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EVALUATION OF MEAT PRODUCTION PERFORMANCE IN BOTH CLOSED AND OPEN SYSTEMS IN ELMENOUFIA GOVERNORATE

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ABSTRCT: ***The present study and field measurements were carried out at broiler farms in Menoufia Governorate (Sadat City, El Khatatba, Ashmone, Kafr Dawod and Menouf) during the period in 2016 and 2017.***

The great object of this study was to determine the effect of some environmental factors (such as type of farms, density and in addition to, strains effects) on production and economical efficiency of broiler in Menoufia Governmente.Three densities were applied in open system, the first was 12 birds/ square meter, the second was 13 birds/m^2 and the third was 14 birds/m^2. But in closed system, four densities were applied (12, 13, 14 and 15 birds/m^2). All birds were reared on deep litter with expansive floors. The studied traits were (Body weights, growth rates, water and feed consumption, meat production traits and economic environmental of meat production.

The most important results were:

1- ***stocking densities 15/m^2 in closed system produced meat production were higher than other densities, (28.20 kg/m^2). In open system, the stocking densities of 14/m^2 produced more meat production (29.06 kg/m^2).***
2- ***Also, Arbor Acre strain realized were more meat production as 27.22 kg/m^2, while they were 26.57 kg/m^2 for Cobb and 26.13 kg/m^2 for Avian.***
3- ***In addition, closed system was more efficient in most traits where birds have higher body weight at 28 days, consumed less feed till 28 days of age and lower water consumption.***
4- ***These results indicated that the production cost per kg was higher in open system than closed system.***

Key words: ***Strain, stocking densities, Meat production traits and economic charcters.***

INTRODUCTION

The consumption of poultry meat protein is recognized to be the main protein sources for human because of high value, cheaper price and customer prefacers.

Poultry became globally more and more important as a supplier of animal meat due to high efficiency for meat production in comparison to feed consumption.

Havenstein *et al.,* (2003) noted that not only the progress in breeding but also the improvement of nutritional management and, in addition to, the highly feed efficiency, which realized less feed intake to produce 1kg meat and decreased days of production cycle to about 30-35 days. (Dozier *et al.,* 2006; Timmerman *et al.,* 2006; Soltan and Kusainova 2012).

In El Menoufia Governorate, the working farms and dormitories were 793 dormitories in 367 farms. The full capacity of these farms are 20355700 birds as the following:

a- **Farms from 5 thousand to less than 25 thousand which have full capacity of 659450 birds but the actual are 403500.**

b- Farms from 25 thousand to less than 100 thousand which have full capacity of 13477450 birds, but the actual are 6869000.

c- Farms from 100 thousand and more which have full capacity of 6218800 and the actual are 3213500 birds.

The deactivated capacity are ranged from 38.8% in farms 5 from thousand to less than 25 thousand, to 49% in farms from 25 thousand to less than 100 thousand, and 48.3% in farms from 100 thousand and more (Economic Affairs Sector, Ministry of Agriculture, Egypt, 2015).

Such statistics indicated that Menoufia governorate have a good chance to increase the production rate of broiler, specially in farms from 25 thousand to less than 100 thousand which presented 66.9% from the total capacity and also in farms more than 100 thousand which presented 30.4% from the total capacity.

The present study are shown the effect of some environmental effect such as densities, systems of farms and strains of broiler chicks on the productive traits of farms that have 25000 to less than 100 thousand birds.

From economic view, this study presented the cost of producing one Kilogram of meat according to the present prices and suggesting the suitable price for both producer an consumers.

MATERIALS AND METHODS

The present study and field measurements were carried out at broiler farms in Menoufia Governorate (Sadat City, El Khatatba, Ashmone, Kafr Dawod and Menouf) during the period on 2016 and 2017. (Fig. 1 and Fig. 2).

Figure (1): Menoufia Government (El Sadat City, Menouf and Ashmon)

Figure (2): Menoufia Government (El Sadat City, El Khataba and Kafr Dawod).

The great object of this study was to determine the effect of some environmental factors (such as type of farms, density and in additions strains effects) on production and economical efficiency of broiler production in Menoufia Government.

1. Densities:

Three densities were applied in open system, the first was 12 birds/ square meter, the second was 13 birds/m^2 and the third was 14 birds/m^2. But in closed system, four densities were applied (12, 13, 14 and 15 birds/m^2), All birds were reared on land with expansive floors.

2. Management:

The total No. of birds were 1603698 which were presented in two types of farms, the first was open system (4 farms) and presented 3 strains Cobb500 (172700 birds), Arbor Acre (142300 birds) and Avian 48 (105140 birds) in different cycles. The total of birds in all the three strains were (434140 birds. The second system was closed farms (4 farms) and the presented three applied strains were Cobb500 (622631 birds), Arbor Acre (522927) and Avian 48 (24000) with total number of 1169558 birds. All birds were fed the basal starter, (1-14 days of age, with 23% crude protein and 3050 kcal/kg diet), grower (14-28 days of age, with 21% crude protein and 3100 kcal/kg), and finisher (28 days until sales, with 19% crude protein and 3180 kcal/kg), according to NRC (1994), as given in Table (1).

Table (1): composition and chemical analysis of experimental diets.

