

Economic Evaluation of the Use of Gamma Rays and Some Food Additives to Improve Hatchability and Productive Performance of Poultry

The poultry industry is considered among the most important element in the field of production of animal protein. This study aims to evaluate economical using of gamma rays and some feed additives on improving poultry hatchability and performance. This study included the following chapters: Chapter I : Contains the introduction and review. Chapter II : Focuses on the production and consumption poultry in CA.R. -<) • Chapter III. Contains the samples of study and six experimental methods including the lower doses of gamma irradiation on improving poultry hatchability and performance . I- The first experiment : Studied the effect of gamma rays radiation on hatchability in chickens. 2- The second experiment : Displayed the effect of gamma radiation on hatchability in Japanese Quails. 3- The third experiment: Illustrates the effect of gamma rays on improving hatchability percentage of chickens stored fertile eggs . 4 the fourth experiment : Assessed the effect of gamma radiation on hatchability in quails which stored of 20°C . 5- The fifth experiment: Evaluated the effect of gamma radiation and feed additives on improving growth of broiler chicks. 6- The six experiment: Studied the effect of gamma radiation on improving the growth of Japanese Quails . This study clarified that: 1- By using the dose 100 Rad of gamma rays the ratio of hatching for some classes of chickens which have given a hatching rate about 89.0 % in comparison to the control group in which the hatching rate amount to 79.74% this rate has increased with the range of 9.22 % . 2- By using radiation dose 25 Rad of gamma rays the ratio of hatching of the Japanese Quails which is fertilized 94.6 % Summary instead of 79.29 % of the control group which on increase of 14.31%. 3- By using the dose 100 Rad of gamma Rays the hatching ratio of the fertilized stored chickens at a degree of 12°C has increased to 90.66 % with comparison the control group in which the hatching ratio amounted to 76 % with an increase of 14.66 %. 4- By using the dose 100 Rad of gamma rays the hatching ratio of the fertilized stored Japanese Quails at a degree of 12°C has increased to 90 % with comparison the control group in which the hatching ratio amounted to 78 % with an increase of 12% . 5- By using the dose 25 Rad of gamma rays with some feed additives the weight of the bird mounted 1161 . 22 gram while it to 1127 .89 gram. 6- By using the dose 25 Rad of gamma rays then the rate of the growth of the Japanese Quail increases with a rate of 10.7 gram per bird. . Chapter IV: Economic analysis had been done on the experiments of study besides the analysis of investment in the field of radiation dose 100 Rad of gamma rays before hatching the eggs (poultry -quails) increases the investment revenues in this field from 31.5 % to 57 % , also the use of gamma rays 25 Rad increases the investment revenues in the production of Broiler chicks from 14.83 % to 19.83 , more over the same doses increases the investment revenues in the field of growing Quails from 29.88 % to 38.89 % to 48.22 % . The study clarified that we can increase the production of hatching hen eggs by using the radiation dose (100 Rad) from 72 % hatching average to 89.06 % and that leads to the increase of income of hatching hen eggs at the national level from L.E (6.3 Million to L. E 118 Million) . Also it leads to the increase of revenue on investment in this field from 31.5 % to 57 % . Also we can increase the revenue on national level in the field of hatching quail eggs from L.E 1.6 million to L . 2.6 million with the increase of revenue on investment in this field 1) . ~ % to 36 % ~ It is estimated that hatchability is reduced 4%)

for each day eggs are stored after 5 day . This increase in hatching of stored eggs would result in an increase in national income from 1. 171.9 million , to 1. E 210 million with an increase in investment revenue from 22.6 % to 48.5% for chicken eggs. Also we can increase the production or fattening poultry by using the dose (25 rad) four times so that the revenue or investment will increase in the field of production of (Broiler chicks) from 14.83 % to 19.38 and the increase of the production of fattening quails by using the dose (25 Rad) as it is expected that the revenue will increase from L. E (17 153) to L. E (2440). with the increase of revenue of investment in the field of fattening quails from 38.89 % to 48.22 % . The study clarified in the fourth chapter an economic study to establish a multipurpose radiation unit the total costs of fundamentals amounted to L..E (5.3 Million) and the annual operation (work) expenses amounted to L . E (1.27 Million) , the purchase and the consumption of capital fundamentals were valued by (0.34 Million pounds) and the total investment costs of the enterprise were valued by (6.3 Million pound). The enterprise can be financed by capital amounts to (2.9 Million pound). Along loan to be paid back in five years time with an interest of 7 % with the sum of 340000 L . E and the financial flow but of this project in the first year amounts 1.25 million L.E taking into consideration that the project will work with the half of its labour capacity, in the second year the financial flow amount to 1.65 million L. the taxes and will amount to 5.61million L . E in the twenty, in the twenty fifth part of the project. This study demonstrated that the cost of radiating of hatching eggs broiler chicks according to the fundamental suppositions of the research increase of laboring about half the productive capacity of the radiation unit we conducted the cost of the radiating of hatching eggs broiler chicks with a dose of 100 Rad amounts to 8.40 pound per ton, and the cost will decrease to the half increase of laboring the radiation unit completely with all its capacity (4.20 pound / per ton) . before discounting the taxes were 23 % increase of laboring the unit with 50% .Chapter V : Contain the summary and recommendations.