SUMMARY AND RECOMMENDATIONS

Layer chicken farms are considered important projects which play a major role in the National economy, for their fast money cycles and their high profits. Many breeders have shared in animal production and egg production through the private projects in Egypt. Our government also established many Layer chicken farms to solve the production problems and actual consumption food problems in Egypt are due to a lack of food quality and quantity as well as in food calory. The Egyptian consumer does not obtain the same quantity of protein as his counter parts in the developed countries : Particularly egg protein which considers a cheap source.

Therefore, the aim of thesis was to study the economics of applying new ways for increasing egg production in Egypt as a cheap source of animal protein and consequently increasing the per capita consumption. The new ways were achieved by increasing the period of laying birds for an additional successful season with the use of growth promoters and gamma-irradiation treatments.

The experimented data and registered records were obtained from two sources :

(1) Statistics published by : The Ministry of Agriculture, institute of Agricultural economic, and the statistical National Planning institute.

(2) Studies and experiments carried out in the experimental poultry farm of the animal physiology unit, Biological Applications Department, Nuclear Research Center, Atomic Energy Authority.

This study included the following :

Chapter I : The abovementioned in troduction.

Chapter II : Contains the Review of literature in this field.

Chapter III : Concerns description of the experimental methods including the achieved results of applying the lactobacillus bacterial cultures and the lower doses of gamma-irradiation on egg production during the second productive season.

The results of those experiments showed that the gamma rays at 50 rad and 0.09 % of lactobacillus bacterial culture improved egg production of layer chickens (Shaver 288) in the second productive season.

The egg production as a result of these treatments increased from 55.9 % in control treatment to 72.62 % by using 50 rad and 68.75 % by using 0.09 % of the bacterial culture also the number of eggs/chicken increased from 31 egg/chicken/12 week (Control) to 41 egg/chicken/12 weeks using 50 rad of gamma-rays or to 39 egg/chicken/12 weeks by using 0.09 % of lactobacillus culture. Moreover, the total egg weight increased from 1.95 Kg/chicken for control to 2.63 Kg/chicken by using 50 rad or to 2.51 Kg/chicken by using 0.09 % of lactobacillus culture during the experimental period those treatments improved also the chemical characters of the laid eggs.

* In another experiment the relationships between the best treatments of experiment I along with zinc bacitracin supplementation in the layer feeding on egg production were investigated.

* The results showed that the lower dose of gamma rays (50 rad) individually or with lactobacillus culture resulted in a positive effects for increasing the egg production of (Shaver 288) during the second productive season. Using the antibiotic zinc bacitrocin individually or with lactobacillus or with gamma-rays showed negative results for egg production.

Chapter IV : Discussed the economical evaluation of the mentioned experiments, moreover the application on the National level was taken into consideration. The total costs resulted from the fixed costs and changed costs. The yearly consumption for

building and equipments resembled the highest value in the fixed costs, while the feeding costs showed the largest ratio in the changed costs. Four standard masures were calculated to demonstrate the economical evaluation.

First Standard Measure :

It clears the ratio between the total income to the total costs. This ratio reached to 131.37 % and 134.81 % in the first experiment for 0.09 % lactobacillus and 50 rad of gamma-rays respectively. While, this ratio was 127.18 % in the 2nd experiment after using both lactobacillus (0.09) and gamma-rays (50 rad) alltogether. By applying this measure on the National level it can be observed that these ratio reached to 116.37 %, 119.78 % and 113.34 % for the 1st and 2nd experiments respectively.

Second Standard Measure :

It expresses the pure income for the productive unit (1000 eggs). This measure was improved from 29.76 LE in the control treatment to 51.4 and 54.79 LE in the best treatments of the 1st experiment. This measure increased to 46.45 LE in the mixed treatment (Lactobacillus + irradiation), as compared to 35.70 LE in the control treatment. On the National level the abovementioned values were 32.13, 37.02 and 27.11 LE for the best treatments in both experiments.

Third Standard Measure :

It represents the total costs for the productive unit. It was remarked that the gamma-irradiation treatment gave the lowest costs followed by the lactobacillas treatment wether on the experimental or on the National levels.

Fourth Standard Measure :

It one of the most important measure for the economical evaluation. It demonstrates the percentage of profits for the used money. These percentages were 14.69 % and 18.38 % for the control treatments of the 1st and 2nd experiments respectively. While, these values improved to 31.37 %, 34.81 % and 27.18 % for the

best treatments in both abovementioned experiments. The last ratios on the National level were 16.37 %, 19.78 5 and 13.34 % by applyind the best results while, it was only 4.29 % for the control application.

It can be recommended from this study that it is preferable to added the lactobacillus culture to the diet of laying hens at level 0.09 % to improve the layer performance during the second production season. Despite the higher profits of applying gamma-rays as a tool for improving egg productivity, it would be very difficult to transfer all these numbers of laying birds to the irradiation sources and returning back.

Chapter V :

It concerns : The summary and recommendations.