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ORIGINAL ARTICLE

RESPONSE OF CHICKS FOR DIET CONTAINING LIVE YEAST AS PROBIOTIC NATURAL FEED ADDITIVE

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ABSTACT: This experiment was conducted to study the effect of feeding chicks on diets containing different levels of life Yeast Saccharomyces cerervisiae as probiotic natural feed additive in productive performance carcass dressing percentage. The Complete Randomize Design (CRD) were used .Total number of (120) chicks one day old unsexed (Arber Acres) breed broiler .Experiment groups randomly were divided in to (5) experimental groups with (3) replicates (8) chicks per replicate. The first group (A) fed on basal diet control group. The second group (B) fed on basal diet with Antibiotic (neomycin), the other group (C, D and, E) were ted on basal diet supplemented with yeast (Sc) pl level 0.1 0.2and 0.3% respectively. The results of experiment indicate that yeast supplemented groups (0.1, 0.2 and 0.3). They remark that significant difference (p> 0.05) in body weight gain (B.W) feed conversion ratio (FCR) in compare with antibiotic neomycin and control group. There is no significant difference in feed intake and carcass dressing percentage affected by dietary treatment is it concluded that dietary DY at 0.3% could improve performance values in body weight gain feed conversion, and highly rate of carcass dressing.
KEYWORD: Yeast, Body weight gain, Feed Conversion rate, Carcass dressing.

INTRODUCTION

Saccharomyas Cercerisiae (Sc), which is one of the most widely commercialized types of yeast, has long been fed to animal. Results of previous studies with yeast fed to chickens however have not been consistent. It has been reiterated (Bonomi and Vassia, 1978; Ignacio, 1995; Onifade *et al.,* 1998) that feeding yeast to chicks improves body weight (BW) gain and feed conversion ratio. On the other hand, Madriqal *et al.,* (1993) failed to observe a positive result of feeding yeast on BW on broiler chicks. Kanat and Calialar, (1996) reported that active dry yeast effectively increases BW gains without affecting feed conversion ratio. Contrast supplementation of yeast to broiler diets improves feed/again ratio but not growth rates (Onifade *et al.,* 1999). Recently it has been reported that yeast could be an alternative to antibiotic based drugs in feeding broiler chicks (Hooge *et al.,* 2003) or on recycled litter (Stanley *et al.,* 2004). It well documented that antibiotic have beneficial effect on animal growth performance and health. However, increasing concerns regarding over-use of antibiotics has promoted extensive investigations into alternative to use the Sub-therapeutic antibiotics in production yeast (Gao *et al.,* 2008). The antibiotic in continued use tends to stimulate development of resistance from harmful microorganism. There is currently an outcry from the consumer society and health sector to ban their use as feed additives in animal and poultry feeds (Cavazzoni *et al.,* 1998). Over the last several years considerable attention has been given to use of probiotics. Most interests have been generated because of increased public awareness and objection to use antibiotic as growth promoter (Al-Homidan and Fahmy, 2007). The mode of action of yeast products is yet needed to be clarified. Some studies have confirmed the effect of yeast culture (YC) in increasing concentrations of commercial microbes or suppressing pathogenic bacteria (Stanley *et al.,* 2004). The Objectives behind this study to evaluate the effect of supplementing different level of dry yeast diet as a natural feed additive; 0.1,0.2,0.3% in comparison with antibiotic and control group (un treated) on the growth performance of broilers chicken.

MATERIALS AND METHODS

The total number of 120 one day old unsexed Arber acres broiler Chick, with average of 40 grams was subject to 41 day experimental period. They were kept 5 days incubator for

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adaption. The chicks were randomly divided into (5) experimental groups with (3) replicates (8) chick replicates. The first group (A) fed on basal diet as control group (without treatment) the second group (B) fed on basal diet with antibiotic (neomycin) the main experimental groups (C, D and E) were fed on basal diet supplemented with yeast (SC) at level (0.1,0.2,0.3%) respectively. Based on a local vaccination program Chicks in all groups were vaccinated against Newcastle disease infections Bronchitis were done in hatchery ND+IB spray One day old and vaccinated against Gumbora disease (IBD) 78 at 12 day old. Vitamin ADEs were used in drinking water. During the experiment birds were weighed weekly and feed intake per pen was recorded the same time. The measured performance parameters' includes. Final body weight (g) body weight gain (g) feed intake feed conversion ratio and mortality rate. The data obtained were statistically analyzed by the completely randomized design (CRD) using SPPS, (2008) program by ANOVA.

