Research Paper

Genomic Analysis Reveals Strong Signatures of Selection in Guangxi Three-Yellow Chicken in China.


ABSTRACT: Much like other indigenous domesticated animals, Guangxi Three-yellow chickens (GX-TYC) in China have experienced strong selective pressure, and show specific phenotypic changes in physiology, morphology and behavior. To identify genomic footprints or selection signatures left by artificial selection during domestication of GX-TYC, the whole genomes of 12 GX-TYC hens were sequenced to execute selective sweep analyses and gene functional enrichment analysis (Gene Ontology and Kyoto Encyclopedia of Genes and Genome pathways). A total of 10.13 million single nucleotide polymorphisms and 842,236 insertion/deletion polymorphisms (Indels) were found. Forty-six windows showed a Z score of heterozygosity (ZHp) lower than -5, which potentially were considered to be positively selected regions. Gene annotation identified 55 genes in these regions. Selection signatures were found mainly on the SSC5, SSC8, SSC23 and SSCZ. GO and KEGG analyses revealed that these genes were related to growth, immune responses as well as carbohydrate, lipid and amino acid metabolisms. In addition, two genes, fructose-1,6-bisphosphatase 1 and fructose-1,6-bisphosphatase 2 were enriched into four signaling pathways, three of which are involved in carbohydrate metabolism and insulin signaling. SHC3, FANCC and PTCH1, in combination with FB1 and FBP2, were clustered together in a region of chromosome Z, and thus might have been selected together. The results have uncovered some genetic footprints of chicken domestication, providing not only an important resource for further improvements of fowl breeding, but also a useful framework for future studies on the genetics of domestic chickens as well as on the phenotypic variations and certain diseases of chickens.

Key words: Chicken; Selective sweeps; Single nucleotide polymorphism; Whole genome resequencing
The current study aimed to evaluate the effect of and alternative followed by sodium butyrate. Accordingly, it can be concluded that administration of sodium butyrate or yeast showed a significant improvement of final body weight (BW), body weight change, feed conversion ratio and production index from third to fifth weeks of age. Nevertheless, all treated groups showed an insignificant effect in feed intake, compared to control group. Furthermore, the dietary addition of 

carassus, Economic efficiency, Hubbard; Productive, Sodium Butyrate, Yeast.

Keywords: 

Auricularia auricula

ABSTRACT:

The physical performance of broiler chickens, with special attention to their economic efficiency. Therefore, 270 of one-day-old Hubbard broiler chickens were divided into 5 groups. The first group consisted of chickens treated with 0.3 g SC/kg, and the fifth group consisted of chickens treated with 0.3 g SB/kg. The obtained results showed that administration of sodium butyrate or yeast showed a significant reduction in egg production and that mushrooms crude extracts had no significant effects on the growth performance of broiler chickens.
The provision of 80 mg / 100 g fermented soy isoflavones (equivalent to the addition of 12%) in laying hens' feed will increase the content of isoflavones and egg yolks' high density Lipoprotein (HDL), and it will reduce egg yolks' Low-Density Lipoprotein (LDL).

Production Performances of Indonesian Native Rooster (Gallus gallus domesticus)

It has been concluded that the germinated mung bean sprout and acidifiers supplementation increases the production performance of Gallus gallus domesticus.

The tendency towards an improved feed conversion ratio was observed during the use of synbiotic (T4, 1.11%) fed germinated mung bean sprouts and acidifiers did not give any differences from DI, FCR, ADG, and BW of

In the second experiment, a total of 1500 one-day-old male Ross 308 broiler chickens were randomly assigned to 4 diet treatments; with 15 replicates per diet treatment, and 30 birds per replicate over a 42-day period.

Table 1. Body weight, feed intake and feed conversion of Indonesian Native Rooster (Gallus gallus domesticus) supplemented with germinated mung bean sprouts and acidifiers in the diet

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Feed Intake (g)</th>
<th>Final BW (g)</th>
<th>Feed Conversion (g/kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>T1</td>
<td>121.60</td>
<td>676.00</td>
<td>2.07±0.16</td>
</tr>
<tr>
<td>T2</td>
<td>121.60</td>
<td>676.00</td>
<td>2.07±0.16</td>
</tr>
<tr>
<td>T3</td>
<td>121.60</td>
<td>676.00</td>
<td>2.07±0.16</td>
</tr>
<tr>
<td>T4</td>
<td>121.60</td>
<td>676.00</td>
<td>2.07±0.16</td>
</tr>
</tbody>
</table>