Diets	Starter Period (1-14 day)	Grower Period (14-28 day	Finisher Period (28 until sale
Yellow corn.	450	590	608
Soybean meal,44%.	270	212	205
Full fat soya.	50	70	60
Glutein, 60%.	80	70	70
Mono calcium phosphate.	16.5	16.5	16.5
Lime stone.	17.5	17.5	17.5
L-lysine.	2.5	2.5	2.5
DL-methionine.	2	2	2
Salt (NaCl).	3.5	3.5	3.5
Premix.	3	3	3
Total.	1000	1000	1000
Crude protein, %.	23	21	19
ME (kcal/kg).	3050	3100	3180
Crude fiber, %.	3.56	3.48	3.29
Raw fat is not less than,%.	4.2	5.44	6.32

*: Each kg of vitamin and mineral mixture: 12 M IU vitamin A; 5 M IU D_3; 80000 mg E.

3. Studied traits:

1- Body weights at different ages:

Weekly body weights were measured at one day old chicks then were weighted weekly till 28 days. Each week sample of (10% of total number of birds) was taken randomly.

2- Growth rates:

Growth rates were estimated intervally at 1-7, 7-14, 14-21 and 21-28 days of age, and cumulatively at 1-14, 1-21 and 1-28 days of age. Brody Formulas (1945). was used to calculate growth mates.

$$Growth \quad Rates = \frac{W_2 - W_1}{\frac{1}{2}(W_2 + W_1)} \times 100$$

3- Body weight gain (BG):

Body weight gain was measured as deviation between the body weights (in gram) at that ages.

4- Feed consumption (FC) (kg per bird/cycle):

The amount of feed consumption per bird per cycle were calculated by dividing

the total feed intake during the cycle on the receiving brid numbers in each dormitories.

5- Water consumption:

Each dormitories was provided with 1 or 2 tanks or more according the capacity of each one. The tanks capacity was 1000 Gallon or 2000 according to full capacity of dormitories.

Each day the feed intake for the dormitory was calculated then the consumption of water was calculated according to the formula of Michael Kohls, (2013).

6- Feed conversion ratio (FCR):

The feed conversion ratio was calculated as follow:

$$FCR = \frac{The \quad feed \quad \text{int}ake \quad (kg)/bird/cycle}{Body \quad weight \quad gain \quad /brid/cycle \quad (kg)}$$

7- European production efficiency (EPN):

The European production efficiency (EPN) was calculated according to formula from Meltzer (1980) and Soltan and Kusainova (2012) as follows:

$$EPN = \frac{Mean \quad body \quad weight \quad (kg) \quad at \quad marketing \quad \times livabilty\%}{Feed \quad conversion \times marketing \quad age \quad (days)}$$

8- Livability percentage:

$$Livability,\% = \frac{Total \quad number \quad of \quad survival \quad birds \quad per \quad cycle}{Total \quad number \quad of \quad received \quad birds \quad at \quad the \quad beging \quad of \quad each \quad cycle} \times 100$$

9- Meat production (kg/m²):

The amount of meat kg/m² was calculated by dividing the total weight produced from each density per each cycle by the survey of each dormitory (m²).

$$Meat/m^2 = \frac{The \quad mean \quad weight \quad \times \quad density}{Survey \quad of \quad dormitories}$$

10- Fatting index (F.I.):

Fattening index was calculated by (dividing the mean of body weight in kg/ feed conversion) according to Meltzer (1980) and Soltan and Kusainova (2012).

11- House efficiency index (H.E.I.):

House efficiency index was calculated according to Meltzer (1980) and Soltan and Kusainova (2012).

$$H.E.I. = \frac{Meat \quad production \quad pre \quad square \quad meter \quad in \quad (kg)}{Feed \quad conversion}$$

Statistical analysis

Data were computerized and analyzed according the following model by SPSS Program (1999). Also significant differencs among means were detected by Duncan (1955).

$$Y_{ijk} = \mu + F_i + S_j + D_k + (F\times D)_{ik} + (F\times S)_{ij} + (S\times D)_{jk} + (F\times S\times D)_{ijk} + e_{ijk}$$

Where:

Y_{ijk} : observation of i strain i density
μ : general mean
F_i : fixed effect of farms
S_i : fixed effect of (S_j) strain
D_i : fixed effect of (D_k) density
$(F\times S)_{ij}$: effect of interaction $(F\times S)_{ij}$
$(F\times D)_{ik}$: effect of interaction $(F\times D)_{ik}$
$(S\times D)_{jk}$: effect of interaction $(S\times D)_{jk}$
e_{ijk} : residual effect

RESULTS AND DISCUSSIONS

Tables (2 and 3) obtained the effect of farms, densities and strains on livability percentages, European efficiency index (EPNX), fattening index %, production No. %, house efficiency % and meat production (kg/m²) in both closed and open system, respectively

It's clear that farms with open system have a best performance for all studied traits.

Cobb strain had 93.62%, 289.73%, 1122.79%, 1027.49%, 157.52% and 24.38(kg/m²) for livability, EPN%, fattening index %, production No. %, house efficiency % and meat production (kg/m²), respectively.

Table (2): Effect of farms, stocking densities and strains on meat production traits in closed system.

