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EFFECT OF DIETARY ALPHA YEA MIX SUPPLEMENTATION ON BROILER CHICKENS PERFORMANCE

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Abstract: *This experiment was conducted to investigate the effect of dietary Alpha Yea Mix (Yeast extract and Digestive enzymes) supplementation at levels of 0.1 and 0.2% on the growth performance of broiler chickens. One hundred and forty seven, one-day Hubbard broiler chicks were distributed in this study into 7 groups, (control and 6 treatments). Each group included three replicates of 7 chicks, each. The seven groups were as follows: Birds in group 1 (T1) fed the control diet from 1 to 42 days of age. Birds in groups 2 and 3 (T2 and T3) fed control diet supplemented with 0.1 and 0.2% Alpha Yea Mix, respectively from 1 to 21 days of age and then birds fed control diet until 42 days of age. Birds in groups 4 and 5 (T4 and T5) fed the control diet from 1 to 21 days of age and then fed the control diet supplemented with 0.1 and 0.2% Alpha Yea Mix, respectively from 22 to 42 days of age. Birds in groups 6 and 7 (T6 and T7) fed the control diet supplemented with 0.1 and 0.2% Alpha Yea Mix, respectively from 1 to 42 days of age.*

At 6 weeks of age, birds fed dietary of T3 recorded the best ($P \leq 0.05$) values of body weight (BW), daily body weight gain (BWG) and cumulative feed conversion (FCR) than other dietary treatments. These improvements were 24.4, 23.7, 16.1, 21.0, 13.4 and 17.1% for BW, 25.0, 24.2, 16.5, 21.4, 13.7 and 21.4% for BWG and 18.0, 19.8, 14.0, 22.1, 19.2 and 18.0% for FCR than that of T1, T2, T4, T5, T6 and T7, respectively. The overall mean of feed consumption (FC) in control group (T1) were decreased ($P \leq 0.05$) by 11.5, 7.1, 8.6, 16.1 and 9.7% as compared with that of T3, T4, T5, T6 and T7, respectively. No significant differences were found among all groups in carcass weight and dressing percentage. The birds fed on T3 group had the best economical efficiency (EE) value by 30% as compared with the birds of control group.

It was concluded that the broilers chicks fed control diet supplemented with 0.2% Alpha Yea Mix from 1 to 21 days of age (T3) and

then fed control diet until 42 days of age had best (P<0.05) growth performance and also recorded the best economical efficiency as compared with control birds fed the control diet or other dietary treatments.

INTRODUCTION

Recently feed additives are used in poultry diet, with small quantities, to enhance productive performance and immune response of birds. Performance of birds fed diets containing active dried yeast was improved *(*Abd El-Wahed *et al., 2003 and* Soliman *et al., 2003).* Subrata *et al., (1997)* studied the effect of feeding yeast on the carcass parameters of broilers, and they reported that carcass parameters did not differe between treatments. Also Abdel-Azeem *(2002)* indicated that carcass traits and internal organs were not affected due to addition of yeast culture at lg/Kg broiler diet. Moreover, yeast supplementation can inhibit pathogenic bacteria and increase the number of anaerobic and cellulytic bacteria as reported by Abdel Azeem (2002) and Soliman *et al.,* (2003). Results of Celik *et al.,* (2001), Churchil *et al.,* (2001) and Celik *et al.,* (2003) showed that yeast additives reduce the toxic effects of Alfato in. While, Spring (2002) and Santin *et al.,* (2003) revealed that yeast can improve immune activity of birds.

A promising method for accomplished efficiency of feedstuff utilization especially with ingredients currently considered inferior, is the use of supplementary feed enzymes. Although commercial application of feed enzymes is already common, this technology promises to play an even important role in improving the efficiency of animal feeding in future. Enzyme supplementation of poultry diets has been considered for more than 40 years but with mixed success. Chesson (1987) suggested that enzymes could be used for the hydrolysis of anti-nutritional factors (ANF), supplementation of the animal's digestive enzymes and hydrolysis of non-starch polysaccharides (NSP). Exogenous enzymes, added to the feed or used during feedstuffs processing have the potential to improve feed efficiency, reduce pollution associated with poultry manure and increase the use of low cost feed ingredients (Classen and Bedford, 1991; Makled, 1993; Attia and Abd El-Rahman, 2001; Attia *et al.,* 2001; Attia *et al.,* 2003). The present study was undertaken to determine the effects of supplementation different levels 0.1 or 0.2% of Alph Yea Mix (Yeast extract and Digestive enzymes) on growth performance, carcass traits and economical efficiency of broiler chickens.

