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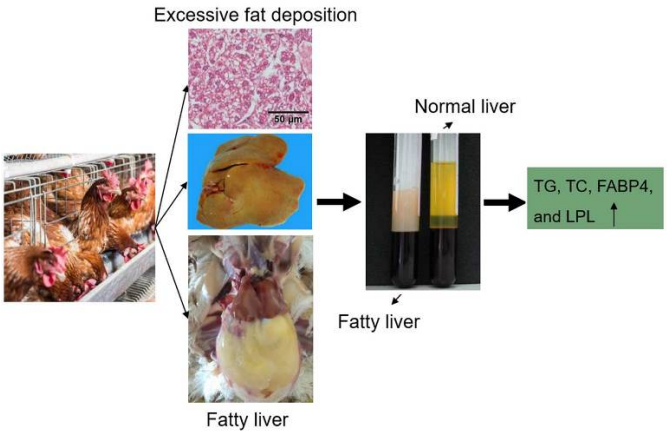
Volume 10 (4); December 25, 2020 [Booklet] [EndNote XML for Agris]



Zhu L, Liao R, Xiao Ch, Zhu G, Wu N, Tu Y and Yang Ch (2020). **Potential Biomarker for Fatty Liver Hemorrhagic Syndrome in Laying Hens.** *J. World Poult. Res.*, 10 (4): 545-555. DOI: https://dx.doi.org/10.36380/jwpr.2020.62

Research Paper

Potential Biomarker for Fatty Liver Hemorrhagic Syndrome in Laying Hens.

Zhu L, Liao R, Xiao Ch, Zhu G, Wu N, Tu Y and Yang Ch.

J. World Poult. Res. 10(4): 545-555, 2020; pii: S2322455X2000062-10

DOI: https://dx.doi.org/10.36380/jwpr.2020.62

ABSTRACT: Fatty liver hemorrhagic syndrome is more common in laying hens with excess body weight (BW) and in the middle and late phase of egg production. However, no specific biomarkers in chickens can be used to diagnose liver steatosis or liver injury. The present study aimed to assess whether BW can be used to predict fatty liver in aged laying hens. This study also searched for potential plasma FLHS biomarkers. For these purposes, correlation among BW, relative weight of liver and abdominal fat, and plasma markers were analyzed in Hy-line brown laying hens. Furthermore, plasma levels of potential biomarkers were analyzed during the formation of fatty liver. Concentrations of triglycerides and total cholesterol were positively associated with BW in aged laying hens, while liver fat deposition was similar among chickens with different BW, indicating that BW cannot be used as the only criterion to discriminate aged laying hens with liver steatosis. A trend of increasing triglyceride, total cholesterol, fatty acid-binding protein 4 (FABP4), and lipoprotein lipase levels was found as age increased, and they were positively associated with BW indicating that they might be risk markers for FLHS in laying hens. The findings indicated that the plasma level of FABP4 was positively associated with the severity of fatty liver in aged laying hens. All the above results suggested that FABP4 might be a potential diagnostic indicator for FLHS.

Key words: Biomarker, Egg production, Fatty liver, Laying hens, Poultry

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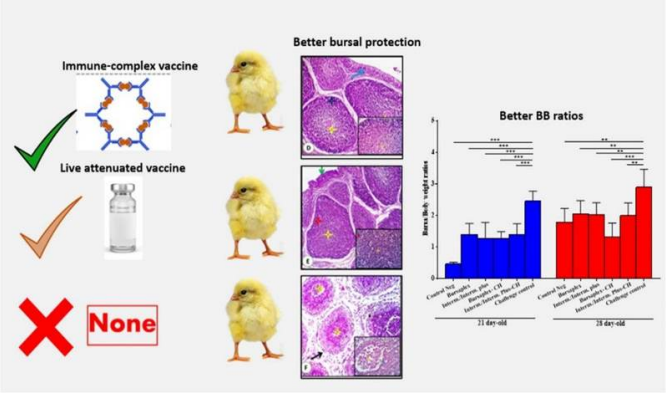

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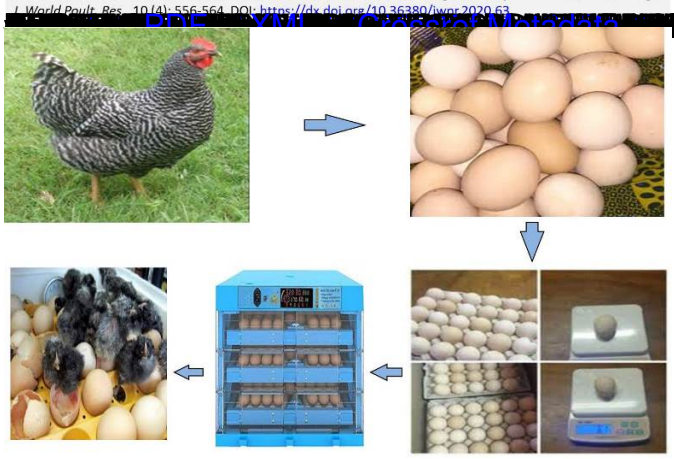

