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Effect Of Some Dietary Factors On The Productive Performance And Body Composition Of Tilapia = (Nilotica (Oreochromis Niloticus	العنوان:
تأثير بعض العوامل الغذائية علي الكفاءة الانتاجية وتركيب الجسم في البلطي النيلي \	بيانات أخرى:
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This work was conducted to study the effect of dietary supplementation of phytase enzymes and diets containing distiller’s dried grains with solubles (DDGS) on the growth performance, some blood parameters, body composition, nutrient digestibility, immune response and economic efficiency of .Oreochromis niloticus ‘This work was performed in three experiments The first experiment: it was conducted to deal with the effects of dietary phytase supplementation, the used fish were allocated into 9 groups. Fish of 1st group were fed on basal diet without any phytase fortification (control group). Fish of groups 2, 3, 4 and	ملخص:

5 were fed on diets supplemented with Natuphose (phytase) at levels of 0.1, 0.15, 0.2 and 0.3 g/kg diet respectively. While fish of groups 6, 7, 8 and 9 were fed on diets supplemented with Feedophyt (phytase) at 0.1, 0.15, 0.2 and 0.3 g/kg diet, respectively

The second experiment: This work was performed to study the effects of dietary inclusion of DDGS which are used as replacement for yellow corn and SBM.

Fish of group 1 received basal diet without using of (control diet). Fish of group 2,3,4,5 received diets with DDGS at the rate 10, 20, 30 and 40% of the diet

The third experiment: This work was carried out to study the effect of diets containing DDGS and phytase supplementation on the production traits of fish pond.

Two experimental groups were allocated into two fish ponds. In 1st pond, fish received diet contained DDGS without phytase supplementation (control group).

Second fish pond was supplemented with diet that contained DDGS with phytase supplementation using Natuphose at 0.3 g /kg diet

:The obtained results can be summarized as follows

:A. First experiment

There was significant improvement in body weight and body weight gain in fish of group 5 which were fed on diet containing Natuphose at 0.3 g / kg diet. All groups fed phytase-supplemented diets showed insignificant difference in body weight and body weight gain when compared with those of the control

one

Significant increase in SGR was detected in fish of groups 8, 3, 4, 9 and 5 respectively, which were fed on Feedophyt 0.2, Natuphose 0.15, 2, Feedophyt 0.3 and Natuphose 0.3 g / kg diet, respectively when compared with those of the control group

Final body length was significantly improved in fish of group 5 which was fed on Natuphose at 0.3 g / kg diet when compared with those of the control

group. Other phytase supplemented groups showed numerical increase in body length than those of control one, except those of groups 2 and 6 which were fed on Natuphose and Feedophyt at 0.1 g / kg diet.

There was significant decrease in condition factor of fish in groups 4 and 6 which were fed Natuphose at 0.2 g and Feedophyt at 0.1 g / kg diet.

Final FCR was better in fish of group 5 which were fed on Natuphose at 0.3 g / kg diet, when compared with those of the control group. Other phytase supplemented groups showed better FCR than those of the control one, except those of groups 6 and 7 which were fed on Feedophyt at 0.1 g and 0.15 g / kg diet.

Fish of group 5 which were fed on Natuphose at 0.3 g / kg diet, showed significant improvement in total PER when compared with those of the control group.

Fish of groups 5 and 8 which were fed on diet supplemented with Natuphose at 0.3 g and Feedophyt at 0.2 g / kg diet, showed significant increase in WBCs count, when compared with those of the control group. Fish of the other treated groups showed insignificant difference in WBCs count when compared with those of the control group.

There was significant increase in phagocytic activity in fish of groups 5, 3 and 6 which were fed on diets supplemented with Natuphose at 0.3 and 0.2g / kg diet and Feedophyt at 0.1 g / kg diet respectively, when compared with those of the control group.

There was significant increase in Lymphocyte count in fish of groups 8, 5 and 4 respectively, which were fed on Feedophyt at 0.2, Natuphose at 0.3 and 0.2 g / kg respectively, when compared with those of the control group.