		Livability	EPN %	Fattening index %	Production No. %	House efficiency %	Meat production Kg/m²
		Mean ± SD	Mean ± SD	Mean ± SD	Mean ± SD	Mean ± SD	Mean ± SD
Farms	1	95.03 ± 0.65	338.39 ± 49.08a	1222.91 ± 158.54a	1136.96 ± 156.44a	156.79 ± 22.03b	26.80 ± 1.63b
	2	96.23 ± 1.04	334.33 ± 5.55a	1218.56 ± 58.95a	1149.92 ± 61.64a	153.44 ± 8.14b	26.74 ± 1.02b
	5	95.50 ± 1.18	397.10 ± 19.78b	1088.96 ± 73.60c	1011.69 ± 67.72b	154.35 ± 9.49b	24.46 ± 0.91c
	6	90.30 ± 4.86	281.56 ± 40.77b	1186.00 ± 85.93b	1051.97 ± 118.10b	166.16 ± 14.34a	30.13 ± 1.33a
Strain	Cobb	93.62 ± 4.66	289.73 ± 31.54b	1122.79 ± 76.53b	1027.49 ± 94.52c	157.52 ± 13.96	24.38 ± 0.46b
	Evian	94.75 ± 0.08	337.42 ± 13.97a	1246.47 ± 52.77a	1154.55 ± 48.35a	162.04 ± 6.87	27.25 ± 2.90c
	Arbor Acer	93.05 ± 3.48	321.05 ± 47.32a	1236.17 ± 110.12a	1128.13 ± 125.76b	161.80 ± 17.65	28.22 ± 2.05a
Density	12/m²	95.98 ± 0.92	350.14 ± 36.45a	1264.25 ± 121.34a	1187.82 ± 118.53a	156.27 ± 20.08v	26.26 ± 1.47c
	13/m²	93.16 ± 3.48	315.15 ± 28.09a	1221.63 ± 80.65a	1115.72 ± 90.85a	162.80 ± 14.73c	28.67 ± 1.36a
	14/m²	91.77 ± 5.26	279.25 ± 33.85b	1110.82 ± 65.82b	997.44 ± 83.58b	154.03 ± 8.17b	27.25 ± 2.86b
	15/m²	94.57 ± 2.36	290.45 ± 26.23b	1139.04 ± 96.33b	1047.62 ± 87.88c	170.85 ± 14.45a	28.20 ± 3.79a
Interaction	F×S	N.S	N.S	**	**	N.S	N.S
	F×D	N.S	**	**	**	*	N.S
	S×D	N.S	N.S	N.S	**	**	N.S

N.S. = mot significant * = significant at P≤0.05 ** = significant at P≤0.01

a,b,c, Differences between values having the same subscript in each column are not significant. EPN= European production efficiency

Table (3): Effect of farms, stocking densities and strains on meat production in open system.

		Livability	EPN %	Fattening index %	Production No. %	House efficiency %	Meat production Kg/m²
		Mean ± SD	Mean ± SD	Mean ± SD	Mean ± SD	Mean ± SD	Mean ± SD
Farms	3	93.03 ± 0.64	326.64 ± 14.24 a	1194.10 ± 58.23a	1087.98 ± 47.81b	155.56 ± 16.15a	27.15 ± 2.23a
	4	93.27 ± 1.34	292.66 ± 19.80b	1103.99 ± 64.09b	1008.76 ± 64.92b	136.78 ± 10.19b	26.10 ± 1.45b
	7	94.94 ± 0.18	322.20 ± 14.71a	1206.73 ± 46.10a	1953.24 ± 28.91a	153.12 ± 5.34a	26.57 ± 1.21b
	8	94.21 ± 0.67	326.18 ± 6.55a	1152.17 ± 21.73a	1063.02 ± 18.28a	158.06 ± 11.18a	27.43 ± 1.83a
Strain	Cobb	93.91 ± 1.09	313.43 ± 15.87	1166.29 ± 44.62a	1626.85 ± 23.73a	150.26 ± 12.10a	26.58 ± 1.80b
	Evian	93.81 ± 1.56	297.12 ± 19.64	1108.32 ± 62.27b	1019.33 ± 70.30b	141.42 ± 11.58b	26.13 ± 1.11b
	Arbor Acer	93.85 ± 0.98	326.34 ± 21.98	1187.57 ± 77.27a	1091.60 ± 72.84a	152.70 ± 15.76a	27.22 ± 1.75a
Density	12/m²	94.24 ± 1.04	311.67 ± 23.84	1152.18 ± 76.01	1540.15 ± 21.99	140.23 ± 10.07b	25.41 ± 1.10b
	13/m²	93.38 ± 1.04	310.72 ± 20.20	1152.50 ± 59.53	1054.67 ± 65.07	151.74 ± 9.11a	27.32 ± 0.76a
	14/m²	93.79 ± 1.25	324.71 ± 15.98	1189.63 ± 53.89	1087.88 ± 38.92	168.18 ± 8.34a	29.07 ± 0.76a
Interaction	F×S	*	N.S	N.S	N.S	**	N.S
	F×D	N.S	**	**	N.S	**	**
	S×D	**	*	N.S	N.S	N.S	N.S

N.S. = mot significant * = significant at P≤0.05 ** = significant at P≤0.01

a,b,c, Differences between values having the same subscript in each column are not significant. EPN= European production efficiency.

Cobb strain produced lower meat production per m^2, It was 24.38 kg/m^2, while they were 27.25 and 28.22 kg/m^2 for Arbor Acre strain. This result indicted that Arbor Acre and Avian strains have the best performance (Table 2 and Fig. 3, 4, 5 and 6).

