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 executed 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 antibiotic, polar and non-polar extracts, and biological additives on the growth performance of broiler chickens. The samples included 240 one-day-old Hubbard broiler chickens randomly divided into 8 dietary treatments. The obtained results showed 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 crude extracts as feed additives on the growth performance of broiler chickens. The samples were sprayed on laying hens that infected with red mite. The study aimed to evaluate the reducing sugars level, antioxidant IC₅₀, and the presence of these constituents of the two extracts. The lethal properties of the extracts were determined by contact toxicity. The results of experimental research revealed that mushrooms crude extracts had no significant effects on the growth performance of Auricularia auricula and revealed the constituents of the two extracts. The lethal properties of the extracts were determined by contact toxicity. The results of experimental research revealed that mushrooms crude extracts had no significant effects on the growth performance of Auricularia auricula and revealed the constituents of the two extracts. The lethal properties of the extracts were determined by contact toxicity. The results of experimental research revealed that mushrooms crude extracts had no significant effects on the growth performance of Auricularia auricula and revealed the constituents of the two extracts. The lethal properties of the extracts were determined by contact toxicity. The results of experimental research revealed that mushrooms crude extracts had no significant effects on the growth performance of Auricularia auricula and revealed the constituents of the two extracts. The lethal properties of the extracts were determined by contact toxicity. The results of experimental research revealed that mushrooms crude extracts had no significant effects on the growth performance of Auricularia auricula and revealed the constituents of the two extracts.
Production Performances of Indonesian Native Resister (Gallus gallus domesticus) Supplemented with Germinated Mung Bean Sprouts and Acidifiers in the Diet.

It has been concluded that the germinated mung bean sprout and acidifiers supplementation in the diet. A total of 24 roosters aged 12 months with an average weight of 1.93 kg were used. The research showed better overall production performances compared to the control group. The supplementation of mung bean sprouts and acidifiers did not give any differences from DI, FCR, ADG, and BW of the basic no supplement diet as a control group. The research was conducted as an 2 factorial randomized block design with different amounts of germinated mung bean sprouts (0%, 0.5%, 1%, 1.5%, and 2%) and acidifiers (0%, 0.4%, 0.80%, and 1.20%) as the research treatment. Each treatment was repeated 6 replicates per diet treatment and 30 birds per replicate over a 42-day period. The diet treatments included a control group diet based on corn-soybean without additives (T1), and the treatment diets with bacitracin (BMD 100 ppm, T2), colistin (10 ppm, T3), synbiotic (PoultryStar me, T4, 1.87), compared to the control group (T1, 1.93) during the entire trial period. The evaluated synbiotic could serve as an effective alternative to AGPs, and the supplementation levels of bacitracin and colistin were suggested. The feed conversion ratio (FCR) was calculated using the following formula:

\[ FCR = \frac{D}{W} \]

where:
- \( D \) is the feed intake (g)
- \( W \) is the body weight gain (g)

The results showed that the supplementation of the synbiotic in the diet increased the production performance of the roosters. The addition of acidifiers also improved the feed conversion ratio, with longer and higher supplement levels being suggested.

Production Performances of Indonesian Native Resister (Gallus gallus domesticus) Supplemented with Germinated Mung Bean Sprouts and Acidifiers in the Diet.

Synbiotics can serve as an effective alternative to AGPs, and the supplementation levels of bacitracin and colistin were suggested.

Probiotics and synbiotics have gained considerable interest in poultry feeding as an alternative to antibiotics due to antibiotic resistance concerns. The first crucial period. The synbiotic can serve this purpose without combining it with AGPs, such as bacitracin. There were no differences in body weight gain and average daily gain among the treatment groups. The CD8+ to CD4+ ratio reached 1.26±0.09, 1.52±0.25, and 1.56±0.23 in 20, 40, and 60-day-old chickens, respectively. The histological and cell parameters of the thymus in clinically healthy chickens were determined and analyzed. The morphofunctional studies of the thymus were performed to determine and analyze age-related changes in anatomical (absolute and relative thymus mass), morphological and immunohistochemical changes of the thymus in Haysex Brown cross chickens. The thymus mass increased proportionally with age up to 20 days of age, and there was a tendency of improvement in the feed conversion ratio during the age of 1-24 days, and throughout the experimental period. The evaluated synbiotic could serve as an effective alternative to AGPs, and the supplementation levels of bacitracin and colistin were suggested.

The Efficacy of Synbiotic Application in Broiler Chicken Diets, Alone or in Combination with Antibiotic Growth Promoters on Zootechnical Parameters.

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The Processing Effects of Anthocyanins Extracted from Dragon Fruit (Hylocereus polyrhizus) on Total Amount of Anthocyanins and SEM Image in Poultry Nutrition.

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ABSTRACT: The purpose of present study was to know the effects of different processing of dragon fruit peel on total amount of anthocyanins and SEM image in poultry diet. The experiment was performed in a completely randomized design with different treatments like untreated dragon fruit peel or control, physical, chemical, biological, and combination of physical-biological treatment. Each treatment was replicated 4 times. Variables measured were total amount of anthocyanin and anthocyanin image of dragon fruit peel. The results indicated that the physical treatment was the best method to increase anthocyanin significantly reduced anthocyanin content. The image of anthocyanin from each treated amount of anthocyanin and anthocyanin image of dragon fruit peel. The physical treatment was the best method to increase anthocyanin from dragon fruit peel with chemical, biological, and combination of physical-biological treatment. The image of anthocyanin from untreated dragon fruit peel or control did not change the image of anthocyanin from dragon fruit peel.

Keywords: Spectrophotometry, Physical, Chemical, Biological, Combination of physical-biological, Antioxidant, Anthocyanin, Anthocyanin image, Dragon fruit peel, Poultry diet.

Spectrophotometry was done to determine the total amount of anthocyanin in dragon fruit peel. The physical treatment was the best method to increase anthocyanin significantly reduced anthocyanin content. The image of anthocyanin from each treated amount of anthocyanin and anthocyanin image of dragon fruit peel. The physical treatment was the best method to increase anthocyanin from dragon fruit peel with chemical, biological, and combination of physical-biological treatment. The image of anthocyanin from untreated dragon fruit peel or control did not change the image of anthocyanin from dragon fruit peel.

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