poultry Improvement Plan has initiated a constructive, far-sighted program in an effort to improve poultry stock. This plan is revised every two years to accommodate current conditions. The trend in breeding is toward development of high-producing families rather than high-producing individual hens and is being stressed by many leading poultrymen and geneticists. This program is aimed, of course, toward pullorum clean flocks with a low incidence of reinfection. Improvement of poultry can be obtained through this program if the poultryman is diligent in disease control and if a large percentage of hatcheries and poultry breeders in each state participate in the plan.

Veterinarian’s Part

The veterinarian can and should take an active part in improving and treating conditions of this industry which has taken definite steps toward practical improvement methods. As participation of the aforementioned is increased, this plan will more nearly approach its purpose of universal poultry improvement.

BIBLIOGRAPHY