

EFFECT OF USING BARLEY TREATED WITH DIFFERENT LEVELS OF B-GLUKINASE ENZYME ON PRODUCTIVE PERFORMANCE OF HYBRID BROILERS

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Abstract

This experiment was implemented on 207 of hybrid broiler (Ross₃₀₈, Cobb₅₀₀) in order to know effects of hybrid and deferent levels of B-Gluganes enzyme was adding to barley (0,50,100 gm/km ration) with three replicates such every treatment. The statistical analyses appeared significant differences ($P \leq 0.05$) on live weight and average weight gains at age (4-5) weeks between two hybrid broilers. The results were in favor of Ross₃₀₈ hybrid. As for B-Gluganes enzyme was cleared significant differences ($P \leq 0.05$) at age of (3-5) weeks for bwt which was in favor of the bird treatment (100gm, b- gluganes enzyme) and average of weight gains at age of (1-3), (4-5), (1-5) weeks. The third treatment was superior significant on average of weight gains than for first and second treatments. Alsobwt, we noticed significant differences ($P \leq 0.05$) on average of feed consumption and feed conversion among treatments. This results observed was decrease significant on average of feed intake and was favorite of feed conversion. As for dressing percentage was significant increase for third treatment than for other treatments. As for interaction between hybrid and adding b- gluganes enzyme were appeared significant differences ($P \leq 0.05$) on total weight gains at age of (3-5) weeks and average of weight gains at age of (1-3), (4-5), (1-5) weeks. While for feed consumption, feed conversion and netting percentage were significant differences ($P \leq 0.05$) among treatments. Conclusion for this study that Ross₃₀₈ hybrid of third treatment (100gm b-glukinase enzyme) was superior significant ($P \leq 0.05$) on productive performance than other treatments.

Keywords: barley, B-glukinase enzyme, productive performance

Introduction

The poultry meat is source of animal protein on human nutrition. As far as the breeding and improvement in Iraq was contribute to poultry manufacturing through to get genetic structure hybrid with specialized for meat production which to requirements of local international poultry markets. In order to get tradition of poultry hybrid to mixed selective lines with production traits for to product genetic tradition which was superior significant in productive performance with best economic income. The reason for this to hybrid force (1981, Sheriden). The International companies were to benefit production for tradition of hybrid with first digree. Linctal (1980) was mentioned significant differences in live bwt between birds strains and hybrids to due to this differences to the ability of bird for growth rate and precipitation of protein and fats in body tissues of birds strains compared with other strains. Flayyih (2011) observed significant differences ($P \leq 0.05$) in averages of live total weight gains and feed consumption which was superior in favor of Ross₃₀₈ hybrid than Cobb₅₀₀ by using different levels of methionine acid (0,10,20). Also Alkassab et. al., (2013)

noticed significant superior (Ross₃₀₈, Cobb₅₀₀) compared to hybrid in on live bwt average of weight gains and feed conversion traits by using three hybrids of broiler (hybburd, Ross₃₀₈, Cobb₅₀₀) were feeding on rations had contained a source of animal or plant protein. While Nasar,(2017) was mentioned deferent significant differences on average of live bwt of Ross308 hybrid this is one hand ,and another hand didn't found any significant differences of hybrid on amount and percentage of water , feed consumption during this studied for effect of hybrid and season and level of vitamin C (ascorbic acid) some of characteristics of physiological and carcass and growth of boiler. Flayyih (2019) was founded no significant differences of all studied traits (live bwt,average of weight gains ,feed consumption ,dressing and mortality percentage) between two hybrid (Ross₃₀₈, Cobb₅₀₀) with adding different levels bakery yeast (0,0.30,0.60%) for feeding of two broiler hybrid . As for as the poultry industry which witness big developing and effective on productive improvement through micro parameters manufacturing rations in order to daily requirements of birds Gonzalez (2001), AL-Senjery (1995). Some sources was mentioned (Civilian dialogue 2006) was using of cereals in poultry rations. And adding b-glukinase enzyme to reduces viscosity of food substances in digestion duct which resulted by adding of enzyme in ration to improve growth bird which resulting improvement of digestion and absorption of digestion ducts of bird . some studies observed (Café 2006, Rajesh et.al.,2006) .Were adding of xylanase and glukinase enzyme in fattening rations of broilers.Which leads to improving of crude fiber as a source of energy by brocken binds of arabinoxylanase and glukinase.Were compenants of fiber crude and absorption of nutrient elements and improving benefits of ratione components.Ibrahim and Ruwaida (2011) observed supplementation of different levels (0,30,60%) of b-glukinase enzyme of laying hens ration. This experiment was appeared significant increased ($P \leq 0.05$) on percent of eggs production (H.D%) and eggs weight and egg mass of laying hens and feed conversion for 30% of barley with treated by b-glukinase enzyme compared to control treatment. Sun et.al.,(2019) was found significant improving on total gains weight and feed conversion was in favor of treatments was adding b-gluganase enzymes with supplementation within adding different levels of b-glukinase enzymes of broiler diets. Ding et, al.,(2019) was founded was adding significant improving of b-glukinase in ration on averages of live bwt, amount of feed consumption ,weight gains and feed conversion in favor of hybrid breed of broilers which were consumed the ration have containing b-glukinase enzyme if adding of b-glukinase enzyme than for control treatment.This study aimed compared between two hybrids of broilers (Cobb₅₀₀,Ross₃₀₈) and knowledge effects of addition different levels of b-glukinase to barley in feeding of broilers and its effects on productive performance.