MATERIALS AND METHODS

The experiment was carried out at the Poultry Research Farm of Animal and Poultry Production Department, Faculty of Agriculture, South Valley University, Qena, Egypt. One hundred and forty seven, one-day Hubbard broiler chicks were used in this study. All chicks were individually weighed, and randomly distributed into 7 groups, (control and 6 treatments). Each group included three replicates of 7 chicks, each. The birds were raised in batteries in a closed broiler house using controlled system. Each replicate was kept in a cage of 97 × 50 × 45 cm (7 chicks/cage).

The seven groups were as follows: Birds in group 1 (T1) fed the control diet from 1 to 42 days of age. Birds in groups 2 and 3 (T2 and T3) fed control diet supplemented with 0.1 and 0.2% Alpha Yea Mix, respectively from 1 to 21 days of age and then fed control diet until 42 days of age. Birds in groups 4 and 5 (T4 and T5) fed the control diet from 1 to 21 days of age and then fed the control diet supplemented with 0.1 and 0.2% Alpha Yea Mix, respectively from 22 to 42 days of age. Birds in groups 6 and 7 (T6 and T7) fed the control diet supplemented with 0.1 and 0.2% Alpha Yea Mix, respectively from 1 to 42 days of age. Alpha Yea Mix was added at the level recommended by Producer Company Alpha Chemical Egypt (1-2g/kg diet). Alpha Yea Mix was contains : 20% Live spray brewers (saccharomyces cerevisiae) yeast containing 2x109 euf/g; 24% Glucomannan complex (β1, 3-β1, 6D-Glucan and Mannan-oligosaccharides; 52% Yeast extract; 4% Digestive enzymes (Protease, 2,000,000 units/Kg; Cellulase, 900,000 units/Kg; lipase, 560,000 units/Kg; pectinase, 300,000 units/Kg; Xylanase, 240,000 units/Kg; ß – Glucanase, 300,000 units/Kg; lactase, 20,000 units/Kg; and phytase, 130 units/Kg)..

All birds were vaccinated against Marek's, Newcastle and Gumboro diseases. Standard commercial management of broiler birds was used throughout the experiment. The chicks were maintained under a 24 hours continuous lighting and water was offered *ad libitum*. The birds received a starter diet (1-3 weeks of age) and then switched to a grower diet (4-6 weeks of age). The composition and calculated analysis of the experimental diets are shown in Table (1).

Birds of each replicate were individually weighed every week, feed consumption and body weight gain (BWG) of each replicate was also calculated weekly. Feed conversion ratio was calculated weekly by dividing total feed consumed in a cage by the total weight gain of its birds.

Cost of one kilogram feed was calculated based on the prices of feed supplementation and the cost of the basal diet. The cost of feed / kg

gain was calculated based on the cost of one kilogram feed and feed conversion (feed/gain) ratio prevailing during 2005. The economical efficiency was expressed as a percent of net revenue/ feed cost.

At 42 day of age, three birds per group (one bird per replicate) were chosen. Birds were fasted for 12 hrs, and then were slaughtered and sacrificed for carcass evaluation. After that, the internal organs were removed from the body. Carcass yield calculated as percentage of live body weight, while giblets (heart, liver and gizzard) were calculated as percentage of carcass weight.

Data were subjected to ANOVA using General Linear Model Procedure of **SAS program (1996)**. Duncan's multiple range test was used to determine differences among means when treatment effects were significant (**Duncan, 1955**).

RESULTS AND DISCUSSION

1-Body weight (BW):

There were no significant differences in BW among all groups up 4 weeks of age (Table 2). At 5 weeks of age, the broilers fed on diets of T3, T4, T6 and T7 recorded higher ($P \leq 0.05$) higher BW than those of T5, but the broilers of T1 and T2 had an intermediate value. At 6 weeks of age, the broilers of T3 had significantly ($P \leq 0.05$) higher BW by 24.4, 23.7, 16.1, 21.0, 13.4 and 17.1% than that of T1, T2, T4, T5, T6 and T7, respectively, while no significant differences in BW among all other groups were found.