RESULTS

The result obtained of experimental broiler chicks were shown on the table (1). Statistical analysis proved the existence of significant difference at ($p<0.05$) among all the treatment groups, in body weight gain and feed conversion ratio and final body weight gain. For feed intake there is no significant difference between groups. Broilers fed with different level of yeast diet, 0.1%, 0.2% and 0.3% respectively in comparison with basic control diet and neomycin show significant difference with among treatments. There was no significant change in the carcass dressing rate at ($p>0.05$). The supplement diet group yeast E, 0.3 % shows a very clearly significant different at ($p<0.05$) and recorded a highly carcass dressing rate.

Table 1: shows the effect of different level of life yeast (SC) supplement diet was used on broiler performance (body weight gain, feed conversion ratio and feed intake).

Items	Treatment groups					SE
	A	B	C	D	E	
Initial body weight (g) bird	124	124	124	124	124	
Final body weight (g) bird	1760	1822	1945	2026	2135	
Body weight gain (g) bird	1636a	1698ab	1830bc	1902cd	2011d	64.13
Feed conversion ratio	2.3a	2.2ab	2.1b	1.9cd	1.8d	5.96
Feed intake (g) bird	3773a	3720a	3784a	3788a	3784a	

The same letters refer to there was no significance different between the means at P> 0.05

A= control (-) without additive, **B**= control (+) neomycin, **C**= 0.1% Yeast (Sc), **D**= 0.2% Yeast (Sc), **E**= 0.3% Yeast (Sc), **NS**= Not Significant (P>0.05), **SE**= Standard Error.

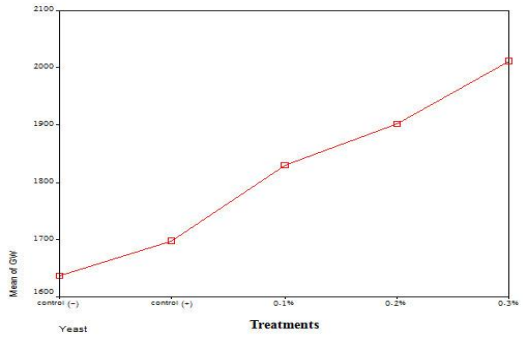

Figure 1: Body Weight Gain.

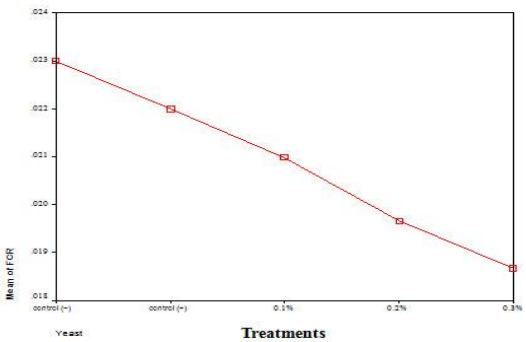

Figure 2: Average of Feed Conversion Ratio.

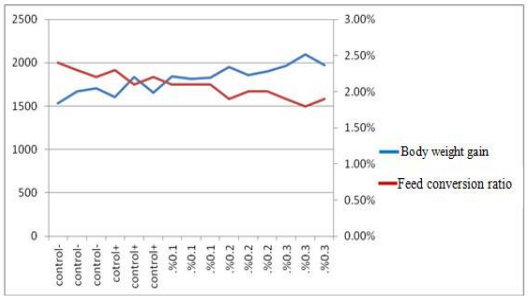

Figure 3: Body Weight gain and Feed Conversion Ratio.