Materials and Methods :

This experiment was conducted on 270 of broiler with two hybrid (Cobb₅₀₀,Ross₃₀₈) with age of one day. This hybrids was breeding in poultry hall which belongs to animal field department of animal production ,college of agriculture and forestry University of Mosul since for 35days This broiler birds was distributed randomly into three treatment with average three replicates each for all treatment and all hybrid and each of replicate containing 15 broiler .by adding of three levels b-glukinase enzyme to barely (0,50,100 gm/kg) than for control treatment . The program of

production of birds agents diseases and doses of injections and essential vitamins . As for as cleaning of birds brans and its sterilization before breeding of birds .As for feeding program which were feeding on two rations the first called starter ration which had containing 23.6% crude protein and 2940 kcal /kg of metabolize energy since for feeding through 1-21days (table 1). The second ration was called finisher ration was introduced from birds since for 22-35 days of broiler ages which had containing (20,6%) crude protein and metabolize energy 3032 kcal/kg of ration (table 1).

Table 1. Components of starter and finisher rations and chemical composition for fattening of hybrid chicks (ross308,cobb500).

| Feedstuffs | Starting bush (1-21) days | Final bush (22-35)days |
|---|---------------------------|------------------------|
| 1.yallo corn. | 32 | 40 |
| 2.soybean meal | 29 | 23 |
| 3.wheat. | 28 | 28 |
| 4.Protein concentration. | 8 | 6 |
| 5.Sun flower oil. | 2 | 2 |
| 6.limeston. | 0.50 | 0.50 |
| 7.vitamins and minerals. | 0.25 | 0.25 |
| 8.salts. | 0.25 | 0.25 |
| Total | 100 | 100 |
| Chemical composition (%) | | |
| 1.Meatabolize Energy (K _{cal}). | 2940 | 3032 |
| 2.Crude protein. | 23.06 | 20.06 |
| 3.Percent of Energy to crude protein. | 127.5 | 151.1 |
| 4.ether extract. | 4.47 | 4.64 |
| 5.Crude fiber. | 3.77 | 3.48 |
| 6.Lysine. | 1.22 | 1.04 |
| 7.Methionine. | 0.51 | 0.43 |
| 8.Calcium. | 0.90 | 0.69 |
| 9.Provision phosphor. | 0.43 | 0.34 |

Take into consideration of this ration to fill requirements of birds from protein and energy (N.R.C,1994). And the water for ages was feeding add libitum provision each three times. The broiler was daily individual weighting from one day age in start of experiment and continuous process of broilers during final experiment (5weeks). Through this study was recording data for weight gains ,feed intake ,feed conversion and mortality percentage for each replicates of treatments. The data was analyzed according factorial experimental by using of completed Randomize Design (CRD) (Al-Rawi and Khalafallah,2000) and applying SAS program (SAS

,2012) to knowledge different significant within traits mean among treatments by using Duncan test (Duncan , 1955) .