The improvement of body weight in treatment groups in comparison with control group (T1) may be due to positive effect of yeast and digestive enzymes in the broiler. Soliman *et al.,* (1996) and Zeweil (1996) reported that enzyme supplementation significantly improved LBW of broilers and quails. But, El-Husseiny *et al*., (1995) and Aboosadi *et al*. (1996) found that supplementation with enzyme preparations insignificantly improved LBW in broilers. Purushothaman and Natanan-(1999) found that the use of yeast culture (1g/kg) in broiler rations brought led to improvements in growth rate. Also, Zanella *et al*., (1999) showed that enzyme supplementation produced a 1.9% improvement in BW. Lazaro *et al.,* (2003) and Sarmiento *et al.,* (2003) reported that supplemented diet with enzymes from Trichoderma fungi, would improve the productive performance of chickens.

Furthermore, the enhancement in body weight for body weight fed dietary supplemented with Alpha Yea Mix may be due to that yeast can inhibit pathogenic bacteria as reported by Line *et al.,* (1998) and Soliman et *al.,* (2003). In addition, Abdel-Azeem (2002) found that the number of

anaerobic and cellulytic bacteria were increased when the experimental diet was supplemented with yeast which enhanced lactate utilization and moderates pH of the media, Therefore, yeast improves the nutrients digestibility and growth performance. Moreover, Churchil *et al.,* (2001) and Celik *et al.,* (2003) revealed that using yeast culture (S. cerevisiae) in broiler diets reduced the toxic effects of Alfatoxin B_1. Also, Santin *et al.,* (2003) and Soliman *et al.,* (2003) indicated that active yeast improves immune response of birds.

Also, the improvement in body weight as effect of feed supplementation may be due, especially to the enzymes content cellulase, xylanase and pactinase which enhance digestibility and poultry performance Annison (1991) reported that the amount of soluble arabinoxylan in feedstuff increase the viscosity of digesta, which slower the rate of digestion and absorption in intestines. Xylanases reduce the size of the molecules of arabinoxylan which result in decreasing the digestive viscosity and increase metabolizable energy of the diet. Several investigators (Simbaya *et al.,* 1996; Bohme, 1997) showed that the addition of protease enzyme would improve broiler chick growth. Kocher *et al.,* (2002) reported that the addition of enzyme products containing mainly hemicellulase, pectinase, B-Glucanase and some protease activities to the diet improve protein digestibility and metabolizable energy contents. Some investigators reported that adding phytase to broiler chick diets had positive impact on protein and amino acids availabilities of broiler diets and improved broiler performance (El–Deeb *et al*., 2000; and Attia *et al*., 2001). On the other hand, the beneficial effect of exogenous enzyme addition improved the growth performance of turkeys, decreased viscosity and consequently reduced the anti-nutritional effect of NSP, and leading to better performance (Vander Klis *et al.,* 1995; Mathlouthi *et al.,* 2003).

2. Body weight gain (BWG):

No significant ($P \leq 0.05$) differences in BWG were detected among all groups up to 4 weeks of age (Table 3). At 5 weeks of age, the broilers fed on T3 recorded higher ($P \leq 0.05$) body weight gain than those fed on T1, T2, T4, T5 and T6, but the birds fed on T7 had an intermediate estimate. At 6 weeks of age, the birds fed on T3 gained more ($P \leq 0.05$) than those of all other groups, while there were no differences ($P \leq 0.05$) in BW among all other groups were found. Concerning, the overall means fed on T3 showed higher ($P < 0.05$) daily BWG by 25.0, 24.2, 16.5, 21.4, 13.7 and 21.4% than those were fed on T1, T2, T4, T5, T6 and T7, respectively.

Yeast cultures were found to stimulate the activity of certain important bacteria, which are actively involved with the digestive processes, protein synthesis and nutrient absorption in the gastro-intestinal tract (Stockland, 1993). Furthermore, Vogt and Matthes (1991) reported that supplemented yeast increased weight gain of birds These improvements attributed to yeast cultures could be due to decreased proliferation of pathogenic bacteria (Miles, 1993).

