

INTRODUCTION

When all the characters possessed by the domestic fowl are considered, egg production will appear to be of tremendous practical significance to all commercial poultry keepers throughout the world. The ability to lay eggs involves a number of physiological processes particularly those relating to egg formation. There is in addition the question of genetic factors as a result of which variations occur from one bird to another.

In order to judge individual birds as regards their performance in terms of egg production, a time basis will have to be introduced because a bird will have to lay a certain number of eggs in a given time for it to be regarded as economic.

Egg production in commercial breeds of poultry is influenced by both heritage and environment. Several factors are at work and contribute to these influences. Such factors are of direct scientific interest as well as economic importance to deserve some sort of serious study. The investigation reported in this thesis constitutes an attempt to evaluate some of these factors.

In the humid tropics generally, very little is known concerning both the environmental and management factors which may affect breaks in egg production. Persistency of production will depend on the total length of non-productive periods such as moulting, broodiness, and pausing. The principal causes determining the onset and duration of these non-productive periods as well as the interaction between them will have to be studied from a fundamental viewpoint.

The investigation of the subject of egg production is essentially of a long term nature but in the work here reported, the effects of basic factors such as date of hatching on the seasonal incidence and length of non-productive periods have been estimated. No definite conclusions can be drawn at the present stage of this investigation but one thing that can be said is that the foundations for a 'pilot scheme' have been laid which

it is hoped will serve as a preparatory ground for further specific experiments.

Most of the assumptions on which the work is based are arbitrary. This is what will be expected when it is remembered that as far as it is known, there is very little published work on the subject anywhere in the humid tropics. It is hoped that a continuation of this work and later specific investigations over a considerably longer period than is at present available to the writer will confirm or disprove some of the interim findings here reported.

...ing at the time are of major importance in determining egg yield and the age of birds at which the laying rate begins to decline (will be) and season of hatching are but secondary considerations. Perhaps it is important to point out that under the prevailing conditions of 1922, knowledge of poultry nutrition was not sufficiently developed for the successful rearing of chicks in complete confinement during the cold months of the year.

Egg and Thompson (1927) found little difference in average egg production between winter and spring batches in Oklahoma. They however noted a tendency toward slightly higher egg production during the summer months.

Berry and Walker (1927) working in New Mexico observed that April-laid eggs were heavier and gave a higher hatchability than eggs laid in the winter. They also noted that the weight of the egg was a good index of the quality of the egg. The results of their work are so different from those obtained in Florida and the extent to which these results will apply in Florida remains to be seen.

On the other hand, Elder and Park (1930) working in Missouri could not justify the assumption that the month of hatching chicks makes any difference to rate of lay, egg size, egg production patterns, feed consumption, and other physical factors because of the limited research work that has been reported. There appears to be a strong argument in the views expressed by these workers and more basic research will be necessary before valid conclusions can be drawn.

Early research workers particularly Jeffrey and Platt (1934) in New Jersey found that the effect of season on egg production is much greater than the effect of date of hatch. In other words, the effect of season on