STUDY THE ECONOMIC AND PRODUCTIVE EFFICIENCY OF SOME BROILER FARMS IN RELATION TO RATION CONSTITUENTS

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ABSTRACT

Results of this study depended upon the results of feeding 12 different rations of some broiler farms of different feeding programs to Hubbard broiler breeds during the period from 1997 to 1999.This study was conducted to study the effect of ration type and its constituents on economic and productive efficiency of some broiler farms.

The results of this study showed that the productive and economic efficiency of broilers varied significantly ($P< 0.01$) among different rations and different feeding programs according to the protein and energy content of the ration and the Calorie : protein ratio of the rations. As the rations of high protein percentage especially during the starter period achieve high weight/broiler 1.85 Kg, higher broiler sale weight 180.11 Kg/100 broiler, higher total returns 994.81 LE/100 broiler, higher net profit 591.90 LE/100 broiler, higher return/kg broiler sale 5.53, decrease the cost of Kg 1.52 LE, and increase the net profit/Kg 3.99 L.E and the price of Kg to its cost 4.25. Meanwhile the benefit cost ratio will increase and reached to 4.26.

This study concluded that the energy level, protein percent and Calorie : protein (C/P) ratio were the main factors that determined the amount of ration consumed by broilers and controlled the economic and productive efficiency of broiler farms.

INTRODUCTION

Feeding cost for broiler chicks is usually considered the most expensive item (70-80% from total costs). Many attempts were made to reduce feeding expenses to the minimum level by replacing the costly foodstuffs, especially grains by cheaper and more abundant by-products by good ration formulation and good feeding mixtures (Reddy, 1993 and Aggoor et al., 1997).

The mixing ration constituents and good ration formulation for broilers commonly depend upon the Calorie/protein ratio (C/P ratio) (Aggoor et al., 1997). Also the feed requirements for poultry differed according to feeding systems, energy level in the ration (Balat, 1984).

Under Egyptian conditions the broiler rations consist of starter ration that fed to broilers from the period (1 to 20 days) and characterized by its crude protein about (21-23%). Meanwhile the finisher ration fed to the broilers from (22 days to the marketing age) and its protein content about (17-18%) (Atallah 1997 a,b; El-Sherbiny et al., 1997; Abou-El-Wafa et al., 1998; Mohamed, 1998 and Ali, 1999).

The body weight of broilers, feed conversion and efficiency, mortality percent and the other factors that affect economic and productive efficiency of broilers commonly affected by the type of rations, its constituents and type of feeding regimen (Atallah 1997 a, b and Abou-El-Wafa et al., 1998).
So the good ration formulation, constituents and good feeding regimen determine the feeding costs, total variable costs and total costs, total weight of poultry sale and the total returns of poultry projects (El-Shahat, 1983 and Aggoor et al., 1997).
The aim of this study was to determine the best ration, feeding regimen and its constituents, which can increase the efficiency and profitability of broiler projects under the Egyptian condition.

MATERIALS AND METHODS

This study was conducted during the period of 1997 to 1999 on the different cycles of 12 broiler farms of different provinces, each farm has its own feeding regimen (Table 1 & 2). The broilers of these farms were from the Hubbard breed to avoid the breed differences.

The studied different variables were ration type and its constituents, amount of feed/kg for starter, finisher and total rations, mortality number and percentage, average weight for each broiler, amount of poultry sale per Kg, costs of producing broiler under different ration types of different constituents, the costs include variable costs which include costs of (feeding, drug, vaccine, disinfectant and veterinary management costs in addition to litter costs and fuel costs). Also the fixed costs were calculated according to the Sankhayan (1983) as in the following equation:
Fixed costs = Building depreciation + equipment depreciation.
The building depreciation calculated for 25 years period but the equipment depreciation was calculated for about 5 years period.
The return parameters were calculated according to the following equation:
Total returns = Poultry sale value + litter sale value (Atallah et al., 1997 a, b) and El-Shinawy (1999).
But the net profit was calculated according to the following equation:
Net profit = Total returns – total costs (Atallah et al., 1997 a,b) and El-Shinawy (1999).
Also the following economic efficiency measures were calculated according to (Atallah 1997 a, b):