Results and Discussion :

From the Results (table 2) was observed was high home in live bwtat one day age of three treatment . The statistical analysis of results was relieved no significant differences on bwtat one day of age (hatching) between two hybrids (Cobb₅₀₀,Ross₃₀₈) . Another beside there were significant difference ($p \leq 0.05$) between two hybrids on live bwtat ages of (3-5) weeks to due to genetics treatments for each hybrids and traits were chosen this results was agree with Al-Naemi,(2007) who was noticed significant differences on live bode weight during his study to compared of productive performance and hybrids of broiler chicks (Cobb₅₀₀,Ross₃₀₈). This results was differ with results of Saki 2007 Flayyih 2011, Al-Kassab et. al.,2013.and Flayyih 2019 whome they were noticed no significant differences on live body weight. More ever we noticed significant improvement in favor of third treatments (100gm b-glukinase enzyme / kg dite) on average of live bwtfor (3-5) weeks that compared to control treatment and (50 gm b-glukinase enzyme/kg dite). Which due to superior of third treatment than first and second treatment for activation of b-glukinasee enzyme to broken of glycosidic bonds of beta glucagon substances was physical impediment to benefit of grain endosperm starch for bearylly (Mohamad,2000). Finally which leads to high nutrient value of bearylly (Graham , pettersson 1992). This results was agree with Ding, et. al.,(2019) and Zhang et. al.,(2020) were founded significant improvement on average of live bwtthrough using of different levels (0, 100, 200 gm/ton diet) of beta glukinase enzyme for fattening of broiler chicks (Ross₃₀₈) for period for 35 days .While this result do not agree for results of Makawi (2009) who did not observed any significant differences of addition effect of adding commercial xylem enzyme in the diet on live bwt(Ross₃₀₈) of broiler chicks within using different levels of commercial (0.500g/ton diet) through period of 6 weeks. Also, this result was not agree with noticed of Kovitvadhi et. al.,(2019) which they were mentioned not any significant effects on final weight of broiler with adding different levels (control,low,high) of beta_ glukinase enzyme.

Table 2. Comparison between hybrids and addition of B-glukinase enzyme and interaction between them on live weight of broilers .

| Treatments | | Live bwt(gm/bird) | | |
|--|-------|---------------------------|----------------------------|-----------------------------|
| Effect of hybrid | | 1 day | 3 weeks | 5 weeks |
| Ross ₃₀₈ | | 41.22 ^a ± 0.40 | 816.77 ^a ± 6.37 | 2029.33 ^a ± 9.92 |
| Cobb ₅₀₀ | | 40.44 ^b ± 0.37 | 807.22 ^b ± 2.93 | 2012.56 ^b ± 5.78 |
| Effect of adding of B-glukinase enzyme | | | | |
| 0 gm | | 40.67 ^b ± 0.65 | 811.67 ^b ± 2.72 | 2020.33 ^b ± 3.49 |
| 50 gm | | 41.33 ^a ± 0.49 | 797.17 ^b ± 2.27 | 1995.17 ^b ± 1.95 |
| 100 gm | | 40.50 ^b ± 0.42 | 827.17 ^a ± 5.39 | 2047.33 ^a ± 5.06 |
| Interaction between hygiene and adding of B-glukinase enzyme | | | | |
| Ross ₃₀₈ | 0 gm | 40.66 ^b ± 0.88 | 815.66 ^b ± 3.52 | 2026.33 ^b ± 3.17 |
| | 50 gm | 42.33 ^a ± 0.33 | 796.34 ^b ± 4.33 | 1998.10 ^b ± 2.30 |

| | | | | |
|---------------------|--------|---------------------------|----------------------------|-----------------------------|
| | 100 gm | 40.66 ^b ± 0.33 | 838.34 ^a ± 3.71 | 2063.68 ^a ± 9.06 |
| Cobb ₅₀₀ | 0 gm | 40.67 ^a ±0.31 | 807.68 ^b ±2.96 | 2014.34 ^b ± 3.84 |
| | 50 gm | 40.34 ^a ± 2.51 | 798.68 ^b ± 2.51 | 1992.35 ^b ± 2.40 |
| | 100 gm | 40.33 ^a ±0.81 | 816.02 ^a ±2.64 | 2030.02 ^a ± 2.30 |

The averages of traits that carried out different letters vertically indicates significant differences at probability level 0.05 .