Schutte *et al.,* (1995) revealed that diet supplemented with fungal endo-xylanase improve the apparent metabolisble energy (AMEn) of wheat diet and improved weight gain. Likewise, the beneficial effect of enzyme addition improved BWG of turkey and was associated with the increase in AMEn which is probably attributable to improvement in protein, fat and carbohydrate digestibilities (Ritz *et al.,* 1995; and Danicke *et al.,* 1999). Similar results were reported by Svihus *et al.,* (1997), Nahas and Leferancois (2001) and He *et al.,* (2003). Also, Gropp *et al*., (1992) and El-Faham *et al*., (1994) reported that certain enzyme supplementation (Kemzyme and Biosavor) significantly improved BWG. However, other investigators reported that enzyme preparations failed to improve BWG (Vukic Vranjes and Wenk, 1995; Soliman *et al*., 1996; Zeweil, 1996; Farrell and Martin, 1998).

3. Feed consumption (FC):

At 1st, 3rd and 5th weeks of age, no significant differences ($P \leq 0.05$) in FC were found among all dietary groups (Table 4). However, at 2 weeks of age, the broiler chicks fed on T4 consumed less ($P \leq 0.05$) feed than those in T1, T2, T5, T6 and T7. But the birds fed on T3 had an intermediate estimate. At 4 weeks of age, the broilers fed on T5 consumed less ($P \leq 0.05$) feed than the broilers in all other dietary groups, while no significant differences between all other groups were observed. At 6 weeks of age, the broilers fed on T1 and T2 consumed less ($P \leq 0.05$) feed than the broilers in other groups. However, the overall mean of FC for birds fed in control group (T1) were decreased ($P \leq 0.05$) by 11.5, 7.1, 8.6, 16.1 and 9.7%, as compared with those fed on T3, T4, T5, T6 and T7, respectively.Increase of FC in treatment groups may be due to suplementation of Alpha Yea Mix (Yeast extract and Digestive enzymes) on the diet

Many investigators reported that there were insignificant ($P \leq 0.05$) improvements in FC values due to enzyme supplementation (Soliman *et al*., 1996; Igbasan and Guenter, 1997). El-Husseiny *et al*., (1995) and Vukic Vranjes and Wenk, (1995) reported that significant improvements of FC for

broilers fed diets supplemented with certain enzyme (Kemzyme and Roxazyme).

4. Feed conversion ratio (FCR):

No significant differences (P≤0.05) in FCR were found among all groups (Table 5) up to 5 weeks of age. At 6 weeks of age, the broilers fed on T3 had better (P≤0.05) FCR than those of all other groups. Also, the broilers of T3 had significantly better (P≤0.05) cumulative FCR by 18.0, 19.8, 14.0, 22.1, 19.2 and 18.0% than that of T1, T2, T4, T5, T6 and T7, respectively. These improvements in feed conversion ratios resulted from supplementation of probiotics into broiler chick diets were mainly due to the higher body weight gain resulted from the improvements in the overall nutrient digestibility and the efficiency of energy utilization (Abd EL-Warth 2006).

Schutte *et al.,* (1995) revealed that diet supplemented with fungal endo-xylanase improve feed conversion. Zanella *et al*., (1999) indicated that enzyme supplementation improvemention in feed conversion ratio by 2.2% produced. Also, Purushothaman and Natanan-(1999) found that the use of yeast culture 1g/kg in broiler rations lad to significant improvement feed conversion efficiency.

5. Carcass criteria:

No significant (P≤0.05) differences in carcass weight, dressing and goiblets percentages were found among all groups (Table 6). These results coincided with those obtained by Kumprechtova *et al.,* (2000), Naik *et al.,* (2000), Abdel-Azeem (2002) and El-Ghamry *et al.,* (2002), They indicated that slaughter yield was not significantly influenced by feeding diet treated with yeast culture.

6. Economical Efficiency (EE):

Results in Table 7 indicate that the birds fed on T3 had heavier (P≤0.05) body weights than those of the other treatment groups and control group. The birds fed on T6, T3 and T7 consumed more feed, thus it had the highest feed cost. The birds fed on T2, T3 and T4 groups exceeded the economical efficiency than birds fed T1 (control) group by 1.5, 31.1 and 3.8%, respectively, while the birds fed on T5, T6 and T7 groups decreased by 8, 5 and 3%, respectively than those fed control diet. The birds fed on T3 group had the best EE value as compared with other groups.