$$\text{Return/Kg} = \frac{\text{Total returns (LE)}}{\text{Total weight of poultry (Kg)}}$$

$$\text{Cost/Kg} = \frac{\text{Total costs (LE)}}{\text{Total weight of poultry (Kg)}}$$

$$\text{Net profit/Kg} = \frac{\text{Net profit (LE)}}{\text{Total weight of poultry (Kg)}}$$

Also the following measures were calculated according to Abd El-Rahman, et al., 1999; El-Ansary, 1999; El-Shinawy, 1999 and Osman and El-Barody, 1999):

$$\text{Feed conversion (F.C)} = \frac{\text{Amount of feed intake (Kg)}}{\text{Total body gain (Kg)}}$$

$$\text{Feed efficiency} = \frac{\text{Total body gain (Kg)}}{\text{Amount of feed intake (Kg)}}$$

$$\text{Calorie: Protein ratio (C/P)} = \frac{\text{ME Kcal /Kg}}{\text{Percent of protein in the ration}}$$

Statistics:- The statistical analysis was made according to SAS computer program (1987) to determine the effect of ration types and its constituents on the resources and traits of production and on the efficiency measures. LSD test was used after ANOVA to clarify the significant differences between the ration types and its constituents.

RESULTS AND DISCUSSION

The least square analysis of variance and level of significance due to the effect of ration type on the different variables affecting economic and productive efficiency of broilers were made as the following.

1- Starter, finisher and total feeding:

There were a highly significant difference ($P< 0.01$) due to the effect of ration type on the amount of feed consumed from the rations of (starter, finisher and total feeding).

The amount of starter ration consumed was lower in ration 3, 1 and higher in ration 10 and 11 as the amount of starter ration were 62.18, 81.76, 308.11 and 355.26 Kg/100 broiler for the previous rations; respectively (Table, 3). This may be attributed to the differences in C/P ratio of the previous rations, as the C/P ratio for these rations were 138.12, 138.12, 125.32 and 123.60 (Table, 1). Meanwhile the amount of finisher ration consumed ranged from 49.17, 85.38 to 278.30 and 346 Kg/100 broiler for the rations 11, 10, 3 and 8; respectively (Table , 3), and the C/P of the previous rations were 153.15, 153.15, 138.12 and 177.14; respectively. (Table, 1).

The total feed consumed all over the cycle ranged from 346.32, 357.31 to 411.53 and 454.00 Kg/100 broiler for broilers which were fed on rations 1, 7, 6 and 8; respectively. (Table, 3). These results indicated that as the level of energy decreased the feed consumption increased and these results agree with those of Osman and El-Barody (1999) as they reported that feed consumption was increased as the level of energy decreased. On the other hand, Sizemore and Siegel (1993) and Abd El-Razeque (1995) indicated that feed consumption was insignificantly affected by the level of protein and energy in the diet of broiler chicks.

2- Feed conversion and feed efficiency:-

There were highly significant differences ($P< 0.01$) for the effect of ration type on feed conversion and efficiency of broilers.

The values of feed conversion ranged from 2.04, 2.29 to 2.76, 2.81 for broilers which were fed on rations 3, 6, 8 and 1; respectively. Meanwhile the feed efficiency value ranged from 0.358, 0.361, 0.362 to 0.439, 0.443 and 0.492 for the rations 4, 1, 8, 6, 5 and 3; respectively. (Table, 3).

This results are agreed with those of Sonbol and Habeeb (1991) who reported that increasing protein percentage in starter ration improve feed conversion and feed efficiency than the increasing protein percentage in finisher ration. Also, these results are coincided with Lee et al. (1990), Cabel and Waldroup (1991), Matyka et al. (1992), Summers et al. (1992), Shariatemadari and Forbes (1993), Sizemore and Siegel (1993), Buyse et al. (1994) and Osman and El-Barody (1999) as they observed an improvement of feed conversion with increasing the levels of protein, energy or both in the diets of broiler chicks.