This result (table 2) relieved that hybrid (Ross₃₀₈ ,Cobb₅₀₀) with 100gm .of enzyme was superior significant ($P \leq 0.05$) on bwt than other treatment at (3-5) weeks of ages .This results may be due to combination effect of hybrid and enzyme on average of bwt of broilers. As far as the result of hybrid was indicated significant effect ($P \leq 0.05$) at (1-3) which in favor of hybrid (Ross₃₀₈) also may be reflected for bwt. This result was agree with Al-Naeemi (2007) and Flayyih (2019) whome noticed significant effect of interaction between level of adding dried bread yeast and hybrid (Ross₃₀₈ ,Cobb₅₀₀) As for of enzyme effect it noticed third treatment (100gm beta glukinase/ kg diet) which resulted favorite of weekly weight gains through period of (1-3) ,(4-5) and (1-5) weeks than other treatment (table3). The bwt was reached (786.34,1220.17, 2006.17) gm respectively . This result may be due to ability of enzyme broken arabinozylas and complex glukinase bonds that were founded as high percentage in wheat grains soybean bearly and corn that leads to eliminate of negative of nutrient effect and finally reflected on total weight gains (Huisman 2000, Rajesh et. al., 2006). As well as this study was agree with results were founded with Ding at. el.,(2019), Zhang at.el., (2020) were noticed significant improvement on total weight gains of broiler. This result was in favor of adding enzymes to their treatment. Another beside this result were not accepted with results of Al-Maakwi, (2009), Moon (2016) ,Kovitvadhi et.al., (2019) whome they were no founded any significant on total weight gains. Also, this result didn't accepted with results of Sun et.al.,(2018) whom founded calculated improvement with no significant differences on bwt of broiler(Ross₃₀₈) when they were adding different levels of beta –glukinase enzyme (600,1200 , 1800 ppm) in fattening ration of broiler for period 35 days . On the other hand the results to Karunaratne et .al., (2020) was not accepted with the current study whom they relieved no significant of adding different levels of b-glukinase enzyme in hulled barley of fattening broiler when they were using different levels of b- glukinase enzyme (0,0.01,0.1%) in fattening rations of broiler for 32days. Moreover this result didn't agree with results of Karunaratne et. al.,(2021) was indicated no significant of adding different levels of b-glukinase enzyme hulled barley during his using two different levels of beta glukinase (0.01%) in fattening rations of broiler with 32 days period on total weight gains of birds which consumed on ration that contained different levels of beta glukinase enzyme. As about of interaction we notice that hybrid (Ross₃₀₈) with 100gm beta glukinase enzyme/kg feed was superior significant ($P \leq 0.05$) for all treatment at ages of (1-3),(4-5),(1-5) weeks.

Table 3. Comparison between hybrids and addition of B-glukinase enzyme and interaction between them on average of weight gains .

| Treatments | Average of weight gains (gm/bird) | | |
|------------------|-----------------------------------|-----------|-----------|
| Effect of hybrid | 1-3 weeks | 4-5 weeks | 1-5 weeks |