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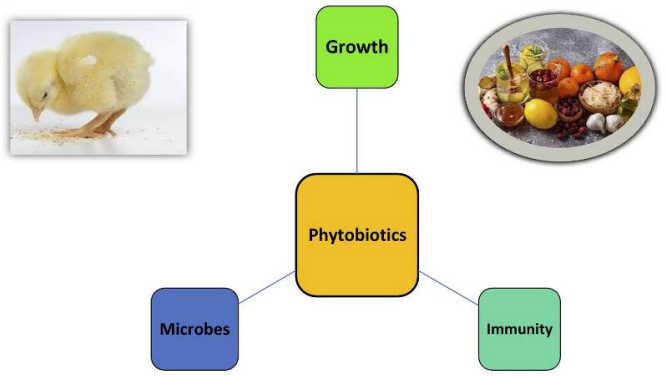

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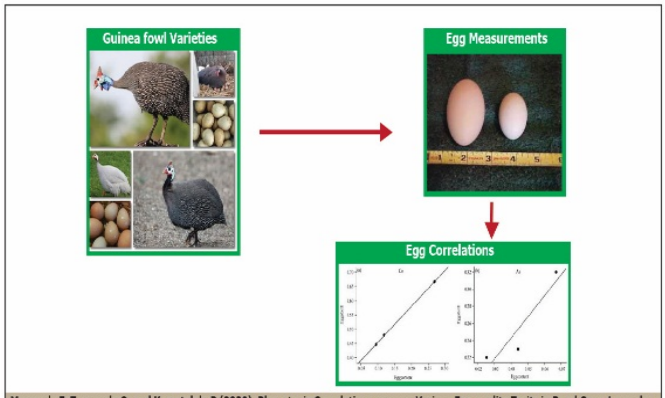

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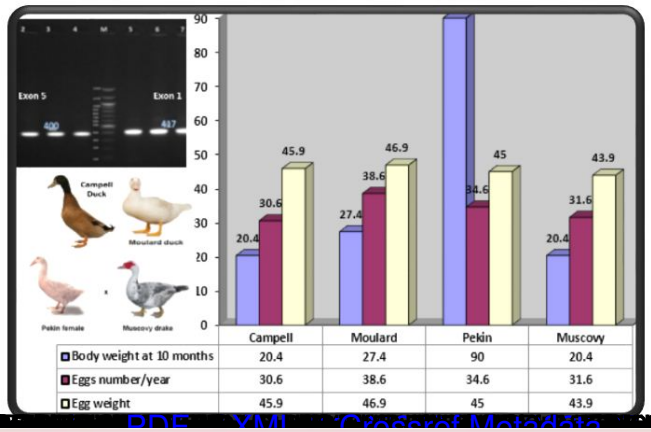

	Campell	Moulard	Pekin	Muscovy
Body weight at 10 months	20.4	27.4	90	20.4
Eggs number/year	30.6	38.6	34.6	31.6
Egg weight	45.9	46.9	45	43.9

Daily supplementation of anchovy fish (10%) in laying hen's diet could increase the level of total EPA and DHA in egg yolk.

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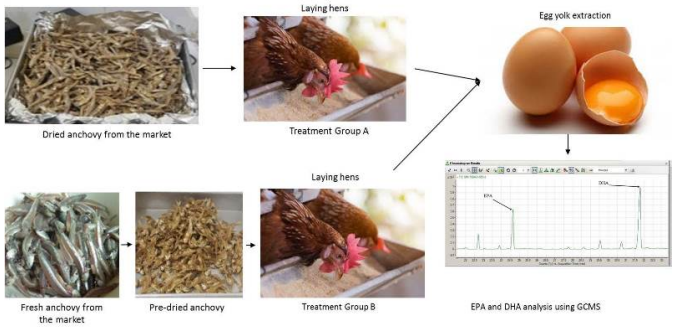

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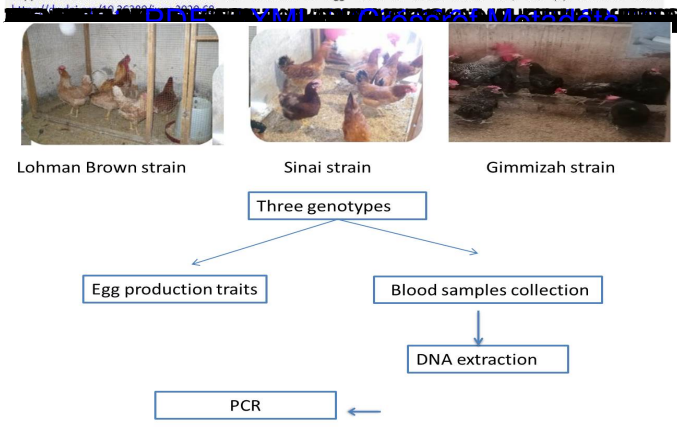