CONCLUSION

It was concluded that the broilers chicks fed control diet supplemented with 0.2% Alpha Yea Mix from 1 to 21 days of age (T3) and then fed control diet until 42 days of age had significantly higher growth performance and economical efficiency as compared with control birds (T1) fed the control diet (without supplementation), birds fed control diet supplemented with 0.1 % Alpha Yea Mix (T2), and birds fed control diet supplemented with 0.1% or 0.2 % Alpha Yea Mix from 22 to 42 days age (T4 and T5) or from 1-42 days of age (T6 and T7) .

Table 1. Composition and calculated analysis of the experimental diets.

Ingredients, %	Starter diets (0-3 wks)			Grower diets (4-6 wks)		
	Treatment groups					
	1, 4 and 5	2 and 6	3 and 7	1, 2 and 3	4 and 6	5 and 7
Alpha Yea Mix*	0.0	0.1	0.2	0.0	0.1	0.2
Yellow corn, ground	53.97	53.87	52.77	56.35	56.25	56.15
Soybean meal (44% CP)	32.00	32.00	32.00	30.00	30.00	30.00
Corn gluten meal (60% CP)	9.00	9.00	9.00	6.00	6.00	6.00
Vit & Min. Premix**	0.30	0.30	0.30	0.30	0.30	0.30
Sunflower oil	2.00	2.00	2.00	4.00	4.00	4.00
Dicalcium phosphate	2.00	2.00	2.00	1.80	1.80	1.80
Limestone	1.00	1.00	1.00	1.00	1.00	1.00
Salt	0.38	0.38	0.38	0.38	0.38	0.38
DL-methionine	0.05	0.05	0.05	---	---	---
L- lysine	0.10	0.10	0.10	---	---	---
Total	100	100	100	100	100	100
Calculated analysis:						
ME, Kcal/Kg	3017	3014	3010	3145	3142	3138
Crude Protein, (%)	24.19	24.18	24.17	21.65	21.64	21.63
Crude fiber, (%)	3.16	3.16	3.16	3.05	3.05	3.05
Crude fat, (%)	4.62	4.62	4.62	6.65	6.64	6.64
Ca, (%)	0.93	0.93	0.93	0.88	0.88	0.88
P (Available, %)	0.52	0.52	0.52	0.48	0.48	0.48
Lysine, (%)	1.27	1.27	1.27	1.04	1.04	1.04
Methionine, (%)	0.62	0.62	0.62	0.41	0.41	0.41
Price of ton diet (LE), 2005	1654	1667	1680	1635	1648	1661

Alpha Yea Mix contains:** ***20% Live spray brewers (saccharomyces cerevisiaeyeast containing $2x10^9$ euf/g; 24% Glucomannan complex (B_1, 3-B_1, 6D-Glucan and Mannan-oligosaccharides; 52% Yeast extract; 4% Digestive enzymes (Protease, 2,000,000 units/Kg; Cellulase, 900,000 units/Kg; lipase, 560,000 units/Kg; pectinase, 300,000 units/Kg; Xylanase, 240,000 units/Kg; ß – Glucanase, 300,000 units/Kg; lactase, 20,000 units/Kg; and phytase, 130 units/Kg).

****Vitamins and minerals premix provided per kilogram of the diet:** ***Vit A, 10000 IU; D_3, 2000 ICU; Vit E, 10 mg; Vit K, 1 mg; B1, 10 mg; B_2, 5 mg; B6, 15000 mg; B12, 10 mg; Pantothenic acid, 10 mg; Nicotinic acid, 30 mg; Folic acid, 1 mg; Biotin, 50 mcg; Chlorine chloride, 500 mg; copper, 10 mg; iron, 50 mg; I, 10 mg; Manganese, 60 mg; Zinc, 50 mg, and selenium, 0.1 mg.***

Table 2: Effect of dietary Alpha Yea Mix supplementation on body weight (g) of broiler chicks.