3- Mortality percentage

The mortality percentage differed significantly ($P< 0.01$) among different ration types. The mortality percentage ranged from 3.09, 3.30 to 10.42, 10.52 bird/100 broiler for ration 11, 10, 12 and 4, respectively. (Table, 3).

4- Average body weight for each broiler and total body weight sale/100 broilers.

There was a highly significant effect ($P< 0.01$) for different rations on average weight of each broiler and the total body weight/100 broiler.

The average body weight/broiler ranged from 1.26, 1.39 to 1.68, 1.74, 1.85 Kg/broiler for rations 1, 4, 5, 10 and 6, respectively (Table, 3). This attributed to the protein percentage of ration 5, 10, 6 was higher than the protein percentage of ration 1 and 4. This results are agreed with those of Sonbol and Habeeb (1991) who reported that increasing protein percentage during the starter period improve weight gain and final body weight than the increasing protein percentage during finisher period.

Meanwhile the total weight/100 broiler at marketing age ranged from 125.19, 148.15 to 171.24, 180.11 Kg/100 broiler for rations 1, 12, 10 and 6; respectively (Table, 4). This results attributed to the rations 10 and 6 have a high energy than the diet 1 and 12 and this results agreed with those of Andrews and Zimmermann (1990) as they concluded that broilers fed high energy dietary program had heavier body weight and lower feed conversion than the low energy diet. Also these results are in full agreement with the results outlined by Cabel and Waldroup (1991), Summers et al. (1992), Shariatemadari and Forbes (1993), Sizemore and Siegel (1993) and Osman and El-Barody (1999) as they observed a significant lower body weight of broilers fed on diets having low level of protein, energy and/or both.

5- Poultry sale value and total returns:

Table (4) explain the significant ($P< 0.01$) differences of poultry sale value and total returns among different rations of different constituents. The poultry sale values ranged from 688.56, 754.60 to 941.85, 990.60 LE/100 broiler at marketing age for the ration 1, 4, 10 and 6 respectively. Meanwhile the total returns ranged from 690.46, 758.20 to 946.26, 994.81 LE/100 broiler for the same rations, respectively.

6- Variable and total costs

Also Table (4) explain the significant differences ($P< 0.01$) of ration type on the variable and total costs. The variable (Working) costs ranged from 172.97, 257.62 to 459.93, 491.80 LE/100 broiler for rations 1, 2, 11 and 8; respectively. Meanwhile the total costs ranged from 185.12, 282.30 to 473.11, 511.20 LE/100 broiler for the same rations; respectively.

7- Net profit

The ration type was of high significant ($P< 0.01$) effect on net profit value. As the net profit values ranged from 300.65, 399.20 to 591.90, 597.06 LE/100 broiler for rations 4, 8, 3 and 2; respectively (Table, 5).

8- Economic efficiency measures

Table (5) explain the significant ($P< 0.01$) effect of ration types and their constituents on the efficiency measures of each kilogram poultry sale.

The return of each kilogram poultry sale ranged from 5.51 to 5.53, 5.53 LE/Kg for rations 1, 8 and 12; respectively.

Meanwhile the cost of each kilogram ranged between 1.52, 1.78, 1.97 to 3.11, 3.32 LE/Kg broiler sale for rations 1, 2, 3, 8 and 4; respectively.

Also the net profit of each kilogram broiler sale ranged from 2.20, 2.42 to 3.74, 3.99 LE/Kg for broilers fed rations 4, 8, 2 and 1; respectively.

The price of kilogram broiler sale to its costs ranged from 1.70, 1.77 to 3.46, 4.25 for rations 4, 8, 2 and 1; respectively, but the benefit cost/ratio ranged from 1.71, 1.78 to 3.47, 4.26 for broilers which were fed rations 4, 8, 2 and 1; respectively.