| | | | | |
|---|----------------------------|-----------------------------|------------------------------|------------------------------|
| Ross ₃₀₈ | 775.33 ^a ± 6.42 | 1208.67 ± 10.78 | 1977.78 ± 14.14 | |
| Cobb ₅₀₀ | 766.78 ^b ± 2.97 | 1205.33 ± 3.78 | 1972.11 ± 5.70 | |
| Effect of adding of B-glukinase enzyme | | | | |
| 0 gm | 771.00 ^b ± 2.65 | 1194.33 ± 14.60 | 1966.33 ± 13.62 | |
| 50 gm | 755.84 ^c ± 2.38 | 1198.00 ^b ± 3.78 | 1952.33 ± 1.20 | |
| 100 gm | 786.34 ^a ± 5.06 | 1220.17 ^a ± 3.45 | 2006.17 ± 7.92 | |
| Interaction between hybride and adding of B-glukinase enzyme | | | | |
| Ross ₃₀₈ | 0 gm | 775.00 ^b ± 2.12 | 1184.02 ^c ± 30.04 | 1959.02 ^b ± 29.05 |
| | 50 gm | 754.09 ^c ± 4.04 | 1201.69 ^b ± 5.89 | 1952.60 ^c ± 1.67 |
| | 100 gm | 797.03 ^a ± 3.21 | 1225.32 ^a ± 5.36 | 2021.63 ^a ± 8.40 |
| Cobb ₅₀₀ | 0 gm | 767.01 ^b ± 3.51 | 1206.63 ^b ± 5.92 | 1973.60 ^b ± 2.96 |
| | 50 gm | 757.67 ^c ± 2.84 | 1194.32 ^c ± 4.84 | 1952.02 ^c ± 2.08 |
| | 100 gm | 775.62 ^a ± 2.02 | 1215.02 ^a ± 2.08 | 1990.67 ^b ± 1.45 |

The averages of traits that carried out different letters vertically indicates significant differences at probability level 0.05

This results appeared in table (4) that average of feed consumption was lesser significant at age of (4-5) weeks of hybrid (Ross₃₀₈) than for hybrid (Cobb₅₀₀). This different was escaped quickly on (1-5) weeks period .While no noticed significant difference between two hybrids at ages of (1-3),(1-5) weeks. This results was considered with founded of Saki et. al.,(2010) and Falaih,(2011) whom noticed that average of daily feed consumption was not any significant levels between two hybrids (Ross₃₀₈ , Cobb₅₀₀). As about of result that effects of b- glukinase enzyme (table 4) indicates of weekly feed consumption at ages of (1-3),(3-5) ,(1-5)weeks was lesser consumption in the third treatment which confined 100gm of b- glukinase enzyme/kg diet compared to the first and second treatment. This depression in amount of feed intake by birds because to increase of specific energy of this ration which resulted for broken of poly saccharides without contain starch was founded of cells walls of cereals were used in this ration in by enzymes (Rajesh et.al., 2006) and Pourreza et .al., (2007).As far as this result was considered with result of Kovitvadhii et.al., (2019) and Karunaratne et .al., (2020) whom noticed these birds were lesser consumption of birds that content enzyme in diet compared to control feed .While this result was differ with result of Makawi,(2009) and Ibrahim and Younis,(2011) and Moon (2016) and Ding et. al.,(2019) Karunaratne et .al.,(2021) which they were indicated no significant difference between control treatment and adding of enzyme treatment. As about between hybrid (Ross₃₀₈) and third treatment (100gm of b-glukinase enzyme), hybrid (Cobb₅₀₀) were lesser forage consumption than other interaction between two hybrids and adding enzyme treatment which may be due to genetic ability effects for every hybrid on growth speed which leads to consumption feed with proportional with requirements of all brids .As for food conversion the result observed no significant difference between two hybrids at ages of (1-3),(4-5) and (1-5) weeks. This results was agree with founded

Flayyih,(2011) and Flayyih (2019) whom they were releaved no significant effect of hybrid on food conversion trait .Also this result significantly superior in favor of third treatment that consumed (100gm b- glukinase enzyme /kg diet) on feed conversion at age of (1-3),(4-5) weeks compared with other treatment. From the result that improvement on feed conversion with high level of enzyme which due to microbial fermentation of absorption of votile fatty acids (Choct et ,al., 1995) and because the enzyme activity broken arabinose compounds complex and limited against activity (Rajesh et, al.,(2006).This result was accepted with result of Ibrahim and Younis (2011),Sun et. al.,(2018),Ding et. .al.,(2019),Zhang et. al.,(2020) whom they were founded significant improvement on food conversion in favor of adding enzymes treatment compared to the control treatment (no adding of enzyme). While this result was not accepted with results of Makawi (2009) Kovitvadhi et.al., (2021).