In closed system, stocking densities 13/m^2 or 15/m^2 produced meat production better than other densities, which produced 28.67 kg/m^2 and 28.20 kg/m^2 respectively. The lowest meat performance in closed system was noticed for birds with density of 12/m^2. In open system, stocking densities of 14/m^2 or 13/m^2 produced more meat production (29.06 kg/m^2 or 27.3 kg/m^2). Also, Arbor Acre strain realized more meat production as 27.22 kg/m^2, while they were 26.57 kg/m^2 for Cobb and 26.13 kg/m^2 for Avian. (Table 3 and Fig. 3,4,5,6).

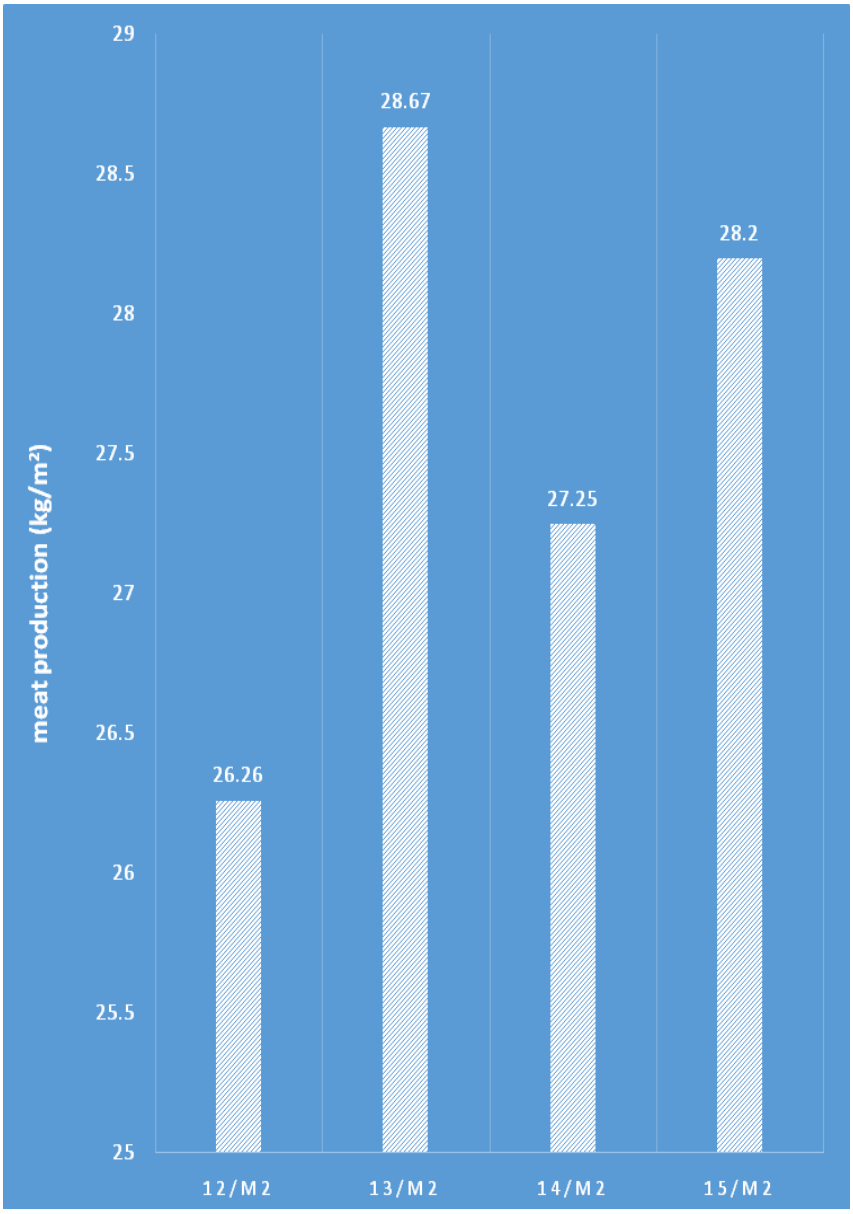

Fig (3) : Effect of stocking densities on meat production (kg/m2) in closed system.