Responses of Domyati Ducks to Different Dietary Levels of Coconut Oil

Egg number
Egg weight
Egg mass
Egg quality
Fertility
Hatchability

Mahlil Y, Husmaini, Warnita, Mirzah, Kobayashi M and Endo Mahata M. Physical treatment significantly increased anthocyanin content of dragon fruit peel. Furthermore, physical-biological, and each treatment was replicated 4 times. Variables measured were total anthocyanin content and scan electron microscope image of anthocyanin of dragon fruit peel in processing. The results indicated that treated dragon fruit peel with chemical, biological, and combination of physical-biological treatments revealed that control image was similar to physical treatment, and it was different from other treatments. The physical treatment was the best method to increase anthocyanin content and scan electron microscope image of anthocyanin of dragon fruit peel in semi-captive population of peacocks in southwestern Guatemala. Therefore, an exploratory serosurvey was conducted to determine the presence of antibodies to Avian Influenza (AI) and Newcastle Disease (ND) viruses in a semi-captive population of peacocks in southwestern Guatemala. Additionally, the circulation of antibodies against AI virus was investigated by Agar Gel Immunodiffusion Test. The pathologies were acute to subacute lesions with a prevalence of 86%, and the sub-chronic to chronic lesions with a prevalence of 41% for classical virulent IBD virus (IBDV) and 59% for very virulent IBDV (vvIBDV). Extensive studies have been conducted to investigate the continuous circulation of vvIBDV in commercial poultry farms in Morocco since 2013.

El-Kholy KH, Ghonim AIA, Ahmed MA, Gad HA, Ghazal MN, El-Aik MAA and Ali RAM. The purpose of present study was to know the effects of different processing of dragon fruit on its antioxidant potential. It was hypothesized that different processing methods might affect the antioxidant potential of dragon fruit peel. The results of this study suggested that it belonged to a group of very virulent strains. Phylogenetically, all the Moroccan vvIBDV field isolates were grouped in the same cluster with Malaysian and European vvIBDV isolates. This report demonstrated the continuous circulation of vvIBDV in commercial poultry farms in Morocco. The findings of the present study indicate that no virulent strains of AI or ND viruses were circulating in the investigated site.

**ABSTRACT:** Surveillance studies for Newcastle disease virus (NDV) are critical to monitor the potential spreading of these viruses among wild birds as well as domestic poultry. This study was conducted to determine the incidence of NDV in wild birds in Egypt in 2016. Out of 159 collected samples from eight different species of wild birds, six (3.77%) samples were positive for paramyxoviruses by semi-nested RT-PCR assay based on the RNA-dependent RNA polymerase gene. Of six positive samples, four NDVs were successfully isolated in 11-day-old specific-pathogen-free embryonated hens' eggs. Partial sequences of the fusion gene of the four isolates were amplified using RT-PCR. Phylogenetic analysis of partial sequences of RNA-dependent RNA polymerase gene and fusion genes indicated that the detected NDV viruses in wild birds in Egypt are related to class I NDVs strains. Four Egyptian NDV isolates from wild birds exhibited sequence motif of 111GERQER↓LVG119 at the cleavage site as lentogenic virus in wild birds. Continuous active surveillance may help better monitoring of NDVs circulating in wild birds before newly emerging viruses in domestic poultry.

**Keywords:** Egypt, Fusion protein, Newcastle disease virus, Wild birds


**ABSTRACT:** This study was conducted to determine the effects of *Bacillus subtilis* DSM 32315 probiotic and antibiotic enramycin in broiler chickens with *Clostridium perfringens* induced-Necrotic enteritis on cecal microbial populations, functional diversity, nutrients transporters and cytokines mRNA expression. Day-old broilers (n= 360), Arbor Acre were randomly assigned to three dietary treatments such as control, basal diet fed-group only; antibiotic, basal diet plus enramycin 5 mg/kg; and probiotic group, basal diet plus *Bacillus subtilis* 2 x10^9 CFU/g. Antibiotic and probiotic fed groups was challenged with *Clostridium perfringens* at day1, and from day 14 to day 21. The results of present study showed that broiler chickens supplemented with antibiotic and probiotic significantly exhibited higher abundance of gut beneficial bacteria at the 21 and 35 days of age, while upregulated the expression of anti-inflammatory cytokine enterleukin-10 and secretory immunoglobulin-A. Expression of proinflammatory cytokines interleukin-6 tumor necrosis factor alpha, and interferon gamma were downregulated. Nutrient transporters of Peptide transporter-1, L amino transporter-2 and Cationic amino acid transporter-2 were upregulated in supplemented groups. More so, glucose transporter-2 Sodium glucose transporter-1, Solute carrier family 3, member 1, carbohydrates and vitamin metabolism cofactor enriched in probiotic fed-group, while control group exhibited up-regulation in interleukin-6, tumor necrosis factor alpha, and interferon gamma. Overall, supplementation of *Bacillus subtilis* DSM 32315 reduced the negative impact of necrotic enteritis in broiler chickens, and enhanced the gut-microbial community.

**Keywords:** Antibiotic growth promoter, *Bacillus subtilis*, *Clostridium perfringens*, Immune response, probiotic