Table 4.Effect of hybrids and addition of B-glukinase enzyme and interaction between them on weekly feed intake .

| Treatments | | Weekly feed intake (gm/bird) | | |
|--|--------|------------------------------|-----------------------------|------------------------------|
| Effect of hybrid | | 1-3 weeks | 4-5 weeks | 1-5 weeks |
| Ross ₃₀₈ | | 1034.00 ± 3.59 | 2137.56 ^b ± 2.85 | 3171.56 ± 5.79 |
| Cobb ₅₀₀ | | 1034.33 ± 3 .64 | 2144.67 ^a ± 3.32 | 3175.89 ± 8.71 |
| Effect of adding of B-glukinase enzyme | | | | |
| 0 gm | | 1040.00 ^a ± 5.30 | 2146.01 ^a ± 3.53 | 3183.02 ^a ± 8.13 |
| 50 gm | | 1037.34 ^a ± 2.36 | 2154.67 ^a ± 3.09 | 3183.03 ^a ± 3.73 |
| 100 gm | | 1025.17 ^b ± 2.03 | 2131.67 ^b ± 2.18 | 3152.17 ^b ± 7.41 |
| Interaction between hybride and adding of B-glukinase enzyme | | | | |
| Ross ₃₀₈ | 0 gm | 1037.33 ^a ± 10.17 | 2144.00 ^a ± 5.29 | 3181.341 ^a ± 5.10 |
| | 50 gm | 1036.67 ^a ± 4.80 | 2139.00 ^a ± 1.85 | 3157.32 ^a ± 3.51 |
| | 100 gm | 1028.00 ^b ± 1.54 | 2129.34 ^b ± 3.17 | 3157.32 ^b ± 2.02 |
| Cobb ₅₀₀ | 0 gm | 1042.67 ^a ± 5.45 | 2148.01 ^a ± 5.50 | 3190.66 ^a ± 9.02 |
| | 50 gm | 1038.02 ^a ± 2.08 | 2152.05 ^a ± 2.08 | 3190.00 ^a ± 2.81 |
| | 100 gm | 1022.34 ^b ± 3.38 | 2134.01 ^b ± 2.88 | 3147.03 ^b ± 15.6 |

The averages of traits that carried out different letters vertically indicates significant differences at probability level 0.05.

Also this results of interaction between hybrid and enzyme treatment was appeared significant superior on food conversion for hybrid (Ross₃₀₈, Cobb₅₀₀) with third treatment (100gm b- glukinase enzyme /kg diet) (table 5) than for interactions between hybrid and treatments at ages of (1-3),(4-5),(1-5) weeks which because that bird was consumed much amount of forages that resulted to increase for size and complete of skeleton which that become high limited of bwt, (Ibrahim 1987) , As for dressing and mortality percentages (table 6) the result was appeared that

hybrid didn't significant effect on averages on dressing and mortality percentage of broiler chicks. This result was relieved of Al Kassab, (2013) and Flayyih, (2019).

Table 5. Effect of hybrids and addition of B-glukinase enzyme and interaction between them on weekly feed conversion efficiency .

| Treatments | | feed conversion efficiency (kg feed intake / kg weight gain) | | |
|---|--------|--|---------------------------|---------------------------|
| Effect of hybrid | | 1 -3 week | 4-5 weeks | 1- 5 weeks |
| Ross308 | | 1.33 ± 0.013 | 1.76 ± .0.017 | 1.59 ± 0.014 |
| Cobb500 | | 1.34 ± 0.089 | 1.77 ± 0.008 | 1.62 ± 0.007 |
| Effect of adding of B-glukinase enzyme | | | | |
| 0 gm | | 1.34 ^b ± 0.009 | 1.76 ^b ± 0.007 | 1.61 ^b ± 0.01 |
| 50 gm | | 1.36 ^b ± 0.006 | 1.81 ^b ± 0.02 | 1.63 ^b ± 0.03 |
| 100 gm | | 1.29 ^a ± 0.008 | 1.74 ^a ± 0.006 | 1.58 ^a ± 0.015 |
| Interaction between hybrid and adding of B-glukinase enzyme | | | | |
| Ross308 | 0 gm | 1.34 ^b ± 0.014 | 1.76 ^b ± 0.0 | 1.61 ^b ± 0.03 |
| | 50 gm | 1.37 ^b ± 0.003 | 1.81 ^b ± 0.04 | 1.62 ^b ± 0.03 |
| | 100 gm | 1.28 ^a ± 0.06 | 1.73 ^a ± 0.08 | 1.55 ^a ± 0.006 |
| Cobb500 | 0 gm | 1.35 ^b ± 0.014 | 1.77 ^b ± 0.014 | 1.61 ^a ± 0.005 |
| | 50 gm | 1.36 ^b ± 0.015 | 1.80 ^b ± 0.010 | 1.63 ^b ± 0.003 |
| | 100 gm | 1.31 ^a ± 0.008 | 1.75 ^a ± 0.003 | 1.61 ^a ± 0.020 |

The averages of traits that carried out different letters vertically indicates significant differences at probability level 0.05.