These results indicated that, energy level, protein percent and C/P ratio were the main parameters affecting broiler profits, efficiency and the increasing energy and protein level in broiler diets increased gain, profits and efficiency of broilers and these results are in full agreement with those of Laki (1988) who showed that high energy and protein broiler diets increased broiler gain, profit and efficiency of broiler farms.

In conclusion, the energy level, protein percent and Calorie : protein (C/P) ratio were the main factors that determined the amount of ration consumed by broilers and controlled the economic and productive efficiency of broiler farms.

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Table (1) Different rations and its constituents that used in this study.

Ration	Type	Period of feeding	Constituents	Protein %	Energy	C/P
1*	Starter	1-21 day	650 Kg corn + 250 Kg Soya bean meal + 100 Kg Lohman concentrate***	21.92	3027.6	138.12
	Finisher	22-45 day	750 corn + 150 Soya bean meal + 100 Kg Lohman concentrate	18.4	3147.6	171.06
2*	Super starter	1-21 day	600 Kg corn + 300 Kg Soya bean meal + 100 Kg Lohman concentrate	23.68	2967.6	125.32
	Starter	22-35 day	650 Kg corn + 250 Kg Soya bean meal + 100 Kg Lohman concentrate	21.92	3027.6	138.12
	Finisher	36-marketing	700 Kg corn + 200 Kg Soya bean meal + 100 Kg Lohman concentrate	20.16	3087.6	153.15
3*	One type	All the cycle	650 Kg corn + 250 Kg Soya bean meal + 100 Kg Lohman concentrate	21.92	3027.6	138.12
4*	Starter	1-34 day	650 Kg corn + 250 Kg Soya bean meal + 100 Kg Lohman concentrate	21.92	3027.6	138.12
	Finisher	35-marketing	700 Kg corn + 200 Kg Soya bean meal + 100 Kg Lohman concentrate	20.16	3087.6	153.15
5*	Starter	1-30 day	650 Kg corn + 200 Kg Soya bean meal + 150 Kg Lohman concentrate	22.32	3035.5	136.00
	Finisher	31-marketing	600 Kg corn + 150 Kg Soya bean meal 100 Wheat bran +100 Kg Lohman concentrate + 50 Kg Rice polish	17.29	3218.6	186.15
6*	Starter	All the cycle	670 Kg corn + 230 Kg Soya bean meal + 100 Kg Lohman concentrate	21.21	3051.6	143.88

Table (1) Different rations and its constituents that used in this study.(continue)

Ration	Type	Period of feeding	Constituents	Protein %	Energy	C/P
7*	Starter	1-21 day	600 Kg corn + 278.48 Kg Soya bean meal +120 Kg Lohman concentrate + 120 gm Meth. + 600 g Zinc + 800 gm Anticoccidial drug.	23.77	2967.77	124.85
	Finisher	22-marketing	500 Kg corn + 314 Kg Soya bean meal + 185 Kg Lohman concentrate + 400 gm Zinc + 600 gm Methionine.	22	2860.33	130.02
8 **	Starter	1-25 day	Corn + Soya bean meal + Meat meal + Wheat bran + Cotton seed decorticated + 4.1% fiber + 3% Crude fat.	21	3000	142.86
	Finisher	26-marketing	Corn + Soya bean meal + Meat meal + Wheat bran + Cotton seed decorticated + 4.1% fiber + 2.8% Crude fat.	17.5	3100	177.14
9*	Starter	All the cycle	650 Kg corn + 250 Kg Soya bean meal + 100 Kg Concord concentrate****	21.92	3027.6	138.12
10*	Super starter	1-21 day	600 Kg corn + 300 Kg Soya bean meal + 100 Kg Lohman concentrate	23.68	2967.6	125.32
	Starter	22-38 day	650 Kg corn + 250 Kg Soya bean meal + 100 Kg Lohman concentrate	21.92	3027.6	138.12
	Finisher	39-50 day	700 Kg corn + 200 Kg Soya bean meal + 100 Kg Lohman concentrate for each ton: AD_3H + 1 Kg /ton methionine + 1 Kg/ton growth promoting + 0.25 Kg/ton zinc.	20.16	3087.6	153.15

