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 Polar and nonpolar extract, and yeast as a probiotic, compared to sodium butyrate as an organic acid on the productive 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 included chickens receiving basal ration without any treatment (and considered as a control group). The second group was composed of chickens treated with 0.2 g SB/kg, the third group embraced chickens treated with 0.3 g SB/kg, the fourth group included chickens treated with 0.2 g SC/kg, and the fifth group consisted of chickens treated with 0.3 g SC/kg. 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 growth-promoting agents in the broiler chickens. Yeast can be considered as the most important alternative followed by sodium butyrate.


Ferula assafoetida

ABSTRACT: Dermanyssus gallinae is one of the most common arthropods in layers that affects the quality and quantity of egg production. Although there are different synthetic compounds and essential oils compounds and synthetic compounds in meat and eggs, this study indicated Ethanol extract of Ferula assafoetida could use as a substitute compound against red mite, makes that the use of alternative methods, as well as increased use of herbal extracts and plant-based products is necessary. The lethal properties of the extracts were determined by LC50 of Ethanol extract of Ferula assafoetida in vitro was 16 µg/cm², that revealed the constituents of the two extracts were the most available compounds of the Ethanol extract and N-hexan extract of Ferula assafoetida. In this field study, ethanolic extract of Ferula assafoetida was sprayed on laying hens that infected with red mite. This study indicated Ethanol extract of Ferula assafoetida against this mite, that could use as a substitute compound against red mite.
ABSTRACT: Production Performances of Indonesian Native Rooster (*Gallus gallus domesticus*) supplemented with Germinated Mung Bean Sprouts and Acidifiers in the Diet. The objective of the study was to evaluate the effects of supplementary germinated mung bean sprouts and acidifiers on the growth performance of Indonesian native rooster. The research was conducted as an alternative to antibiotics due to antibiotic resistance concerns. The experimental periods were 30 days. The control group (T0) was a basic diet supplemented with 48-hours germinated mung bean sprouts and acidifier, with a concentration of 0.5 kg/t, T4, T5, T6, and T7 were experimental groups supplemented with 0.5 kg/t, 0.5 kg/t plus Bacitracin (BMD 1000 ppm T4). Birds fed antibiotic or synbiotic alone or in a combination had numerically a higher body weight and an average daily gain than the control group. 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 antibiotics due to antibiotic resistance concerns. The best production performance of the treatments was found at 1.8% germinated mung bean sprouts and acidifiers in the diet.

Keywords: Gallus gallus domesticus, Native chicken, Poultry diet, Production performances

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The Processing Effects of Anthocyanins Extracted from Dragon Fruit (Hylocereus polyrhizus) 

Variables measured were total amount of anthocyanin and anthocyanin image of dragon fruit peel. The results indicated that from other treatments, the physical treatment was the best method to increase anthocyanin content, and did not change the image of anthocyanin from dragon fruit peel. 

ABSTRACT: 

The experiment was performed in a completely randomized design with different processing like untreated dragon fruit peel or control, physical, chemical, biological, and combination of physical-biological treatment. The processing methods used were chemical, biological, and each treatment was replicated 4 times. The results showed that the physical treatment significantly increased anthocyanin content of dragon fruit peel. Furthermore, the physical treatment was the best method to increase anthocyanin content, and 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