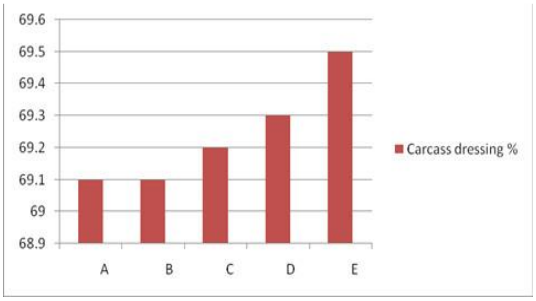

Figure 4: Carcass Dressing%. A: (control-), B: (Control+), C: (Yeast 0,1%), D: (Yeast 0, 2%), E: (Yeast 0, 3%)

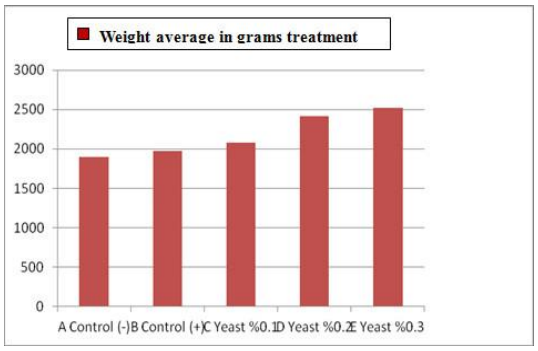

Figure 5: Weight average in grams treatments

DISCUSSION

Feed additives such as antibiotics and probiotics play important role in poultry industry. The continuous use of antibiotics tends to stimulate development of resistance from harmful micro-organisms hence the current outcry from consumer society and health sector to ban it use as feed additive in animal and poultry feeds (Cavazzoni *et al.*, 1998). Consequently there exists the need to replace antibiotics with probiotics. Probiotic is a microbe organism used as additive to diet in order to improve the performance of beneficial microbes in the gut of animal or birds. The result of our study shows that when different levels of yeast (Saccharomyces Cerevisiae) was applied as feed additives as a natural alternative to antibiotics on 35 days old chicks, there was significant difference in the body weight gain and feed conversion at 0.1%, 0.2 % and 0.3% levels of yeast concentrations applied. This is consistent with similar reports by (Cross, 2002). The feed intake remains the same with no significant difference among the different treatment groups.

Several authors have indicated that the different results of using yeast as feed additive in broiler chicken depends on many factors like the physical state of yeast added into fed broiler chicks (dry, wet and fermented yeast), applied methods in feed or drinking water, age of birds and level of biosecurity (Perreten, 2003; Stanly, 2004; Gao *et al.*, 2008). In our study, there was no significant change in carcass dressing when using yeast in broiler feed. This is consistent with published results from (Abaza *et al.*, 2008). During experimental period, the birds did not record any cases of mortality due to high biosecurity applied. On the other hand, yeast as probiotic stimulates a protective immune response sufficient to enhance resistance to microbial pathogens. The gut and its resident microbiota play an essential role in shaping the immune system of poultry (Noverr and Huffnagle, 2004). Germ-free animals have less developed gut–associated lymphoid tissue, but gut colonization in these animals by members of commensal gut microflora results in the enhancement and diversification of the antibody –mediated immune response. (Lee *et al.*, 2004) reported that probiotic treated birds had significantly more serum antibody than birds that were not treated with probiotics. Lutful Kabir, (2009) noted the action of dry yeast in poultry includes(1)maintain normal intestinal microform by competitive exclusion and antagonism (2) altering metabolism by increasing bacterial enzyme activity and ammonia production (3) improving digestion (4) stimulating the immune system. Table show that effect of different level of life yeast (SC) supplement diet was used on broiler performance (body weight gain, feed conversion ratio and feed intake).

CONCLUSION AND RECOMMENDATIONS

The results of this investigation showed that addition of live yeast to feed a broiler improved body weight gain and feed conversion ratio and there no mortality rate during experimental period. There was no significant difference in feed intake at different levels of yeast. The carcass dressing rates were not affected by using various levels of yeast in feed. The feeding of Yeast at level 0.3% results in highest body weight gain. The study confirmed that economic benefit of using the live yeast as additive to broiler feed by reducing the period of raring from 45-35 days which beneficial economics cost.

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