Table (1) Different rations and its constituents that used in this study.(continue)

Ration	Type	Period of feeding	Constituents	Protein %	Energy	C/P
11*	Super starter	1-15 day	600 Kg corn + 250 Kg Soya bean meal + 150 Kg Lohman concentrate	24.08	2976.4	123.60
	Starter	16-35 day	650 Kg corn + 200 Kg Soya bean meal + 150 Kg Lohman concentrate	22.32	3036.4	136.04
	Finisher	36-marketing	700 Kg corn + 200 Kg Soya bean meal + 100 Kg Lohman concentrate	20.16	3087.6	153.15
12*	Super starter	1-14 day	600 Kg corn + 300 Kg Soya bean meal + 100 Kg Lohman concentrate	23.68	2967.6	125.32
	Starter	15-35 day	650 Kg corn + 250 Kg Soya bean meal + 100 Kg Lohman concentrate	21.92	3027.6	138.12
	Finisher	36-marketing	750 Kg corn +150 Kg Soya bean meal + 100 Kg Lohman concentrate + Verginamycin at the day 35, 0.5Kg/ton zinc, Magnesium sulphate 300 gm.	18.4	3147.6	171.07

* Means: Hand mixing rations ** Means: Manufactured rations

Table (2) Chemical analysis of the Lohman and Concord concentrates used in the different broiler rations

Analysis %	*** Lohman concentrates	**** Concord concentrates
Crude protein	52	52.18
Crude fiber	1.85	0.77
Crude fat	2.36	5.82
Calcium	8.2	8.90
Avail. Phosphorus	3.5	3.60
Methionine	1.64	-
Methionine + Cystine	2.4	2.05
Lysine	3.1	2.93
Salt	2.5	2.6
Metabolizable energy (Calculated, ME Kcal /Kg)	2406	2200

Table (3): Average values (X ± SE) for starter, finisher and total feeds, feed conversion and efficiency, mortality percent and weight of each broiler (for each 100 broiler).