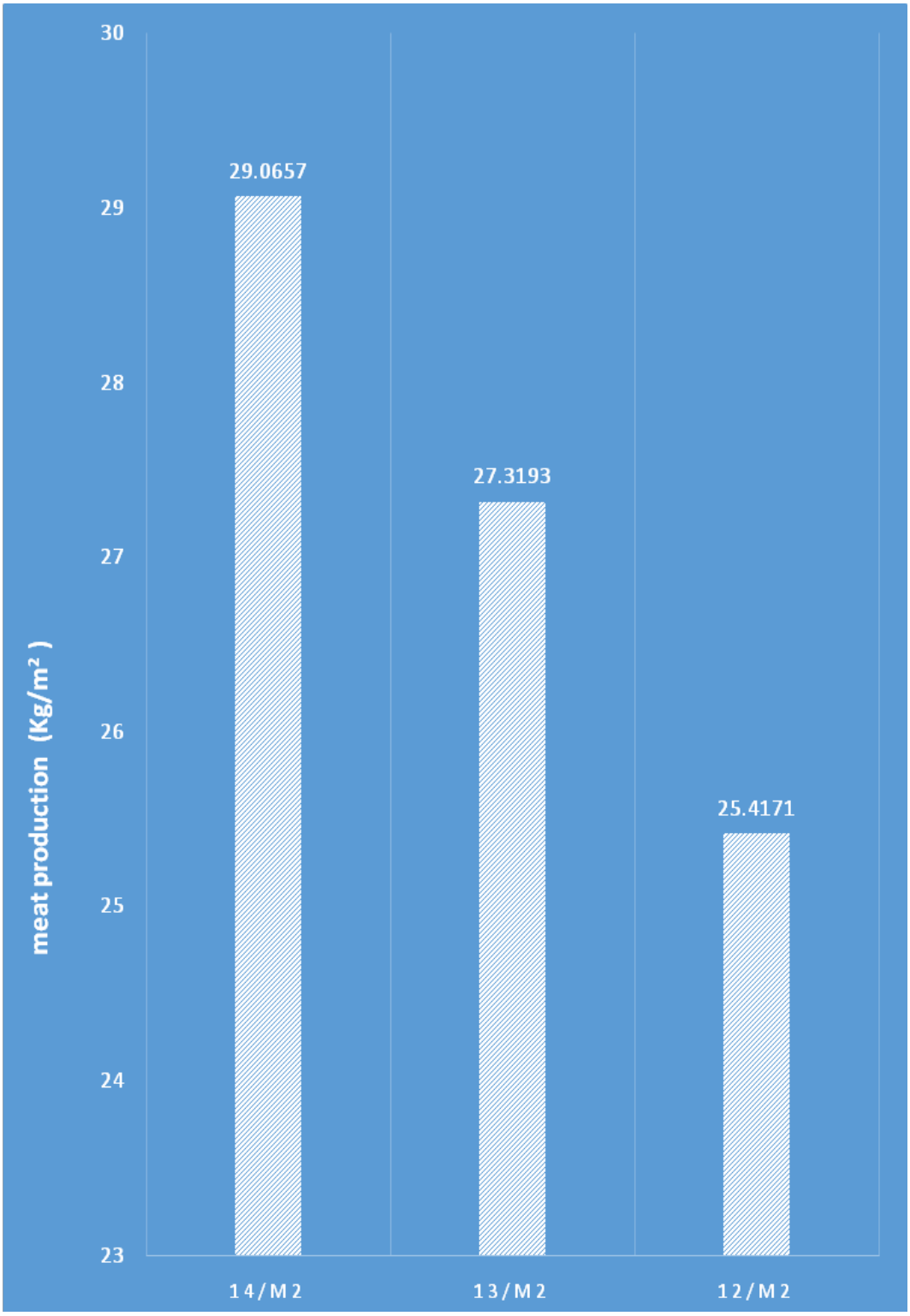

Fig. (4) :Effect of stocking densities on meat production (kg/m2) in open system.

