

The effect of diet supplementation with antibiotic and Ginger on Broiler performance

Adel A. Al-Hamadani^{*}, Intesar Nadhum^{**} and Ahmed Nadhum^{**}

^{*} College of Agriculture/ Al-Anbar University

^{**} Agricultural Engineers Syndicate/ Al-Anbar

Abstract

The present experiment aimed to study the effect of diet supplementation ginger and antibiotic on broiler Performance, One hundred sixty seven non sexed day old (Hubbard) broiler chicks divided to four treatment with two replicates (22 chicks per replicate). The chicks were housed in Battery cages with four decks, The feed and water were supplied *ad libitum*. Chicks were random divided into four treatment groups as follows: The First treatment (T1): control, The second treatment (T2) basal diet + 0.4 % ginger. The third treatment (T3) basal diet + 0.8 % ginger The fourth treatment (T4), basal diet +0.5% Antibiotic (Newmycin). The parameters were study (body weight ,body weight gain, feed consumption, feed conversion ratio, mortality, water consumption, water consumption/ feed consumption ratio, relative growth rate and production index). At the end of the first week T2, T3, T4 data showed asignificant ($p<0.05$) decreasing in mortality compared with T1. From 1-28 days T4 showed significant ($p<0.05$) decreasing in feed consumption, water consumption compared with T1. From 29-49 days T1, T4 revealed significant ($p<0.05$) increased in body weight compared with T2. T1 had significantly ($p<0.05$) increased the feed consumption compared with T4. The relative growth rate in T3 showed significant ($p<0.05$) difference than T2. Through the period 1-49 days T4 showed significant ($p<0.05$) decreased in feed consumption compared with T1, but there were no significant ($p<0.05$) difference in body weight gain feed consumption ratio, mortality, water consumption/ feed consumption ratio, relative growth rate, production index between all the treatment. The over all datd showed that diet supplementation with ginger or antibiotics were significantly improved broiler performance.

Ginger

(2) (1)

(3)

(proteolytic)

(4)

Thrompoxane Synthesis

(5)

shogaol

(6)

. (7) E

(8)

Methyl Gultarul Co -)

(10 9)

% 1

(Enzyme A-Reductase

(11)

(12)

.(11)

/ /

176

(2010/ 1 /10) (2009/ 11/ 21)

. Hubbard

-:

22

:(T1)

% 0.4

:(T2)

% 0.8

:(T3)

/ 0.5

:(T4)

(1)

3

60

-:

:

-1

.(13)

-:

-2

.(14)

3

	-:	-3
	.(14)	
	-:	-4
	.(15)	
	-:	-5
	.(16)	
	-:	-6
	.(16)	
	.(17)	-7
	.(18)	-8

(1)

50	50	
25	35	
5	5	
18	8	
1	1	
0.7	0.7	
0.3	0.3	
100	100	
19.66	22.86	%
3010	2960	/) (
153.10	129.48	/
0.30	0.31	%
0.22	0.23	%
0.28	0.29	+ %
0.71	0.70	%
0.74	0.65	%
9.85	8.98	%

ALBLASSERDAM-HOLLAND (Brocon-5 special W)

% 2 .60 % 6.50 % 2 % 5 2100 % 40
 %4 + % 3.65 %3.70

(Complete Randomized Design) CRD

Duncan

.(19)

(SAS,2004) 9.1 SAS

(2)

(11)

% 1

shogaol , gingerlos , zingibren

(2)

T4	% 0.8	T3	% 0.4	T2
				T1
160.19	163.30	164.82	158.93	
124.26	124.82	126.30	121.98	
169.21	150.06	161.29	151.97	
1.38	1.20	1.28	1.25	
0.76	0.00	1.14	4.55	
b	b	B	A	
280.00	310.91	312.80	303.16	
1.66	2.08	1.96	2.00	/
123.10	123.48	124.05	122.41	

*

(P< 0.05)