Ration No.	Cycle Number	Feeding (Kg)			Feed Conversion Ratio	Feed Efficiency Ratio	Mortality percent	Body weight/broiler (Kg)
		Starter	Finisher	Total				
1	45	81.76 ± 3.23^{H}	264.55 ± 5.54^{BC}	346.32 ± 4.84^{EF}	2.81 ± 0.05^{A}	0.361 ± 0.01^{D}	5.87 ± 0.84^{AB}	1.26 ± 0.02^{D}
2	25	177.16 ± 4.33^{ED}	223.742 ± 7.43^{CDE}	400.90 ± 6.49^{BC}	2.52 ± 0.07^{ABC}	0.400 ± 0.01^{BCD}	6.10 ± 1.12^{AB}	1.60 ± 0.03^{B}
3	6	62.186 ± 8.85^{H}	278.30 ± 15.16^{B}	340.49 ± 13.24^{F}	2.04 ± 0.14^{D}	0.492 ± 0.02^{A}	5.49 ± 2.29^{AB}	1.68 ± 0.07^{AB}
4	9	197.36 ± 7.22^{CD}	191.09 ± 12.38^{EF}	388.45 ± 10.81^{BCD}	2.83 ± 0.12^{A}	0.358 ± 0.01^{E}	10.52 ± 1.87^{A}	1.39 ± 0.05^{CD}
5	10	156.50 ± 6.85^{EF}	224.33 ± 11.74^{CDE}	380.83 ± 10.26^{BCDE}	2.26 ± 0.11^{CD}	0.443 ± 0.01^{AB}	4.99 ± 1.77^{AB}	1.68 ± 0.05^{AB}
6	4	203.25 ± 10.83^{C}	208.28 ± 18.57^{ED}	411.53 ± 16.22^{B}	2.29 ± 0.17^{CD}	0.439 ± 0.02^{BCD}	3.57 ± 2.81^{AB}	1.85 ± 0.08^{A}
7	8	159.86 ± 7.66^{EF}	197.44 ± 13.13^{EF}	357.31 ± 11.47^{DEF}	2.30 ± 0.12^{CD}	0.443 ± 0.02^{AB}	4.12 ± 1.98^{AB}	1.59 ± 0.06^{B}
8	5	108.00 ± 9.69^{G}	346.00 ± 16.61^{A}	454.00 ± 14.51^{A}	2.76 ± 0.16^{AB}	0.362 ± 0.02^{D}	7.45 ± 2.51^{AB}	1.65 ± 0.07^{B}
9	3	205.92 ± 12.51^{C}	164.44 ± 21.44^{F}	370.37 ± 18.73^{CDEF}	2.38 ± 0.20^{BCD}	0.419 ± 0.03^{BC}	8.70 ± 3.24^{AB}	1.56 ± 0.09^{BC}
10	9	308.11 ± 7.22^{B}	85.38 ± 12.38^{G}	393.49 ± 10.81^{BCD}	2.30 ± 0.12^{CD}	0.435 ± 0.01^{BC}	3.30 ± 1.87^{B}	1.74 ± 0.05^{AB}
11	4	355.26 ± 10.83^{A}	49.17 ± 18.57^{G}	404.43 ± 16.22^{BC}	2.46 ± 0.17^{ABCD}	0.412 ± 0.02^{BCD}	3.09 ± 2.81^{B}	1.66 ± 0.08^{AB}
12	76	141.15 ± 2.49^{F}	246.10 ± 4.26^{BCD}	387.26 ± 3.72^{BCD}	2.65 ± 0.04^{AB}	0.384 ± 0.01^{CD}	10.42 ± 0.64^{A}	1.67 ± 0.02^{AB}

Means within the same raw having different letters are significantly different at ($P < 0.01$)

Table (4) : Average values (X ± SE) for variable, fixed and total costs, weight of poultry sale and returns from poultry sale, litter sale, total returns net profit per LE (for each /100 broiler).

