Functions of *Epimedium* on Regressed Oviduct and Follicles of Force Molted Layer Hens.

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**ABSTRACT**: In order to reveal the functions of *Epimedium* (EPI) on the recovery of the reproductive system of laying hens, 120 Hy-Line Brown laying hens (43-week-old) were forced molt through feed withdrawal for 14 days. After the molting period, layer hens were divided into four groups: Dark-control group in a dark environment without any treatment; dark-EPI group in a dark environment and with EPI treatment; light-control group without any treatment under normal illumination (16L: 8D); light- EPI group with EPI treatment under normal illumination (16L: 8D). EPI treatment was maintained for 15 days and each hen received 2 ml of EPI extract (1 g/mL) daily. The rate of egg production was calculated every day. At the end of the experiment, estrogen receptor alpha mRNA, estrogen receptor beta mRNA, and progesterone receptor mRNA in the albumen secreting part and uterus of the oviduct were detected by q-PCR, and the level of serum progesterone, estrogen and luteinizing hormone was measured by enzyme-linked immunosorbent assay. The results showed that EPI effectively improved the laying rate of hens both in dark groups and light groups by promoting the recovery of the oviduct and follicle maturation. In addition, EPI promoted the secretion of estrogen and progesterone both in dark and light groups and improved the expression of estrogen receptor alpha and progesterone receptor in the light group. The results of the experiment provide a good reference for using EPI to improve the development and recovery of the reproductive system of layer hens.

**Key words**: *Epimedium*, Forced molting, Layer hens, Oviduct

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**Table 2.** Frequency of positive samples to influenza A (H5N2 and H7N3) antibodies, *Salmonella* spp. and *Escherichia coli* in backyard poultry eggs in the El Grande market, Guatemala.

<table>
<thead>
<tr>
<th>Scientific name</th>
<th>H5N2 antibodies</th>
<th>H7N3 antibodies</th>
<th>H5N2</th>
<th>H7N3</th>
<th>Salmonella spp.</th>
<th>Escherichia coli</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gallus gallus</td>
<td>254</td>
<td>99</td>
<td>85</td>
<td>69</td>
<td>3</td>
<td>188</td>
</tr>
<tr>
<td>Anas platyrhynchos</td>
<td>57</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>2</td>
<td>48</td>
</tr>
<tr>
<td>Coturnix cucullata</td>
<td>29</td>
<td>1</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>25</td>
</tr>
<tr>
<td>Abdimis goliathus</td>
<td>30</td>
<td>0</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>25</td>
</tr>
<tr>
<td>Crotosus canitice</td>
<td>27</td>
<td>0</td>
<td>10</td>
<td>0</td>
<td>0</td>
<td>21</td>
</tr>
<tr>
<td>Total</td>
<td>357</td>
<td>101</td>
<td>101</td>
<td>62</td>
<td>3</td>
<td>388</td>
</tr>
</tbody>
</table>

*Intra-vaccinal: *H5N2 monoclonal, H7N3 (H5) monoclonal, C. egg-loops, W. Schnell C, Mugler E, Kappeler T, Hamborsky J and呼吁 (H7N3). *


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**Research Paper**

**Influenza A, and Salmonella spp. in Backyard Poultry Eggs in Guatemala City.**
Guerra-Centeno D, Díaz-Rodríguez M, Valdez-Sandoval C, Lepe-López M, Álvarez E, Aguilar Ch, Hernández C and Borja J.


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ABSTRACT: Influenza A and salmonellosis are two of the most relevant zoonotic infectious diseases. Influenza A is one of the main threats to public health worldwide and is considered one of the causative agents of pandemics. Salmonellosis, meanwhile, has been identified by the World Health Organization as one of the four main causes of diarrheal diseases in the world. Poultry is an important source of both influenza A and Salmonella spp. but little is known about these potential threats in poultry products in Guatemala. The presence of influenza A virus antibodies and Salmonella spp. was studied in backyard poultry eggs sold in the El Guarda market in Guatemala City. 377 backyard poultry eggs were collected throughout seven months and sampled for hemagglutination inhibition test to determine the presence of antibodies to influenza virus A (H5N2 and H7N3) and cultured for Salmonella isolation. The eggs of chicken (Gallus gallus), turkey (Meleagris gallopavo), quail (Coturnix coturnix), mallard duck (Anas platyrhynchos) and muscovy duck (Cairina moschata) were sampled. Twenty-six percent of the eggs carried H5N2 antibodies, 27% carried H7N3 antibodies and 1.3% carried Salmonella spp. The presence of Escherichia coli
inside the sampled eggs was an incidental common finding. These results suggest that backyard poultry eggs sold at markets could be a potential source of influenza A virus and Salmonella for the human population. The evidence found in the sampled eggs also shows that these potential pathogens are circulating in backyard poultry populations in Guatemala.

**Key words:** Food security, One Health, Public health, Zoonosis
ABSTRACT: In a 42-day feeding trial, the effect of L-Dopa on the performance, serum cholesterol and intestinal microbial load in laying hens were investigated. One hundred and twenty layers aged 34 weeks old were allocated to five dietary treatments with eight replicates and three birds per each replicate. The birds were fed diets supplemented with graded levels of L-Dopa (0, 0.1, 0.2, 0.3 and 0.4%) in a completely randomized design. Performance parameters were monitored. On the day 42, egg, meat and blood samples were obtained to determine total cholesterol and lipoproteins using standard procedures. The ileal digesta was collected for microbial analysis. The results indicated that inclusion of L-Dopa in the diet did not affect the performance parameters and egg cholesterol profile. Serum cholesterol levels of birds fed the control diet and those on 0.1% and 0.2% L-Dopa supplemented diets were similar, but significantly higher than those fed 0.3% and 0.4% L-Dopa. The levels of cholesterol and low-density lipoproteins in the meat of the layers fed on the control diet were significantly higher than those on 0.1% and 0.3% L-Dopa, but were similar to the birds on other treatment diets. The highest and the lowest population of *Escherichia coli* were found in the birds on the control diet and 0.3% L-Dopa supplemented diet, respectively. The layer hens on L-Dopa supplemented diets had a significantly higher *Lactobacillus* count than those on the control diet. In conclusion, 0.3% L-Dopa inclusion considerably improved the cholesterol profile in the blood and meat, reduced the population of *E. coli*, and effectively increased the population of *Lactobacillus* in the laying hens.

Key words: Cholesterol profile, Layers, Levodopa, Microbial load, Performance


Actara 25 WG insecticides, Acute toxicity, Insecticides toxicity, Mospilan PP, Meat goose, Overfeeding.
Azolla

A Review on the Use of Azolla Species in Poultry Production.

Abd El-Ghany WA (2020).


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