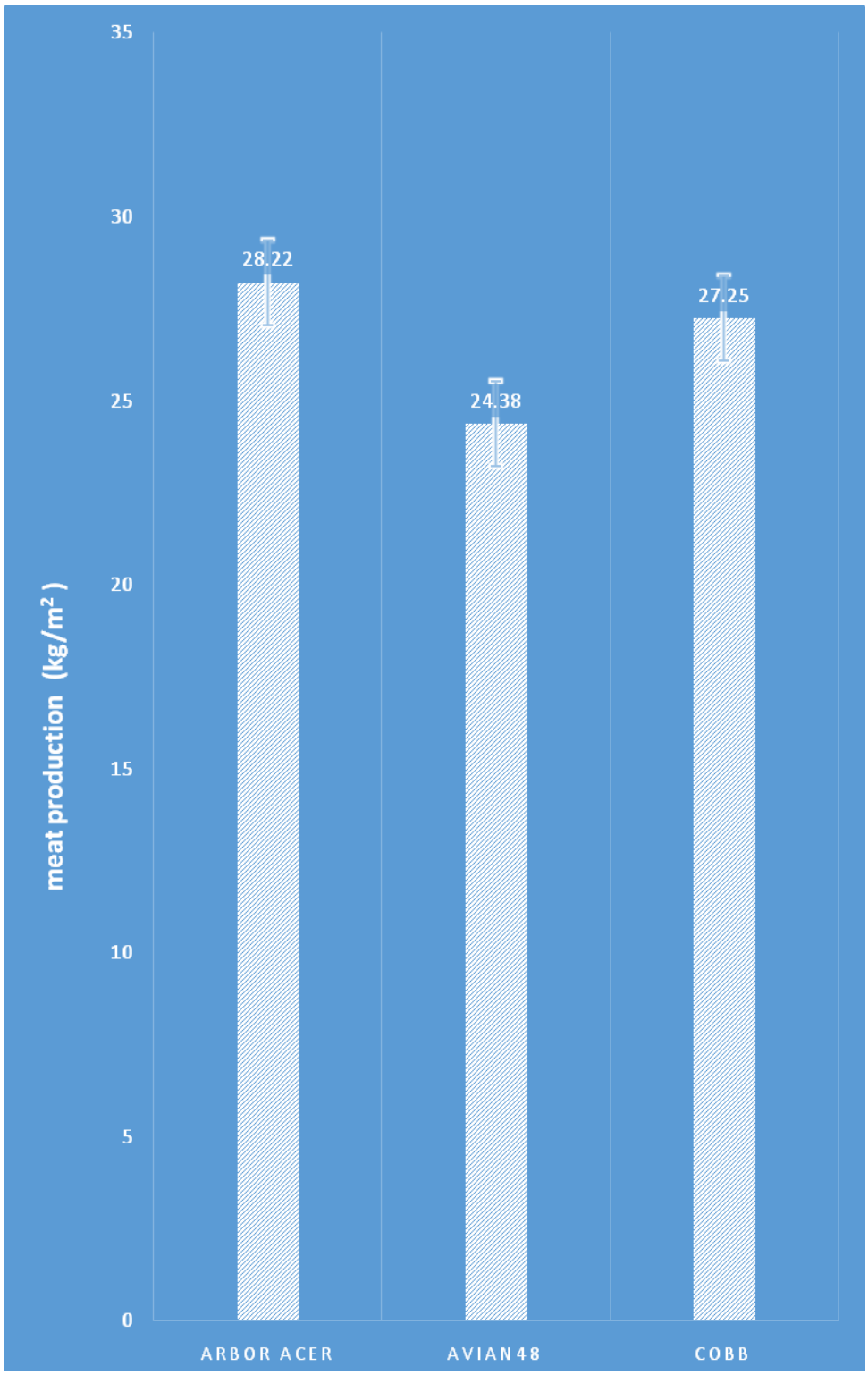

Fig. (5): Effect of strains on meat production (kg/m2) in closed system.

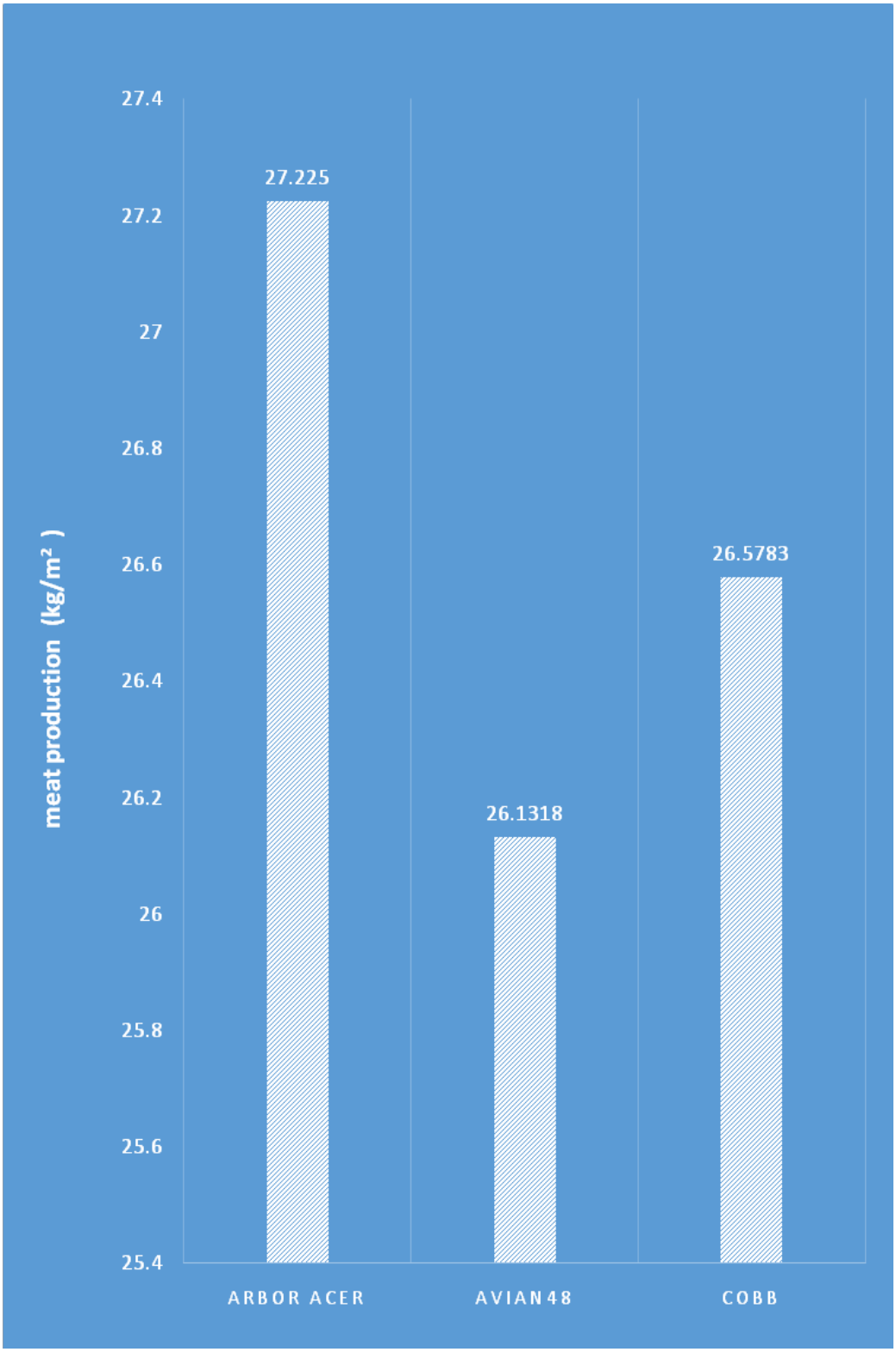

Fig. (6) : Effect of strains on meat production (kg/m2) in closed system.

Table (4) illustrated means of all studied traits in closed and open systems. It is clear that closed system was more efficient in most traits where birds have higher body weight at 28 days, consumed less feed till 28 days of age and lower water consumption.