Ration No.	Cycle No	Costs (LE)			Poultry sale (Kg)	Returns (LE)		
		Variable	Fixed	Total costs		Poultry sale value	Litter sale value	Total returns
1	45	172.97 ± 10.80^{F}	12.15 ± 0.47^{GF}	185.12 ± 10.81^{E}	125.19 ± 2.46^{E}	688.56 ± 13.51^{E}	5.87 ± 0.84^{E}	690.46 ± 13.52^{E}
2	25	257.62 ± 14.48^{E}	24.67 ± 0.63^{B}	282.30 ± 14.51^{D}	159.25 ± 3.30^{BC}	875.89 ± 18.12^{BC}	6.10 ± 1.12^{D}	879.36 ± 18.14^{BC}
3	6	310.60 ± 29.57^{DE}	17.79 ± 1.29^{CD}	328.40 ± 29.61^{CD}	166.68 ± 6.73^{ABC}	916.78 ± 36.99^{ABC}	5.49 ± 2.29^{E}	920.30 ± 37.04^{ABC}
4	9	429.87 ± 24.14^{ABC}	27.67 ± 1.05^{B}	457.55 ± 24.18^{AB}	137.20 ± 5.49^{DE}	754.60 ± 30.21^{DE}	10.52 ± 1.87^{A}	758.20 ± 30.24^{ED}
5	10	414.88 ± 22.90^{ABC}	31.92 ± 1.00^{A}	446.81 ± 22.94^{AB}	168.05 ± 5.21^{ABC}	924.32 ± 28.66^{ABC}	4.99 ± 1.77^{F}	932.95 ± 28.69^{AB}
6	4	437.97 ± 36.21^{ABC}	15.64 ± 1.58^{DEF}	453.62 ± 36.27^{AB}	180.11 ± 8.24^{A}	990.60 ± 45.31^{A}	3.57 ± 2.81^{G}	994.81 ± 45.36^{A}
7	8	425.58 ± 25.60^{ABC}	12.79 ± 1.12^{GEF}	438.37 ± 25.65^{AB}	157.62 ± 5.83^{BC}	866.94 ± 32.04^{BC}	4.12 ± 1.98^{F}	871.21 ± 32.08^{BC}
8	5	491.80 ± 32.39^{A}	19.40 ± 1.41^{C}	511.20 ± 32.44^{A}	164.54 ± 7.37^{ABC}	905.01 ± 40.53^{ABC}	7.45 ± 2.51^{C}	910.41 ± 40.57^{ABC}
9	3	419.24 ± 41.81^{ABC}	15.93 ± 1.82^{CDE}	435.18 ± 41.88^{AB}	154.90 ± 9.51^{BCD}	851.99 ± 52.32^{BCD}	8.70 ± 3.24^{B}	856.25 ± 52.38^{BCD}
10	9	367.37 ± 24.14^{CD}	11.27 ± 1.05^{G}	378.65 ± 24.18^{BC}	171.24 ± 5.49^{AB}	941.85 ± 30.21^{AB}	3.30 ± 1.87^{G}	946.26 ± 30.24^{AB}
11	4	459.93 ± 36.21^{AB}	13.18 ± 1.58^{GEF}	473.11 ± 36.27^{A}	165.63 ± 8.24^{ABC}	911.00 ± 45.31^{ABC}	3.09 ± 2.81^{G}	915.59 ± 45.36^{ABC}
12	76	376.24 ± 8.31^{BCD}	3.07 ± 0.36^{H}	379.31 ± 8.32^{BC}	148.15 ± 1.89^{CD}	814.83 ± 10.39^{CD}	10.42 ± 0.64^{A}	819.32 ± 10.41^{DC}

Means within the same raw having different letters are significantly different at ($P < 0.01$)

Table (5) : Average values (X ± SE) for the Kilogram broiler sale efficiency measures (Return, cost and net profit), price of the kilogram to its cost, in addition to the benefit cost ratio (for each /100 broiler).