T3

T3

T2

T4

(21 20) T4 T1 T3
 shogaol , gingerlos, zingibren
 (11)
 . %1
 (P<0.05) (3)

28

(P<0.05) T4 T1 T3
 T2 T1 T4 T3
 (P<0.05)

. (22)

(3)

28 -1

T4	% 0.8	T3	% 0.4	T2	T1
1259.17	1213.42	1259.03	1259.03	1259.17	
1220.62	1174.77	1220.28	1220.28	1218.62	
1950.33 b	2001.12 ab	2034.23 Ab	2034.23 Ab	2206.26 A	
1.60	1.70	1.67	1.67	1.81	
2.27	0.00	2.27	2.27	6.82	
3158.9 b	3440.7 ab	3548.1 Ab	3548.1 Ab	3932.7 A	
1.62	1.72	1.75	1.75	1.78	/
188.09	187.65	188.09	188.09	188.07	

*

T1

(P<0.05)

T4

(24 23 22)

(P<0.05) (4)

T1 T4

T2 (P<0.05) T3

(12)

T1

Trickal infection

Subclinical

T1

T1 T3

T2 (P<0.05) T4

(4)

49 - 29

T4	% 0.8 T3	% 0.4 T2	T1	
2656.83 a	2592.10 ab	2470.17 b	2648.50 a	
1397.31	1379.54	1211.28	1396.73	
2863.1 b	3049.8 ab	2949.9 ab	3500.7 a	
2.05	2.21	2.44	2.52	
0.00	0.00	0.00	0.00	
7764.4	7688.0	8038.8	9131.6	
2.73	2.52	2.73	2.62	/
71.37 ab	72.48 a	64.93 b	71.38 ab	

*

0.4 T2 %

(11)

. % 1

(P<0.05)

(5) 49

Zingibren , Gingerols, Shogaol (25)

(28) (27) (26)

(Chemotrypsin) (Trypsin)

(1) (Amylase) (Lipase) (Sucrase) (Maltase)

(29)

(P<0.05)

. (30)

(5)

49-1

T4	% 0.8	T3	% 0.4	T2	T1
2656.83 a	2592.10 ab		2470.17 b		2648.50 a
2617.93	2554.32		2431.57		2615.35
4802.6 b	5030.6 ab		4973.2 ab		5667.5 a
1.84	1.97		2.05		2.17
2.27	0.00		2.27		6.82
11466.4 b	11739.7 ab		12233.3 ab		13879.9 a
2.40	2.33		2.46		2.45
194.27	194.13		193.84		194.25
291.25	268.87		240.73		233.03

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- 1-Patel, k. and Srinivasan; R. (2000). Influence of dietary Spices and active Principles on pancreatic digestive enzymes in Albino Nahrung., 44: 42-46.
- 2- Srinivasan, v. ,Hamza; s., Krishnamurthy; k. s. and ThanKaman; c. k. (2003). Threshold level of Soil Zinc for optimum production Of ginger (*Zingiber officinale Rosc .*) In National Seminar on New perspectives in spies , Medicnal and Aromatic plants ., 69-70 (Abst) .
- 3-Yamahara , J. (1991) .Gastrointestinal motility enhancing effect of ginger and its active constituents. Chemical and pharmaceutical Bull . ,38:430-431.
- 4-Srivastava , K.C.(1986) .Effect of aqueous extracts of onion , garlic and Ginger on platelet aggregation and metabolism of Arachidonic acid in the blood vascular system in vitro study. Prostaglandins Leukot . Med .,227-235.
- 5-Mascolo , N. , Jain R. , Jain ; S.C. and Capasso ; F.(1989). Ethnopharma-Cologic investigation of ginger (*Zingiber officinale*).j. Ethnoph-Armacol. ., 27 : 129-40 .
- 6-Sharma , J.N., Srivastava;K.C and Gan ;E.K.(1994).Suppressive effects of Eugenol and ginger oil on arthritic rats Pharmacology .,49:314-318 .
- 7-Watson , R.R (2001). Vegetables ,Fruits and Herbs in Health Promotion, CRC Press , Chapter 12 , pg . 180 .
- .(2000) -8
- 9-William , F. ; Balistrer , M.D and Leslie , M.S (1986) . Liver function in : Text book of clinical chemistry ed . BY Tietz , N .W.: 1373- 1409.
- 10-Bujo , H.;Hermann,m ; Lindstedt , K. A . ; Nimff, J. and Schneider, W. J . (1997). Low Density Lipoprotein reseptor gene family members mediate Yolk Deposition.J.Nut ., 127:8015 – 8045.
- . (2008) -11
- .(1985) -12
- . (1989) -13
- . (1986) -14
- .(12) .(2006) - 15
- 16- Karimi Torshizi, M.A ;A.R.Moghaddam; Sh.Rahimi ;N.Mojgan . (2010). Assessing the effect of administering probict in water or as a feed supplement on broiler performance and immune response . British poultry science , 51 (2):178-184.