Table (4): Total Averages of all studied production traits in both closed and open systems.

	CLOSED		OPEN	
Trait	**Mean**	**SD**	**Mean**	**SD**
Weight of 1 d	42.424	0.724	42.302	0.803
Weight at 7 d	166.644	9.026	168.605	5.615
Weight at 14d	454.373	33.477	460.186	16.996
Weight at 21 d	863.339	40.929	860.512	29.585
Weight at 28 d	1445.627	50.524	1443.837	34.758
gr1_7	118.694	3.427	119.723	2.293
gr7_14	92.534	3.389	92.719	2.168
gr14_21	62.184	4.223 *	60.626	2.257
gr21_28	50.475	2.611	50.647	2.484
gr1_14	165.700	2.209	166.290	1.245
gr1_21	181.230	0.841	181.243	0.581
gr1_28	188.585	0.373	188.609	0.291
Bw1_7	124.220	8.834	126.302	5.540
Bw7_14	287.729	27.123	291.581	13.584
Bw14_21	408.966	26.463	400.326	19.851
Bw21_28	582.288	29.317	583.326	27.865
Bw1_14	411.949	33.252	417.884	16.882
Bw1_21	820.915	40.771	818.209	29.285
Bw1_28	1403.203	50.282	1401.535	34.551
Water consumption L/bird/cycle	6.776	0.971 *	7.121	0.348
Feed consumption kg/bird/cycle	3.529	0.509 *	3.718	0.181
conversion rate	1.732	0.138 *	1.790	0.102
EPN %	304.087	41.412	313.461	21.644
Moratality rate %	6.655	4.081	6.070	1.300
Age of marketing	36.097	1.949	34.977	0.707
amont of meetproduction kg/m2	27.547	2.628	26.675	1.655
production NO	1072.736	117.923	1297.169	1537.300
House efficiency	159.415	14.889	148.794	13.724
fattening index	1173.102	106.580	1158.389	67.391

EPN= European production efficiency

In respect of economic evaluation to calculate the cost of producing 1 kg body weight plus 10% as gain for producer to obtain the price of selling one kilogram body weight in each strain under both open and closed system, Tables (5, 6 and 7) illustrated the economic evaluation and expected the price of selling 1 kg for Cobb, Arbor Acre and Evian strain in closed system respectively.

The cost of each elements were collected form feed mills, hatching and markets in the same year.

Table (5) showed that the selling price for 1 kg meat from Cobb strain were ranged from 14.35 to 15.00 El/kg in closed system. But the corresponding values from Arbor Acre strain were ranged from 13.95 to 14.88 El/kg (Table 6). In Evian strain the price were ranged from 14.35 to 15.00 El/kg. Similar trend was found by Al-Rwis (2001) in Saudi Arabia.

In respect of open system, the selling prices were ranged from 17.55 to 20.30 El/kg (Table 8), from 18.51 to 20.50 El/kg (Table 9), and from 19.45 to 21.30 El/kg (Table 10), for Arbor Acre, Cobb and Evian strains, respectively.

These results indicated that the production cost per kg was higher in open system than closed system. Also the small producer could be realized 10% as gained per kg and in the same time the customer get poultry meat with suitable price.

Table (5): The economics of broiler production from Cobb 500 strain in closed system (average price in E.P /kg of live bird produced).

		Cost			
	Farm	1	2	3	4
Baby chick		2.82	2.85	3.00	3.03
Feed		17.03	17.03	17.05	17.03
Rent		1.20	1.30	0.95	1.00
Labor		0.45	0.45	0.45	0.45
Medicine		2.55	2.55	2.25	2.15
Farmrunning		0.85	0.85	0.95	0.95
Adjust for moratality		0.35	0.34	0.34	0.35
Catch&transportation		0.11	0.11	0.14	0.14
Process&packing		0.53	0.50	0.39	0.43
Marketing.transpt.dist		1.00	1.00	1.00	1.00
Total		26.35	26.57	26.13	28.62
Profit		10%	10%	10%	10%
Selling price		14.95	15.00	14.70	14.35

Table (6): The economics of broiler production form cobb500 strain in open system (average price in E.P./kg of live bird produced).

		Cost			
	Farm	5	6	7	8
Baby chick		3.88	4.00	4.88	4.63
Feed		21.15	25.25	23.98	24.70
Rent		1.10	1.40	0.98	0.95
Labor		0.55	0.55	0.55	0.55
Medicine		5.53	5.50	3.65	3.68
Farmrunning		0.85	0.95	1.00	1.00
Adjust for moratality		0.42	0.45	0.45	0.45
Catch&transportation		0.12	0.12	0.15	0.15
Process&packing		0.58	0.56	0.45	0.45
Marketing.transpt.dist		1.25	1.25	1.25	1.25
Total		34.84	39.47	36.88	36.77
Profit		10%	10%	10%	10%
Selling price		18.51	20.50	20.26	19.82

Table (7): The economics of broiler production form arbor acer strain in closed system (average price in E.P/kg of live bird produced).