Which they were no noticed significant difference on dressing and mortality percentages between hybrid treatments. Another beside showed significant increasing on dressing percentage in favor of third treatment when compared to the first and second treatment. It may be to do to the significant improvement of weight gains of hybrid which effected on dressing percentage. As well as this result was not agree of results Onilude et. al, (1999), Sarica et. al., (2005) they had got significant results of dressing percentage. While this result was not agree with results of Makawi, (2009) and Kovitvadhii et. al., (2019) which they not founded significant difference on dressing percentage. As far as mortality percentage was appeared no significant difference on mortality percentage between adding of enzyme of fattening rations of broiler hybrids, its confirmed of result was founded significant depression on mortality percentage of second and third treatments (50, 100 gm b-glukinase enzyme/kg) which may be due to this viscosity depression of digestion system and finally to reduce viscosity in broiler litter which leads to depression on litter moisture and reducing litter contamination by bacteria and microbes that leads to infection diseases that its role leads to improvement of public health of birds. This results was differ of Ding et, al., (2019) which they indicates that interaction between hybrid and adding enzyme leads to of significant effect on dressing percentage. The results was observed of table (6) that hybrids (Ross308, Cobb500) with third treatment (100gm b-glukinase enzyme/kg ration) which leads to high value because to the

genetic factors that owner of hybrid and role of enzyme for absorption of volatile fatty acids which helps to increase of carcass weight. As for mortality percentage the result was not significant effected between hybrid and adding of enzyme treatments .

Table 6. Effect of hybrids and addition of B-glukinase enzyme and interaction between them on dressing percentage and mortality percentage.

| Treatment | Dressing percentage | Mortality percentage | |
|--|---------------------------|---------------------------|---------------------------|
| Effect of hybrid | | | |
| Ross ₃₀₈ | 71.99 ^a ± 0.23 | 1.12 ^a ± 0.04 | |
| Cobb ₅₀₀ | 71.54 ^b ± 0.27 | 1.34 ^b ± 0.02 | |
| Effect of adding of B-glukinase enzyme | | | |
| 0 gm | 71.71 ^a ± 2.26 | 1.27 ^a ± 0.04 | |
| 50 gm | 71.1 ^b ± 0.28 | 1.21 ^b ± 0.07 | |
| 100 gm | 72.42 ^c ± 0.19 | 1.20 ^b ± 0.06 | |
| Interaction between hybrid and adding of B-glukinase enzyme | | | |
| Ross ₃₀₈ | 0 gm | 72.28 ^a ± 0.18 | 1.24 ^a ± 0.09 |
| | 50 gm | 71.32 ^b ± 0.39 | 1.06 ^b ± 0.026 |
| | 100 gm | 72.38 ^a ± 0.36 | 1.05 ^b ± 0.031 |
| Cobb ₅₀₀ | 0 gm | 71.13 ^b ± 0.04 | 1.30 ^b ± 0.04 |
| | 50 gm | 71.05 ^b ± 0.49 | 1.36 ^a ± 0.037 |
| | 100 gm | 72.46 ^a ± 0.20 | 1.36 ^a ± 0.020 |

The averages of traits that carried out different letters vertically indicates significant differences at probability level 0.05 .

Conclusion :-

We concluded of results of this study the favorite level of beta-glukinase enzyme was 100g/kg ration of fattening of broiler hybrids . Moreover ,showed superior significant on live bwt and daily weight gains amount of feed intake feed conversion dressing percentage when compared with two high levels (100 gm b- glukinase enzyme /kg) for the first and second treatment of broiler . We recommended to using of (100gm b-glukinase enzyme /kg ration) of fattening.

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