Age (weeks)	T1	T2	T3	T4	T5	T6	T7
One day-old	45.3 ± 0.9	46.0 ± 1.2	45.3 ± 0.3	45.7 ± 0.9	45.0 ±0.6	45.7 ±1.20	45.6 ± 0.9
1	136.7 ±4.3	145.2 ±1.9	130.8 ± 4.5	138.5 ± 7.4	127.0 ± 3.8	144.6 ±3.7	141.4 ± 2.5
2	276.3 ± 16.0	275.4 ± 9.4	239.8 ±10.9	251.2 ± 10.6	226.5 ±4.4	265.8 ±20.9	260.7 ± 8.1
3	570.8 ±19.9	614.0 ±35.9	541.4 ± 25.8	568.8 ± 26.0	514.6 ±5.5	579.2 ±37.6	595.2 ±6.0
4	1000.0 ±22.0	1014.3 ±14.7	952.6 ±34.4	979.2 ±40.2	871.7 ±1.8	1012.5 ±43.8	962.8 ±37.9
5	1399.7^{ab} ±13.7	1366.1^{ab} ±20.5	1458.3 ^{a} ±48.1	1395.8^{ab} ± 48.5	1275.0 ^{b} ±18.0	1416.7 ^{a} ±43.1	1438.0 ^{a} ±17.5
6	1666.7 ^{b} ±41.0	1682.7^{b} ±51.6	2205.5 ^{a} ±185.6	1850.0^{b} ± 52.0	1742.6 ^{b} ±28.6	1910.4 ^{b} ±58.8	1827.4 ^{b} ±35.9

$^{a \text{ and } b}$ Means ± standard error in the same row with different superscripts are significantly different ($P \leq 0.05$).

Table 3: Effect of dietary Alpha Yea Mix supplementation on body weight gain (g/bird/day) of broiler chicks.

Age (weeks)	T1	T2	T3	T4	T5	T6	T7
1	13.05 ± 0.65	14.17 ± 0.35	12.20 ± 0.60	13.26 ± 0.94	11.71 ±0.51	14.15 ± 0.64	13.68 ±0.29
2	19.94 ±2.10	18.61 ±1.59	15.57 ± 1.06	16.10 ± 1.45	14.21 ± 1.18	17.30 ± 2.60	17.04 ± 1.39
3	42.08 ±0.56	48.37 ± 4.77	43.09 ± 2.15	45.37 ± 2.27	41.15 ± 0.22	44.76 ±2.73	47.80 ±0.43
4	61.31 ± 0.60	57.19 ± 3.09	58.74 ± 1.28	58.63 ± 2.08	51.01 ±0.77	61.90 ± 1.19	52.51 ± 6.23
5	52.38 ^{c} ±2.32	50.26 ^{c} ±2.1	72.25 ^{a} ±6.53	59.52 ^{c} ±1.19	57.2 ^{bc} ±2.84	57.74 ^{bc} ± 1.57	67.88 ^{ab} ±3.74
6	42.86 ^{b} ±5.43	45.24 ^{b} ±6.71	106.73 ^{a} ±20.06	64.88 ^{b} ±1.07	66.82 ^{b} ±2.34	70.54 ^{b} ± 2.25	55.63 ^{b} ± 7.41
Overall mean	38.60 ^{b} ± 1.00	38.97 ^{b} ±1.20	51.43 ^{a} ±4.41	42.96 ^{b} ±1.22	40.42^{b} ± 0.68	44.40 ^{b} ± 1.43	42.42 ^{b} ±0.83

$^{a, b \text{ and } c}$ Means ± standard error in the same row with different superscripts are significantly different ($P \leq 0.05$).

Table 4: Effect of dietary Alpha Yea Mix supplementation on feed consumption (g/bird/day) of broiler chicks.

Age (weeks)	T1	T2	T3	T4	T5	T6	T7
1	19.0 ±0.8	20.2 ±0..3	19.6 ±0..5	22.6 ±1.3	21.4 ±1.4	22.3 ± 1.0	21.1 ±1.1
2	49.9 [a] ±0.8	50.8 [a] ±2.1	47.6 [ab] ±1.6	42.4 [b] ±1.7	52.0 [a] ±2.6	48.9 [a] ±1.8	51.1 [a] ±2.1
3	73.5 ±5.6	74.7 ±1..3	82.4 ±5.0	77.7 ±2.4	69.3 ±3.0	83.0 ±1.8	75.6 ±3.9
4	96.6 [a] ±1.20	100.7 [a] ±4.7	100.3 [a] ±2.3	100.0 [a] ±3.6	86.6 [b] ±2.3	107.4 [a] ±2.6	98.8 [a] ±3.0
5	119.6 ±1.8	118.6 ±3.1	133.0 ±6.4	123.8 ±4.4	125.9 ±6.4	125.9 ±3.1	125.7 ±3.2
6	109.8 [d] ±2.7	117.3 [d] ±3.5	140.7 [c] ±5.3	139.6 [c] ±6.0	154.7 [ab] ±3.4	157.7 [a] ±5.7	142.9 [c] ±3.6
Overall mean	78.3 [d] ±0.4	80.4 [cd] ±2.0	87.3 [ab] ±2.4	84.3 [bc] ±2.3	85.0 [bc] ±1.2	90.9 [a] ±2.1	85.9 [abc] ±0.7

[a, b, c and d] Means ± standard error in the same row with different superscripts are significantly different (P≤ 0.05).