There was insignificant difference in RBCs count between fish of different experimental groups and

those of the control, except fish of groups 7 and 8 which were fed diet supplemented with Feedophyt at 0.15 and 0.2 g / kg diet respectively, showed significant decrease in RBCs count, when compared with those of the control group. Also, there was insignificant difference in HB% and PCV between fish of different experimental groups and those of the control, except fish of group 8 which fed diet supplemented with Feedophyt at 0.2 g / kg diet. There was significant difference in SGPT content ¹¹ in fish of group 4 which were fed on diets supplemented with Natuphose at 0.2 g / kg diet and group 9 which were fed on Feedophyt at 0.3 g / kg diet, respectively when compared with those of the control group. Concerning the effect of phytase supplementation on SGOT and Alkaline phosphatase levels, it was observed that there was insignificant difference between fish of all experimental groups and control one.

The results of proximate body composition ¹² showed decrease in moisture content and an increase in ether extract percentage with advanced age. There was an increase in body crude protein in all groups which were fed on diet supplemented with phytase, except group 2 which was fed on Natuphose at 0.1 g / kg diet. There was an increase in calcium and phosphorous contents than the initial values. Fish of group 5 which were fed basal diet supplemented with Natuphose at 0.3g / kg diet showed higher calcium and phosphorous content than those of the control group.

Nutrient retention data indicated that highest ¹³ retention of dry matter and crude protein of all phytase treated groups except those of group 2 and 6 which were fed on Natuphose and feedophyt at 0.1 g / kg diet respectively, when compared with the control group. Phosphorus retained increased groups 3, 5 and

8 which were fed diet supplemented with Natuphose at 0.15 and 0.3 g / kg diet and Feedophyt at 0.2 g / kg diet.

Fish of group 5 which were fed on diet supplemented with Natuphose at 0.3 g / kg diet showed highest value in ADCDM, ADCCP, ADCP, ADCCa and ADCMn, when compared with other phytase treated groups and the control one.

There was insignificant increase in Ab titer against *Streptococcus iniae* in all phytase treated groups, when compared with control group.

Concerning RLP, it found that all phytase treated groups showed high RLP.

The results of economic efficiency indicated that fish of group 5 was more efficient than those of the control group.

:B. Second experiment

There were significant improvement in body weight, body weight gain and total SGR in fish of groups 3, 5 and 4 which were fed diets containing DDGS at levels 20%, 40% and 30% respectively, when compared with those of the control group.

Concerning the increase in body length of fish it was 2.16, 1.82, 2.29, 2.69 and 2.18 Cm respectively, for groups which were fed on DDGS at levels 0, 10%, 20%, 30% and 40% respectively.

Fish of groups 4, 3 and 5 respectively, which were fed on DDGS at levels 30%, 20% and 40% respectively, showed significant improvement in final condition factor, when compared with those of the control one.

Average FCR were improved in fish of groups 4, 5 and 3 which were fed diets contained DDGS at levels 30%, 40% and 20% when compared with those of the control one.

Fish of groups 3, 5 and 4 which were fed on DDGS at levels 20%, 40% and 30%, showed significant

improvement in total PER, when compared with those .of the control group

Fish of groups 5 and 4 which were fed on diet that .⁷ contained DDGS at levels 40 and 30% of the diet appeared significant difference in WBCs count, when .compared with those of the control group

There was significant increase in Lymphocyte .⁸ count, PA and PI in fish of group 4 which were fed on diet contained DDGS at levels 30%, when compared .with those of the control group

There was insignificant difference in RBCs count, .⁹ HB% and PCV in fish of different experimental groups when compared with those of the control .group

There was significant increase in serum total .¹⁰ protein and serum globulin in fish of groups 3 and 4 respectively, which were fed on diet containing DDGS at levels 20 and 30% of diet respectively, when compared with those of the control group. There was significant increase in serum albumin in fish of group 4 which were fed on diet contained DDGS at levels 30% of diet, when compared with those of the control .group

There was insignificant difference in SGPT, .¹¹ SGOT, Alkaline phosphatase and creatinine percentage in fish of all experimental groups, when .compared with those of the control group

The results of body composition analysis showed .¹² no significance difference in body moisture, ether extract and ash contents among different DDGS treated groups. There was an increase in body crude protein in groups 3, 5 and 4 respectively, which were fed on diet containing DDGS at levels 20%, 40% and 30% respectively, when compared with those of .control group

Nutrient retention data indicated that highest .¹³ retention of dry matter and ether extract was recorded

in all treated groups, when compared with the control group. There was an increase in crude protein retention in groups 5, 3 and 4 respectively, which were fed on diets contained DDGS at levels 40, 20 and 30% of the diet respectively, when compared with those of the control group.