- 17- Gondwe , T. N. and C. B. A. Wollny . (2005) . Evaluation of the growth potential of local chickens in Malawi . *Int. J. of Poult. Sci.* 4(2):64-70 .
- 18- ROSS .(2009) . Broiler management manual of ROSS 308 . AVIGIN Company.
- 19- SAS .(2004) . SAS User's guide: statistical system, Inc. Cary, NC. USA.
- 20-Martins , A.P . ; Salagueiro ,L . ; Goncalves , M . j .;Da Cunha , A.P.; vila , R. Canigueral , S . ; Mazzoni , v ; Tomi , F . and Casanova , j .A (2001) . Essintial oil Coposition and Antimi crobia Activity of Three Zingiberaceae From S. Tome eprincipe . *planta Med .* ,67 :580 – 584 .
- 21-Akoachere , j . F . ; Ndip ,R ,n ; chenwi , E . B . Ndip , L . M ; Njock , T .E and Anong , D . N . (2002) . Antibacterial Effect of Zingiber Officinales and Garcinia Kola on Respiratory Tract pathogens East Afr . *Med.j.* ,70 :588-592 .
- . (2006) : - 21
- 22-Bunyan,J.; I. Jeffries; J. R. sayers; A. L. Culliver and K. Coleman. (1977). Antimicrobial substance and chick growth:the groth-promoting including 52 antibiotics used either in therapy or as dietary additives. *Br. Poultry secince .*, 18: 283-294.
- 23-Wallace, H. D. (1970):Biological responses to antibacterial. food addittives in diets of meat producing animals. *J. Ani. sci.*,31:1118-1125.
- . (1989) - 24
- .(2004) -25
- 26 -Krishnakantha , T. p . and Lokesh , B . R . (1993) . Scavenging Superoxide Anions by Spice principles . *Indian j . Biochem and Biophysics .*,30 (2) : 133-4.
- 27-Ahmed , R.S .; Seth , v ; pasha , S .T and Banerjee , B.D . (2006) . Influence of Dietary Ginger (zingiber officinales Roscoe) on Oxidative stress Induced by malathion in RATS . *Food and Chem. Toxicol .*,38(5):443-50.
- 28 -Nantz , M .P . ; Row , C . A . ; Nieves , . J r . and pereival , S.S . (2006) . Immunity and Antioxidant Capacity in Human is Enhanced By Consumption of a Dried Encap sulated Fruit and Vegetable Juice Concentration , *J. Natr .* , 136(10) : 2606 – 10 .
- 29- Vanaclocha, A. and Canigueral, S. (2003) *Fitoterapia :Vademecum dePrescription 4a Edicion .* Barcelona : Masson . , P p :310 -311.
- 30- Foster, S. and Yue, C.X. (1992). *Herbal emissaries:bringing Chinese Herbs to the west Rochester,Vt:Healing artspress.*