Table 5: Effect of dietary Alpha Yea Mix supplementation on feed conversion (g feed/ g gain) of broiler chicks.

Age (weeks)	T1	T2	T3	T4	T5	T6	T7
1	1.47 ± 0.11	1.43 ± 0.05	1.62 ± 0.07	1.71 ± 0.09	1.83 ± 0.14	1.59 ±0.14	1.55 ±0.09
2	2.56 ± 0.28	2.76 ± 0.14	3.07 ± 0.11	2.67 ± 0.24	3.73 ± 0.47	2.97 ± 0.47	3.04 ± 0.26
3	1.75 ± 0.14	1.57 ± 0.12	1.91 ±0.06	1.72 ± 0.10	1.68 ± 0.07	1.87 ±0.09	1.58 ±0.08
4	1.59 ± 0.01	1.78 ±0.18	1.71 ± 0.07	1.71 ± 0.01	1.70 ± 0.06	1.74 ± 0.03	1.95 ± 0.31
5	2.29 ± 0.07	2.36 ± 0.06	1.86 ± 0.14	2.08 ± 0.03	2.21 ± 0.22	2.18 ± 0.09	1.87 ± 0.13
6	2.63 [a] ±0.28	2.69 [a] ±0.34	1.41 [b] ±0.25	2.16 [a] ±0.13	2.32 [a] ±0.09	2.24 [a] ±0.01	2.66 [a] ±0.34
Overall mean	2.03 [a] ± 0.05	2.06 [a] ± 0.03	1.72 [b] ± 0.11	1.96 [a] ± 0.05	2.10 [a] ±0.06	2.05 [a] ±0.02	2.03 [a] ± 0.02

[a and b] Means ± standard error in the same row with different superscripts are significantly different (P≤ 0.05).

Table 6: Effect of dietary Alpha Yea Mix supplementation on carcass weight, dressing and goblets percentages of broiler chicks.

Age (weeks)	T1	T2	T3	T4	T5	T6	T7
Live body weight	1766.0 ±40.0	1870.0 ±73.1	2166.0 ±163.5	1831.3 ±52.0	1899.3 ±59.5	2023.3 ±84.4	1986.7 ±73.7
Carcass weight (g)	1336.0 ±47.1	1414.7 ±87.3	1668.7 ±104.8	1430.0 ±44.5	1440.3 ±32.8	1550.0 ±78.0	1530.0 ±64.6
Dressing (%)*	75.6 ±1.0	75.5 ±1.8	77.2 ±0.9	78.1 ±0.8	75.9 ±0.6	76.6 ±0.7	77.0 ±0.4
Giblets (%)**	4.8 ±0.2	4.7 ±0.3	4.5 ±0.1	4.4 ±0.1	4.6 ±0.2	4.6 ±0.3	4.4 ±0.2

* Calculated as percent of live body weight.
** Calculated as percent of carcass weight.

Table 7: effect of dietary Alpha Yea Mix supplementation on economical efficiency of broiler chicks.

Item	T1	T2	T3	T4	T5	T6	T7
Price of Kg starter diet	1.65	1.67	1.68	1.65	1.65	1.67	1.68
Price of Kg grower diet	1.64	1.64	1.64	1.65	1.66	1.64	1.66
FC/Starter diet/Kg	0.997	1.02	1.047	0.999	0.999	1.079	1.035
FC/Grower diet/Kg	2.282	2.256	2.618	2.544	2.57	2.737	2.572
Starter diet cost (LE)	1.65	1.70	1.76	1.65	1.65	1.80	1.74
Grower diet cost (LE)	3.74	3.70	4.29	4.20	4.27	4.49	4.27
Total feed costs (LE)	5.39	5.40	6.05	5.85	5.92	6.29	6.01
Average bird weight at 6 weeks (kg)	1.667	1.683	2.206	1.85	1.743	1.91	1.827
Bird price (LE)	12.50	12.62	16.55	13.88	13.07	14.33	13.7
Net revenue per bird	7.12	7.21	10.49	8.03	7.16	8.03	7.69
Economical efficiency	1.32	1.34	1.73	1.37	1.21	1.28	1.28
REE	100	101	131	104	92	97	97

Price of Kg live body weight, 2005 = 7.5 L.E.
LE.= Egyptian pound.