Fish of groups 2, 3 and 4 respectively which were fed diet contained DDGS at levels 10, 20 and 40% of the diet showed higher percentage of ADCDM, when compared with those of control group. Also, fish of groups 5, 2, 3 and 4 respectively, which were fed diet, contained DDGS at levels 40, 10, 20 and 30% of the diet showed higher percentage of ADCCP, when compared with fish of the control group.

There was numerical increase in Ab titer against *Streptococcus iniae* in all experimental groups, when compared with the control group. All fish of groups fed on diet containing DDGS had high RLP (100%), when compared with those that of control one.

Economic results indicated that Fish of groups 3, 5 and 4 which were fed diets contained DDGS at levels 20, 40 and 30% were more efficient than the control group.

C. Third experiment

There was significant improvement in body weight, total BWG and total SGR in fish of phytase treated group, when compared with those of the control one.

Final body length was insignificantly improved in fish of phytase treated group when compared with those of the control group. There was insignificant difference in condition factor between different treated groups all over the experimental period.

There was insignificant difference in condition factor in different treated groups all over the experimental period.

Total FCR was improved in fish group which were fed on Natuphose at 0.3 g / kg diet when compared

<p>.with those of the control group</p> <p>There was increase in total PER of phytase treated .⁷ group which was fed on Natuphose at 0.3 g / kg diet, .when compared with those of the control group</p> <p>Fish of group 2 which were fed on diet .⁸ supplemented with phytase Natuphose at 0.3 g / kg diet, showed increase in total fish yield and net fish yield kg/ Fadden, when compared with those of the .control group</p> <p>There was significant difference in WBCs count in .⁹ fish of the treated group which fed on diet supplemented with Natuphose at 0.3 g / kg diet, when compared with those of the control group. There was numerical increase in phagocytic activity of treated group which fed on diet supplemented with Natuphose at 0.3 g / kg diet when compared with .those of the control group</p> <p>There was insignificant increase in Lymphocyte .¹⁰ count in fish of treated group when compared with .those of the control group</p> <p>Phytase supplemented group showed that there .¹¹ was significant difference in RBCs count when compared with those the control one. There was insignificant difference in HB% and PCV between .fish treated group and those of control one</p> <p>The obtained data showed insignificant increase in .¹² serum total protein and globulin level between treated group and control one. There was insignificant decrease in liver enzymes (GPT, GOT and Alkaline phosphatase) and creatinine level in fish of phytase supplemented group which were fed on diets supplemented with Natuphose at 0.3 g / kg diet when .compared with those of the control group</p> <p>Obtained data regarding proximate body .¹³ composition showed that, there was an increase in body crude protein in treated group which fed on diet supplemented with phytase Natuphose at 0.3g / kg</p>	
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<p>diet. There was an increase in whole-body ash in treated group. Also, there was an increase in phosphorous than initial values and there was an increase in phosphorous level in treated group which was fed on diet supplemented with phytase Natuphose .than those of the control group value</p> <p>Nutrient retention data indicated that highest . ١٣ retention of dry matter, crude protein and ash in phytase treated group which fed on Natuphose at 0.3 g/ kg diet, when compared with the control group. Fish fed diet supplemented with Natuphose at 0.3 g / kg diet, showed high content of phosphorus retention than fish of the control group. Total phosphorus (mg /l) / pond, fish of control group showed higher value than those of phytase treated group. This indicates that phytase affect P availability in diet and reduce P .discharge in water</p> <p>All results indicated that fish of group 2 which . ١٤ were fed diets supplemented with Natuphose 0.3 g / kg diet showed better economic efficiency than the .control group</p>	
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