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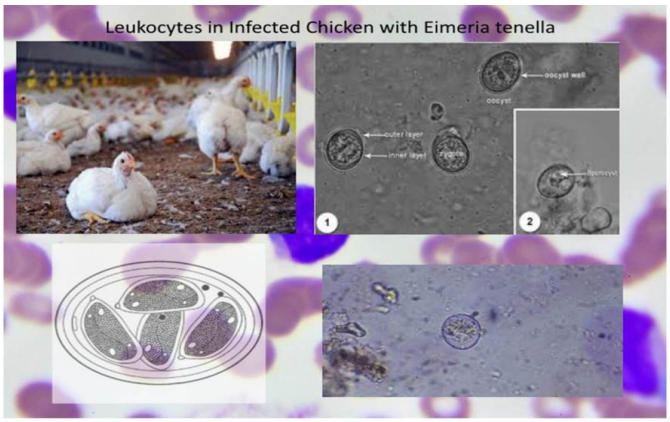

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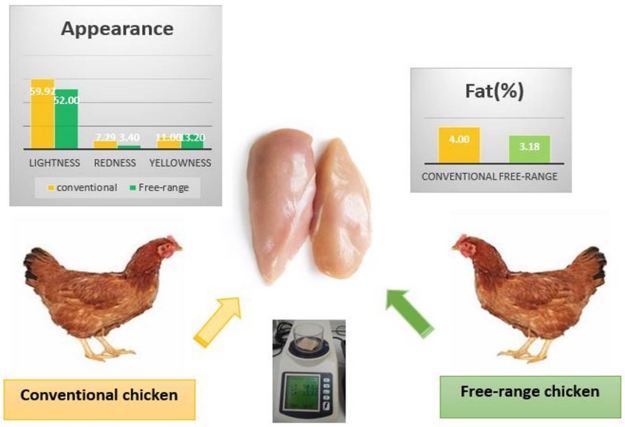

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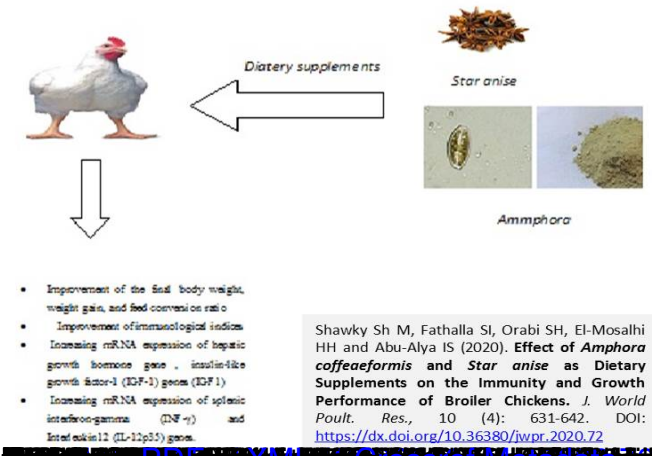

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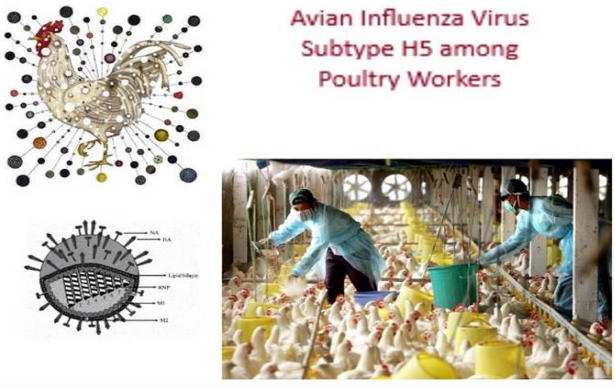

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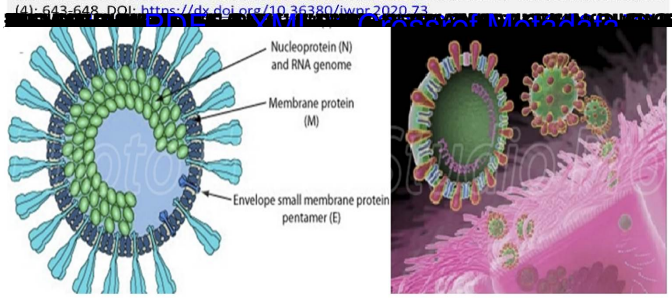

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