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الملخص العربى

تـأثير إضافة ألفا يي ميكس علي الأداء الإنتاجي لكتاكيت اللحم

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أجريت هذه الدراسة على مائه وسبعه واربعون كتكوت تسمين من سلاله الهبارد بغرض دراسه تـأثير اضافة ألفا يي ميكس (مستخلص الخميرة والإنزيمات الهاضمة) علي الأداء الانتاحي لكتاكيت اللحم.

قسمت الكتاكيت عشوائيا إلي سبع مجاميع وكل مجموعه اشتملت على ٣ مكررات وكل مكرره اشتملت على ٧ كتاكيت. ا لمجموعة الأولي (المقارنه) تم فيها تغذية الكتاكيت بحرية من عمر يوم الى ٤٢ يوم علي عليقه الكنترول. والمجموعتان الثانية والثالثه تم فيها تغذية الكتاكيت من عمر يوم الى 21 يوم علي عليقه الكنترول المضاف اليه١,٠ ، ٠,٢ %ا ألفا يي ميكس علي التوالي ثم الرحوع للتغذيه على عليقه الكونترول حتى عمر ٤٢ يوم. . والمجموعتان الرابعه والخامسه تم فيها تغذية الكتاكيت من عمر يوم الى 21 يوم علي عليقه الكنترول ثم اضيف اليها ١,٠ ، ٠,٢ %ا ألفا يي ميكس علي التوالي حتى عمر ٤٢ يوم. . والمجموعتان السادسه والسابعه تم فيها تغذية الكتاكيت من عمر يوم الى ٤٢ يوم علي عليقه الكنترول المضاف اليها ١,٠ ، ٠,٢ %ا ألفا يي ميكس علي التوالي.

حققت بدارى المجموعه الثالثة عند عمر ٦ أسابيع وزن جسم أكبر معنوياً ($P\leq0.05$) بحوالي ٢٤,٤ ، ٢٣,٧ ، ١٦,١ ، ٢١,٠ ، ١٣,٤ ، ١٤,١%، و متوسط اعلي في الزيادة اليومية فى وزن الجسم بحوالي ٢٥,٠ ، ٢٤,٢ ، ١٦,٥ ، ٢١,٤ ، ١٣,٧ ، ٢١,٤% ، وتحسن في كفاءه التحويل الغذائي بحوالي ١٨,٠ ، ١٩,٨ ، ١٤,٠ ، ٢٢,١ ، ١٩,٢ ، ١٨,٠% عن طيور بدارى المعاملات الاولي ، والثانيه ، والرابعة ، والخامسة ، والسادسة ، والسابعة علي التوالي. لوحظ انخفاض في الغذاء المستهلك ($P\leq0.05$) لبداري المجموعه الكنترول بحوالي ٢,٤، ١١,٥ ، ٧,١ ، ٨,٦ ، ١٦,١ ، ٩,٧% عن طيور بدارى المعاملات الثانيه، والثالثة، والرابعة ، والخامسة ، والسادسة ، والسابعة علي التوالي. ، بينما لم توجد اختلافات معنويه مابين طيور كل المجاميع فى وزن الذبيحة ونسبتي التصافى والحوائج. وحققت طيور المجموعة الثالثه أفضل كفاءة أقتصادية حيث زادات بنسبة ٣٠% عن طيور المجموعة الكنترول.

بصفة عامة نستخلص أن تغذية طيور البداري على عليقه مضاف اليها الفا يي مكس بمعدل ٠,٢% من عمر يوم الي عمر ٢١ يوم ثم بعد ذلك التغذية علي عليقة الكنترول حتي عمر٤٢ يوم (طيور المجموعة الثالثة) كان مصحوبا بتحسين فى الاداء الانتاجي وأحسن كفاءة أقتصادية عن طيور المجموعة الكنترول والمجاميع الاخري