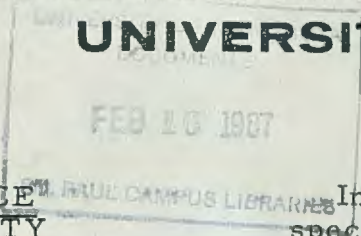


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Poultry Patter

AGRICULTURAL EXTENSION SERVICE • INSTITUTE OF AGRICULTURE
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POULTRY SCIENCE
AT THE UNIVERSITY

Elton L. Johnson
Professor and Head
Department of Poultry Science

The Minnesota poultry industry, a multimillion dollar business, is of great economic importance because of its size and the amount of money it brings into the state. In 1962 Minnesota was the second leading state in number of turkeys produced and was third in egg production, exceeded only by California and Iowa. Minnesota exports over two-thirds of its eggs and turkeys, and approximately \$100 million is brought into Minnesota each year from the sale of these products. The 1960 farm sales of chickens and eggs and gross income from turkeys exceeded \$144 million.

The poultry industry is a model in agricultural production in regard to rapid improvements in efficiency, utilization of modern technology, and quality of products provided the consumer at a modest cost. The Department of Poultry Science serves this major agricultural industry through activity in research, teaching, and public service. Special attention is given to the areas of genetics, nutrition, product technology, physiology, and (to a lesser extent) management studies. The department is under the guidance of Elton L. Johnson, professor and head. Other staff members include R. N. Shoffner (genetics), Milo H. Swanson (product technology), Paul E. Waibel (nutrition), R. E. Burger (physiology), and D. C. Snetsinger (nutrition).

In addition, the extension poultry specialist, Robert W. Berg, maintains his office in the department to facilitate close cooperation. Also, part-time extension activity for poultry is provided by specialists in agricultural economics (W. H. Dankers), agricultural engineering (D. W. Bates and D. M. Ryan), and veterinary medicine (R. B. Solac).

For the academic period 1961-63, 21 different courses are being taught by department staff members. Offerings vary from Poultry Production, an elementary course which is a broad approach to the entire industry, to highly advanced courses in the Graduate School such as Mineral Nutrition. Many course offerings are for general service of all students on the St. Paul Campus. Much teaching emphasis is placed on the graduate program. Currently 12 students are working toward advanced degrees in the several major disciplines within the department.

Public service is rendered in a number of ways. Research reports are published in both scientific and popular journals and released through radio, TV, and other communications media. Individual professors are in demand to discuss industry problems in private conferences as well as before organizational meetings and conventions.

Research activities represent a major portion of the department's total program. It is somewhat difficult to distinguish "research" and "graduate teaching" since the latter becomes an integral part of each research project activity. One aim of graduate teaching

is to train students to conduct research and solve specific problems. Some of this research is basic information but much of it can be applied directly by the industry. Below are several examples of research findings of interest to egg producers.

HIGHER CALCIUM LEVELS are required by the laying hen than previously thought necessary for optimum shell thickness and strength. Levels of calcium up to 4.25 percent of the diet have produced stronger and thicker shells than lower amounts. However, hens require less protein than previously thought necessary. This is particularly true when rations (corn-soybean meal type) are supplemented with the amino acids methionine and lysine.

EGG SHELL THICKNESS and other physical measurements as percent shell and specific gravity of the intact egg are used to estimate shell strength. Of these, the best single measure has been found to be specific gravity. The higher the specific gravity value, the greater the strength of the shell in withstanding breakage either by a direct crushing force or by impact. The percent of shell membrane or the amount of protein in the shell had no relation to shell strength.

OILING EGGS shortly after they are laid can aid greatly in maintaining high interior quality. Cloudy whites and ab-

normal amounts of outer thin white can develop in eggs sealed too completely too soon after laying. Research results suggest that to minimize these undesirable effects, oiling by dipping should be delayed 8 to 12 hours after laying. However, when the eggs are oil-sprayed, they can be treated without delay, because the sealing is less complete. Oil treating minimizes transfer of yolk material into the albumen and protein changes in the albumen itself during storage, resulting in higher cake volume than that obtained from unoiled eggs of the same age.

RELAXED SELECTION studies with white Leghorn population comparisons of three generations showed little if any decrease in performance. Traits measured were egg production, hen house viability, hatchability, and 8-week body weight.

MARCH EGG MONTH

An all-Minnesota Industry breakfast was held February 25 at the Highway Cafeteria, St. Paul. This breakfast was given for the Minnesota state legislators as a kick-off for March Egg Month. At this same meeting Governor Andersen signed a proclamation declaring March as Egg month.



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SKULI RUTFORD, Director
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and June 30, 1914.

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