Ration No.	Cycle Number	Net profit LE	Kg/efficiency measure				Benefit cost/ratio
			Return/Kg LE	Cost/Kg LE	Net profit/Kg LE	Price of Kg/cost of (Kg)	
1	45	505.33 ± 15.02^{ABC}	5.51 ± 0.001^{C}	1.52 ± 0.08^{F}	3.99 ± 0.08^{A}	4.25 ± 0.13^{A}	4.26 ± 0.13^{A}
2	25	597.06 ± 20.15^{A}	5.52 ± 0.002^{B}	1.78 ± 0.10^{E}	3.74 ± 0.10^{A}	3.46 ± 0.18^{B}	3.47 ± 0.18^{B}
3	6	591.90 ± 41.13^{A}	5.52 ± 0.001^{B}	1.97 ± 0.21^{E}	3.54 ± 0.21^{A}	2.82 ± 0.36^{C}	2.83 ± 0.36^{C}
4	9	300.65 ± 33.58^{D}	5.52 ± 0.001^{B}	3.32 ± 0.17^{A}	2.20 ± 0.17^{F}	1.70 ± 0.29^{F}	1.71 ± 0.29^{E}
5	10	486.14 ± 31.86^{ABC}	5.55 ± 0.003^{B}	2.65 ± 0.16^{C}	2.89 ± 0.16^{B}	2.09 ± 0.28^{D}	2.11 ± 0.28^{D}
6	4	541.19 ± 50.37^{AB}	5.52 ± 0.001^{B}	2.53 ± 0.25^{C}	2.99 ± 0.25^{B}	2.18 ± 0.44^{D}	2.19 ± 0.44^{D}
7	8	432.83 ± 35.62^{BC}	5.52 ± 0.005^{B}	2.82 ± 0.18^{B}	2.70 ± 0.18^{C}	1.98 ± 0.31^{E}	1.99 ± 0.31^{E}
8	5	399.20 ± 45.05^{CD}	5.53 ± 0.004^{A}	3.11 ± 0.23^{A}	2.42 ± 0.23^{E}	1.77 ± 0.40^{F}	1.78 ± 0.40^{F}
9	3	421.06 ± 58.16^{BC}	5.52 ± 0.001^{B}	2.80 ± 0.29^{B}	2.72 ± 0.29^{C}	1.96 ± 0.51^{E}	1.97 ± 0.51^{E}
10	9	567.61 ± 33.58^{A}	5.52 ± 0.003^{B}	2.23 ± 0.17^{D}	3.29 ± 0.17^{A}	2.68 ± 0.29^{C}	2.69 ± 0.29^{C}
11	4	442.48 ± 50.37^{BC}	5.52 ± 0.001^{B}	2.88 ± 0.25^{B}	2.64 ± 0.25^{D}	1.94 ± 0.44^{E}	1.95 ± 0.44^{E}
12	76	440.01 ± 11.56^{BC}	5.53 ± 0.001^{A}	2.56 ± 0.06^{C}	2.96 ± 0.06^{B}	2.18 ± 0.10^{D}	2.19 ± 0.10^{D}

Means within the same raw having different letters are significantly different at ($P < 0.01$)

الملخص العربى

دراسة الكفاءة الاقتصادية والإنتاجية لبعض مزارع دجاج التسمين وعلاقتها بنوعية العليقة ومكوناتها

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(اقتصاديات الإنتاج الحيوانى والتسويق وإدارة المزارع)

اعتمدت نتائج هذه الدراسة على نتائج تغذية ١٢ عليقة لبعض مزارع دجاج التسمين لسلالة الهبرد المختلفة فى برامج الغذاء الخاص بكل منها فى خلال فترة زمنية ممتدة من عام ١٩٩٧ حتى ١٩٩٩. وقد تم إجراء هذه الدراسة لمعرفة نوعية ومكونات العليقة وبرنامج الغذاء ومدى تأثيرها على الكفاءة الاقتصادية والإنتاجية لمزارع تسمين الدواجن.

وقد أوضحت نتائج هذه الدراسة أن الكفاءة الاقتصادية والإنتاجية لدجاج التسمين تختلف معنويا باختلاف نوعية العليقة ومكوناتها والبرنامج الغذائى الخاص بكل مزرعة وذلك تبعا لاختلاف نسبة البروتين والطاقة والنسبة بينهما فى العليقة. حيث تبين أن العليقة ذات النسبة العالية فى البروتين فى خلال فترة تغذية العليقة البادئة تحقق أعلى وزن للدجاجة (١,٨٥ كجم) ، أعلى مبيعات للدواجن (١٨٠,١١ كجم/١٠٠ دجاجة) ، أعلى إيرادات (٩٩٤,٨١/١٠٠ دجاجة) ، أعلى صافى عائد (٥٩١,٩٠ جنيه/١٠٠ دجاجة)، أعلى عائد لكل كيلوجرام من الدجاج المباع (٥,٥٣ جنيه/كجم) ويؤدى ذلك إلى نقص تكاليف الكيلوجرام من الدجاج المسوق بمعدل (١,٥٢ جنيه /كجم) بينما تؤدى إلى زيادة فى صافى العائد لكل كيلوجرام مسوق بمعدل (٣,٩٩ جنيه/كجم) كما كانت نسبة سعر الكيلوجرام من الدجاج المسوق إلى تكلفته (٤,٢٥) بينما نسبة الإيرادات إلى التكاليف كانت (٤,٢٦) .