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SEA BUCKTHORN BY-PRODUCTS – VALUABLE FEED INGREDIENTS FOR POULTRY NUTRITION

Ana Elena CIȘMILEANU¹, Tatiana Dumitra PANAITE^{1*}, Gabriela Maria CORNESCU¹,
Cristina Gabriela TUDORICĂ¹, Ovidiu AVRAM²

¹IBNA Balotesti (National Research—Development Institute for Animal Biology and Nutrition, No.1, Calea Bucuresti, 077015 Balotesti, Romania); e-mail: ana_cismileanu@yahoo.com; tatiana.panaite@ibna.ro; gabriela.cornescu@ibna.ro; cristina.tudorica@ibna.ro; ; ²S.C. Aviputna S.R.L., str. Victoriei, nr. 40, Golești, județul Vrancea, România; e-mail: ovidiu.avram@aviputna.ro

Abstract: Sea buckthorn, a bioactive and nutritional plant, rich in fat soluble vitamins (A, K, E), water soluble vitamins (C, B1, B2, folic acid), beneficial fatty acids, flavonoids, phenols, terpenes, tannins, organic acids, and amino acids, is cultivated especially for its juice obtained from fruits which have demonstrated beneficial properties for human health. Sea buckthorn meal is the principal by-product and can be successfully incorporated into poultry diets, as demonstrated by numerous *in vivo* studies on poultry. This review synthesizes studies investigating the effects of sea buckthorn components, by-products, and extracts in poultry, with particular emphasis on production performance (body weight, carcass traits, egg production, and egg quality), intestinal health, hypocholesterolemic effects, and improvements in egg yolk and meat color. Other beneficial effects regarding meat quality are n3-polyunsaturated fatty acids enrichment and delayed lipid oxidation. In conclusion, the available evidence indicates that sea buckthorn and its by-products can be considered functional ingredients with real benefits on the health of birds and the quality of the products obtained. They can be included in sustainable poultry production systems, oriented towards the valorization of natural resources.

• Introduction

Sea buckthorn (SBT), a bioactive and nutritional plant, rich in fat soluble vitamins (A, K, E), water soluble vitamins (C, B1, B2, folic acid), beneficial fatty acids, flavonoids, phenols, terpenes, tannins, organic acids, and amino acids.

• Material and method

This study was carried out by consulting the archives of the MDPI publisher journals of animal science and Poultry Science journal using the keywords: sea buckthorn, chicken, hen, egg, meat.

The potential SBT by-products for animal feeding:

- a) sea buckthorn pomace/meal after obtaining juice and oil (pomace resulting from juice processing, meal as a result of sea buckthorn oil processing)



- b) leaves (after harvest)



- c) different extracts of sea buckthorn (from fruits, seeds, leaves) - flavones or quercetin type

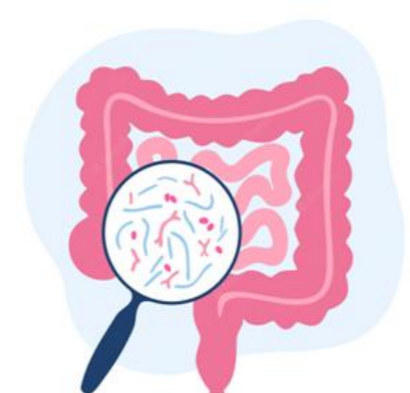
• Results and discussions

Sea buckthorn: Nature's Answer to Modern Poultry Challenges



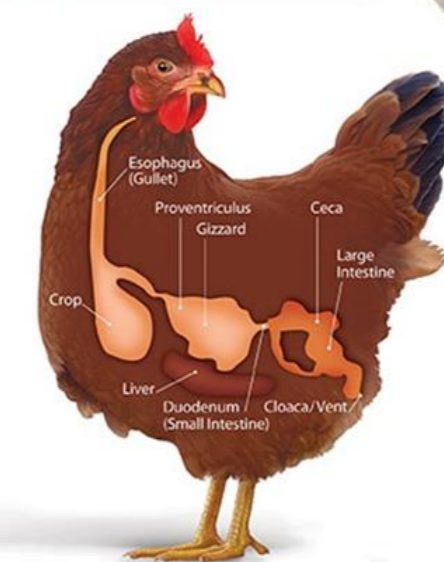
Productive Performances

Measurable improved performances in broiler growth, laying hen egg production, and meat quality — backed by scientific research.



Gut & Immune Health

Natural modulation of gut microflora and immune resilience without the risks of antibiotic resistance.



Sustainable Future

Byproduct utilization, reduced waste, and lower feed costs make sea buckthorn a truly circular feed solution.



• Conclusions

- The leaves, fruit residues of SBT, or seed oil could be used to feed poultry having a stimulating effect on growth and performance of poultry birds & livestock.
- SBT is an excellent source of nutrients for poultry birds and its by-products can be considered functional ingredients with real benefits on the health of birds, productive performances and the quality of the products obtained
- Feeding with SBT can be included in sustainable poultry production systems, oriented towards the valorization of natural resources. It is necessary to promote its widespread use for poultry feeding.
- Attention must be directed on SBT by-products availability on the market and the purchase price, because of their different nutritional and bioactive profile, and the level of inclusion in the poultry feed.

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