		Cost			
	Farm	1	2	3	4
Baby chick		3.20	3.30	3.10	3.50
Feed		17.90	18.03	17.50	18.80
Rent		1.20	1.30	0.95	1.00
Labor		0.45	0.45	0.45	0.45
Medicine		2.75	2.85	2.65	2.55
Farmrunning		0.85	0.85	0.95	0.95
Adjust for moratality		0.35	0.34	0.34	0.35
Catch&transportation		0.11	0.11	0.14	0.14
Process&packing		0.53	0.50	0.39	0.43
Marketing.transpt.dist		1.00	1.00	1.00	1.00
Total		28.34	28.73	27.47	29.17
Profit		10%	10%	10%	10%
Selling price		14.58	14.88	14.25	13.95

Table (8): The economics of broiler production form arbor acer strain in open system (average price in E.P. /kg of live bird produced).

		Cost			
	Farm	5	6	7	8
Baby chick		3.88	4.00	4.88	4.63
Feed		18.15	25.75	22.98	22.70
Rent		1.10	1.40	0.98	0.95
Labor		0.55	0.55	0.55	0.55
Medicine		5.53	5.50	3.65	3.68
Farmrunning		0.85	0.95	1.00	1.00
Adjust for moratality		0.42	0.45	0.45	0.45
Catch&transportation		0.12	0.12	0.15	0.15
Process&packing		0.58	0.56	0.45	0.45
Marketing.transpt.dist		1.25	1.25	1.25	1.25
Total		31.84	39.97	35.88	34.77
Profit		10%	10%	10%	10%
Selling price		17.55	20.30	19.28	18.85

Table (9): The economics of broiler production form avian48 strain in closed system (average price in E.P./kg of live bird produced).

		Cost			
	Farm	1	2	3	4
Baby chick		2.85	2.95	3.00	3.03
Feed		17.05	17.5	17.9	18.03
Rent		1.20	1.30	0.95	1.00
Labor		0.45	0.45	0.45	0.45
Medicine		2.65	2.55	2.25	2.15
Farmrunning		0.85	0.85	0.95	0.95
Adjust for moratality		0.35	0.34	0.34	0.35
Catch&transportation		0.11	0.11	0.14	0.14
Process&packing		0.53	0.50	0.39	0.43
Marketing.transpt.dist		1.00	1.00	1.00	1.00
Total		27.04	27.55	27.37	27.53
Profit		10%	10%	10%	10%
Selling price		14.95	15.00	14.70	14.35

Table (10): The economics of broiler production form avian48 strain in open system (average price in E.P./kg of live bird produced).

		Cost			
	Farm	5	6	7	8
Baby chick		4.88	4.90	4.88	4.63
Feed		23.15	25.75	24.98	24.70
Rent		1.10	1.40	0.98	0.95
Labor		0.55	0.55	0.55	0.55
Medicine		5.53	5.50	3.65	3.68
Farmrunning		0.85	0.95	1.00	1.00
Adjust for moratality		0.42	0.45	0.45	0.45
Catch&transportation		0.12	0.12	0.15	0.15
Process&packing		0.58	0.56	0.45	0.45
Marketing.transpt.dist		1.25	1.25	1.25	1.25
Total		37.84	40.87	37.88	36.77
Profit		10%	10%	10%	10%
Selling price		19.53	21.30	19.95	19.45

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تقييم الأداء الانتاجي في المزارع المغلقة والمفتوحة في محافظة المنوفية

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الملخص العربى

الدراسة الحالية والتقديرات الميدانية تم تقديرها وجمع البيانات من مزارع دجاج اللحم في محافظة المنوفية (مدينة السادات، الخطاطبة، أشمون، كفرداود، ومنوف)وذلك في الفترة من عام ٢٠١٦حتي نهاية عام٢٠١٧.

الهدف الرئيسي من هذه الرسالة هو تقدير أثار وبعض العوامل البيئية من نوع المزرعة والكثافة بالاضافه الي تاثير السلالات.وعلي الكفاءة الانتاجية والاقتصادية في محافظة المنوفية.وتم تطبيق ثلاث كثافات في المزارع المفتوحة وهي (١٢ طائر علي م^{٢} ،١٣م٢ ،١٤م٢) بينما فى المزارع المغلقة تم تطبيق اربع كثافات (١٢،١٣،١٤،١٥ طائر علي م٢) وجميع الطيور تم تربيتها علي الارض. وتم دراسة الصفات التالية وزن الجسم،معدلات النمو، ومعدل استهلاك الماء والعلف، وصفات انتاج اللحم ،والتقيم الاقتصادي لانتاج اللحم.

وكانت اهم النتائج هي:

١- في النظام المغلق كثافة ١٥م٢ (لكل متر مربع)انتاج لحم اقل من بقية الكثافات حيث أنتجت (٢٨,٢٠) كيلو جرام لكل متر مربع.وفى النظام المفتوح كثافة ١٤م٢(لكل متر مربع) حققت أعلي انتاج من اللحم (٢٩,٠٦). كيلو جرام لكل متر مربع.

٢- أيضا حققت سلالة الاربوايكرانتاج لحم أكثر ٢٧,٢٢ كيلو جرام لكل متر مربع، بينما بلغ ٢٦,٥٧ لسلالة الكوب،٢٦,١٣ لسلالة الإيفيان كيلو جرام لكل متر مربع.

٣- من الواضح أن النظام المغلق أكثر كفاءة في معظم الصفات الاقتصادية حيث حققت الطيور فية أعلي وزن جسم عند عمر٢٨ يوم وإستهلكت علف أقل عند عمر ٢٨يوم وكذلك كمية مياه أقل خلال فترة التربية.

هذه النتائج توضح أن تكاليف الانتاج أعلي في النظام المفتوح عن النظام المغلق.

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